

[00:00:00] **Mike Philbrick:** All right,

[00:00:01] **Richard Laterman:** All right.

[00:00:03] **Mike Philbrick:** Doomberg Nation, we have DoomBerg.

[00:00:06] **Doomberg:** Guys, how you doing? I have...

[00:00:07] **Rodrigo Gordillo:** Good looking fella.

[00:00:09] **Doomberg:** I have to say, I am an institution managing far less than 10 billion, so I am in the right place.

[00:00:15] **Richard Laterman:** Masterclass is for you. Doom me, without a doubt. And before we get started, Mike please...

[00:00:22] **Mike Philbrick:** Yeah, I, this is the one time I'm gonna change the whole thing, but cuz obviously if you're watching this on four o'clock on a Friday afternoon of a Memorial long weekend, Memorial long weekend, you should definitely be taking all of this as advice, especially when it's an animated chicken talking about it.

[00:00:38] **Doomberg:** We ask...

[00:00:39] **Rodrigo Gordillo:** Yeah, there's no regulator. There's no regulator that's gonna look at this and be like, yeah, that was meant for real.

[00:00:45] **Doomberg:** Listen, you tell Gary Gensler that my weekend started two hours ago and everything I say is ascribed to the bottle of Kim Crawford that I've been slowly...

[00:00:53] **Mike Philbrick:** There you go

[00:00:53] **Doomberg:** ...away at. And no, it's really...

[00:00:55] **Richard Laterman:** Can't be responsible for any of it. Yeah, that's right.

[00:00:58] Mike Philbrick: In all seriousness, I, if you didn't know and you can't see the Berg chicken, it's not advice and we're gonna have some fun, interesting conversations digging down some holes that are pretty awesome. Anyway, there we go. Over to you.

Backgrounder

[00:01:11] Richard Laterman: Yeah. Yeah. No, for anybody who's just listening, we are faced with an avatar of a green chicken in front of us, and the pseudonym character Berg is with us today. So I guess we start there. Why pseudonym, why a green chicken? Tell us a little bit about the origin story of Doomberg

[00:01:31] Doomberg: Yeah, sure. We were talking a bit on, off air before we hit record and we're a team of former executives from the commodity sector. Don't really come at this from the Wall Street side. We come at from the industrial side, which makes us unique. Most people in industry don't speak publicly.

They speak through public relations teams and communication specialists, and they don't speak the truth. And we have several decades of experience on the team and the freedom to speak the truth. And we had a consulting firm that we were managing. And then Covid hit and blew all that up, as you can imagine.

And we reinvented ourselves consulting in the content creator space, actually, the subset of that space that serves Wall Street. Had a pretty good success there, made a name for ourselves, helped a few clients do really well. One of them in particular encouraged us to do our own thing,

[00:02:14] Rodrigo Gordillo: Were you GS Elevator?

[00:02:16] Doomberg: No, I wish.

[00:02:18] Mike Philbrick: That's one of our clients, but I can't tell you that.

[00:02:21] Doomberg: But we decided, hey, we have zero social media presence. We have nothing to start with but our idea. The barrier to entry in this business is zero, but the barrier to success is very high, as you guys know. And so, we decided we needed to create a character that stood out.

Like when you're scrolling Twitter and you see something interesting and then you stop and you look at it, you go, you make the journey from impression to engagement and the green chicken does that. And since we're a team and I'm just the outward facing spokesperson for that team, it didn't feel right to be a person. And then once the brand blew up, which blew up well beyond our wildest imaginations, we did a sort of study of anonymous accounts that blew up that later de-anonymize and the brand intrigue collapses. And so there's hundreds of people on Wall Street who know we are, who we are in real life.

And it's not like we're, I jokingly say it's not like we're doing, writing these pieces from prison. Like we don't have anything to hide. It's just that once it blew up, we didn't want to ruin the brand. It's a good mystique. It's a good image and it does catch the eye. If you're scrolling through YouTube and Bloomberg as a guest on a serious podcast, always cracks me up when we're like a call in guest at a, say an online conference and we have all these serious people with their suits and their ties and their professional mugshots, and there's a stupid green chicken, right next to them as though, and the, amongst them, and it's just really blown up and it's worked. And once you're in it, why would you stop?

And we're having the time of our life. This is the work of our life. It's been enormously successful and we're just gonna keep doing it. Like when you, one of the things I tell everybody when you find out what you're supposed to be doing in life, keep doing it. So we're just gonna keep being the green chicken and having a blast and talking to guys like you on a Friday before Memorial Day and enjoying the weekend and getting right back at it.

Publishing another piece this morning, got another one in the works for hopefully Tuesday, maybe Wednesday. And, it is just an amazing thing to get up every day and do exactly what it is that you were meant to be doing in life. And we intend to savor it, not take any day for granted, and it's just a real blessing

[00:04:13] Rodrigo Gordillo: just out of curiosity, have you been invited to any of the major networks like CNBC, Bloomberg is that, have they even contemplated it?

[00:04:21] Doomberg: We've been on, let's think, we've been on a Reuters sponsored webinar, I believe. But no, we would never get invited on tv. And that would be useless for our business, by the way. Like the entire market inefficiency that we're exploiting is the complete futility of the sort of modern establishment media as it pertains to truly understanding what's going on in the world, and then how that in particular impacts the finance world.

And this is the category that we've tried to help define and it's a subculture. And I suppose getting on I don't know, Tucker Carlson show when he had one would've been good for the brand. Maybe I don't know. Like it, you, just there's a whole subculture of content that is just 100% dependent on your success, is a hundred percent dependent on the quality of the work you produce.

It is a total meritocracy, which is another reason to be anonymous. We don't come at it with some big resume that people think, oh, I have to go and read that because so and so wrote it. The words and the ideas and the phrases and the writing stand on its own. It's the ultimate capitalist system.

We started with nothing. We had zero followers on Twitter and zero email subscribers when we started. We're up to quarter million on Twitter and 160,000 emails on ... And it's only because of the quality of the work that we're doing, we hope, knock on wood. And I think the most important thing is this maniacal focus on continuous improvement that we have on the team where we authentically measure everything and say what didn't work and why.

And that's one of the things we've really discovered through this process. Because again, writing a blog, **Barrett entry zero disciplined execution is still a durable moat**. You could take any old school business with standard economics and if you put your, really put the elbow grease in, measure everything, measure, analyze, improve, and control, classic sort of six Sigma corporate methodology, the data will tell you what you're doing wrong.

And the data will tell you what you're doing. And if you don't like the data, the market doesn't care.

[00:06:14] Rodrigo Gordillo: Yeah.

Following Data and Warren Buffett

[00:06:14] Doomberg: So you could either listen to the data and do better. For example, we put a piece out this morning and it's just done okay. Even though we love the piece and it's great, I know why that piece didn't do well. And the reason why that piece didn't do well, it's done well. Our existing subscribers like it, but the market of people who might be interested to read Berg are big Warren Buffet fans. And we took a bunch of shots at Warren Buffet before they cut to paid, and that probably is why the piece is just doing so so, but we know that, and we knew that going in. We have strong opinions about Warren Buffet and ultimately we're at the point where we can be authentic with ourselves and not really worry about just, writing to the audience or, trying to convert subscribers.

But the overlap and the Venn diagram of people who would be interested to read Berg, and are huge fans of Warren Buffet, is not zero. It's probably pretty comprehensive. We have strong opinions on the man and we poke fun at him from time to time. This was a piece where we really poked fun at him and it is what it is.

[00:07:06] Mike Philbrick: I did all the citations as well, and I do find that I rail against Mr. Buffett, just because everyone thinks he's just this pleasant old man sipping his Coca-Cola and eating his popcorn. Five a...

[00:07:18] Doomberg: Same house he's been in since 58. Yeah.

[00:07:20] Mike Philbrick: Yeah. Nothing to see here.

[00:07:21] Doomberg: We call it Mr. ...

[00:07:22] Mike Philbrick: Exactly. Mr. he's the ...

[00:07:25] Doomberg: Yeah. Look, to be fair, the man...

[00:07:26] Mike Philbrick: ... is the marketing

[00:07:27] Doomberg: ... business executor and let's like call a spade. The guy is a shark. He will press every advantage and he will crush his competition and he is a ruthless executor like Carl Icahn. Let's just cut with the America's Grandpa nonsense, right? Yeah, I would ...

[00:07:44] Mike Philbrick: And the, and the extension of it is that people seem to think that, oh, I'll read a book like Warren Buffet or I'll, I will invest like Warren Buffet in some way, shape or form, and I will get the returns. And this is the grand sort of lie, if you will, that's perpetrated. And everyone gathers in Omaha for the hoaxy type of scenario. And you're, you just look at it ...

[00:08:03] Doomberg: My advice. Look, we don't give investment advice.

[00:08:05] Mike Philbrick: ... people not ...

[00:08:06] Doomberg: ... give investment advice and certainly not on this show, but if you want to invest like Warren Buffet, like Berkshire has, it's not that complicated. The guy is a success. Like, I

would put money behind him. I would love it if he would take my money to personally manage. I don't have that. It's the wrapper of nonsense around him and the reputation that he is tried. That's what we're making fun of. And in the piece today. Again, I'm only telling this story because like we have a mindset of authentic continuous improvement and measure the numbers and why didn't this piece land?

It didn't land because he made fun of Warren Buffet, but Warren Buffet is stuffing rural farmers with wind farms. They don't want, because he's got a monopoly. Mid-American energy has a monopoly on wind turbines in the Midwest. And by the way, he's lobbying hard for subsidies for wind and against subsidies for solar boy, because he's a brass knuckles brawler.

And that's fine, but let's just call him what he is. And, but it is what it is, and we knew when we published it that having that kind of a bit of poking at the Oracle of Omaha above the cut to paid, was probably gonna mean that this piece would not fly.

Balancing Truth

[00:09:08] Mike Philbrick: So how do you balance that? Like how do you balance the truth versus what will sell down the channel?

[00:09:15] Doomberg: We have a very strong conviction, which is we always write exactly what we believe. And we never are gonna compromise. So if we were forced to write something that we didn't believe just to drive subs, we wouldn't do that. But you do have to be mindful of your audience. And so for example, we're far more interested in crypto than our audience. We built our audience on the back of our knowledge of energy and commodities and some sort of macro. We have a deep interest in crypto. We're fascinated by the space for lots of reasons we can get into, but when we publish a crypto piece it doesn't do well. But we still publish them once in a while because it's not just about driving a subscriber numbers. And we do have some of our subscribers who enjoy learning about crypto. For ex, I'll give you another example. We're pondering beginning to write a whole series of articles about cancer. Cancer is widely interesting to people. It is also, I think, interesting to investors. It is a fascinating area and we are debating how to work it into the brand.

And so it, it would never be that we would write a piece just for the clicks, but we do have to, one of the things that we say as we built this business is every business can be described by how they define who their ideal clients are, how they discover where their ideal clients hang out, how they entice them to come and consume their product, and how they delight them once they do.

And we've built a very good business with thousands of ideal clients, and we are mindful of the types of things that they like to read and we want to service that. But the overlap has to be that we authentically believe it. We enjoy writing it, we love the piece, and it also pleases them. And sometimes we like to stretch them a little bit and get them to think a little bit differently. But one thing we would never do is say, Hey, if we just write a clickbait piece about A, B and C it will drive sub zone, so we should do that. I'll give you an example where I know that we annoyed many of our ideal clients, but we decided to write a piece about this Palestine, Ohio train derailment.

And to try to tell people like, just like this is a big deal locally, and it's a modest deal regionally, and it's a nothing burger nationally. And we knew because it becomes so hyper political. Tucker Carlson was running stories on it and, the young guy who comes before him was really just blowing this up.

I forget his name. And our audience, because we write critically about renewables and because Biden is, we've only ever written with Biden as a president. We have a lot. And so we write critically about whoever's in power and Biden happens to be in power. We knew that writing a piece saying, wait a minute, let's stop with hyperbole.

This is a very big deal in a very small circle of let's say five square miles and beyond that it, it very quickly dissipates to almost nothing. And no, people in Mississippi don't need to be buying bottled water and no, the air quality in New York is not gonna be affected by a fire in Ohio. That annoyed a lot of our subscribers because it had become political and we skewed to the right and many of our ideal clients are conservatives and would probably vote Republican in most elections, or libertarian probably disproportionately.

But we decided that was like the right thing to do. We happened to have pretty deep domain expertise and a unique audience to be able to address that. And we actually made that piece free for everybody because we thought it was such an important topic at the time. It was a, it was a mania as you recall.

Like it was a full-blown, crazy mania, especially for people like, and I, we have lots of contacts in the industry having spent two decades in it. And after we wrote that piece, our phone blew up with all the executives we know in the industry and our contacts in government thanking us for writing that piece, because nobody else could say it.

And so that's an example where we wrote a piece, we actually lost a fair bit of subscribers because of that piece. But you have to stay true to your values. And I think in the long run, integrated over years, staying true to your values, is value enhancing.

[00:13:12] Mike Philbrick: Yeah, with, without a doubt, I guess it gives you that, the green chicken gives you that non-cancelable type of, a little bit of protection in that realm anyway, if you want to take on and publish on these...

[00:13:23] Doomberg: Sure. But people could find out who...

[00:13:25] Mike Philbrick: ... that, that can be driven by that. Yeah. They, of course they can, but it, it does give you ...

[00:13:30] Doomberg: It's not, that's ...

[00:13:31] Mike Philbrick: There's ...

[00:13:31] Rodrigo Gordillo: Did you guys see the interview with Elon Musk and CNBC?

[00:13:35] Doomberg: Yes, we did.

[00:13:36] Rodrigo Gordillo: When he is asked about why do you tweet that way? And he goes and says, have you seen Princess Bride? When Inigo Montoya looks at his, or the guy who killed his father and says, *offer me money, offer me power*. It's him. It's, I, offer me money. If I can't say whatever I want to say, I'm gonna say it no matter...

[00:13:59] Doomberg: When you have a hundred billion.

[00:14:01] Rodrigo Gordillo: It's the...

[00:14:01] Richard Laterman: Exactly. He has a definition of *fuck you money*. He really doesn't need ...

[00:14:06] Doomberg: No.

[00:14:06] Rodrigo Gordillo: ... don't know.

[00:14:07] **Doomberg:** Has fuck me money.

[00:14:08] **Rodrigo Gordillo:** ...feel like where you're... How many subscribers do you have again?

[00:14:11] **Doomberg:** ...which might , sworn on air. But it's a,

[00:14:14] **Rodrigo Gordillo:** there you go. Look, the reality is that there's.

[00:14:19] **Doomberg:** Yeah. Yeah.

Ideal Clients

[00:14:22] **Rodrigo Gordillo:** You can do, and I've done it a couple times in my career where I've, let's say, raised fees knowing that I was gonna lose clients, but it's, you're not gonna lose all of them. If you're adding value to ...

[00:14:33] **Doomberg:** Oh, great story.

[00:14:35] **Rodrigo Gordillo:** ... you're gonna...

[00:14:35] **Doomberg:** Great story. So when we went paid, because we were free for a year, we did a deep study of who our ideal clients are. Like, we are focused on our ideal clients and our objective is to delight them. And so we literally pondered whether we should have that Warren Buffet paragraph in the piece today because we, we wanted to delight our ideal clients and we decided it was funny enough and it was cheeky enough and the little winking gift that we put in just, was the chef's kiss for the piece.

But when we were deciding on pricing, we don't give investment advice. And so there's a whole subset of newsletters that don't give investment advice, but wink, give investment advice, and they can charge a lot because if they're very good, people are willing to pay for that, because they have a direct, an action they could take in their portfolio that might, more than for the cost of newsletter. We've never been that. But we pulled our ideal clients. We probably talked to 40 content creators and 50 ideal clients before we decided to set price and we set a reasonably high price.

It turns out our price was the median of the top 10 *finances* in the world. And so we weren't above market. We weren't below market, but it was high. \$30 a month is a lot for a newsletter that doesn't

give you direct investment. We might give you investment concepts, we might teach you things that then you can apply to your investment framework, which is fine, but we're not saying buy this stock entry price 45 and put ...

[00:15:51] Richard Laterman: No strategy ideas.

[00:15:53] Doomberg: Exactly. And we got a deluge of hate mail when we published what our price was gonna be. But we, like we knew none of them were our ideal clients, and our objective was to set a fair price for our ideal clients and to like them. And we had amazing conversion of free to pay when we went behind the paywall.

In hindsight, we probably priced it a little cheap but that's okay because we made it up in volume. But it ...

[00:16:16] Mike Philbrick: And you can do a volume business too. This is a...

[00:16:18] Doomberg: The incremental subscriber doesn't produce incremental work, except for the initial onboarding. And thanks for joining. And we do respond religiously to all subscriber emails just to try to, again, our objective is to delight our customers.

And it is a very small team and we do everything personally. And people are like, yeah, when you DM the Twitter account, you're interacting with me. And when you send an email to the Berg account, you're probably interacting with the editor-in-chief. But we do answer every email, every DM aside from the Asian clickbait - hi, how are you doing? DMs that we get, but...

[00:16:53] Mike Philbrick: Prince

[00:16:53] Doomberg: Exactly.

A Piece Comes to Life

[00:16:55] Richard Laterman: So you have this freedom, right? You have all this freedom to write about so many topics that you're interested in. You also, you and the team are not shy to engage in controversy from what I've read and listened to. So outside of your core competency in the energy and commodity space, and I guess you might say crypto somewhat falls in that category, how are you deciding what to write it out?

Because you guys talked about regulatory capture, policy, geopolitics, you talked about warfare. How are you deciding, obviously current events I would imagine plays some role there, but what else is driving...

[00:17:30] Doomberg: So it's hard to articulate, but I could give you like a classic way a piece comes to life. I'm on the internet all day, so we don't take meetings. That's a general rule. The only meetings you ever schedule are podcast appearances. Now even for our legacy consulting business. Our clients know they can text, email, call, we'll pick up.

We're very responsive. The modern concept of a meeting is the giant time suck, and a total waste of time. And when we shed that the world was our oyster. So I spend all day on the internet and I see something. And the way a piece typically comes together is, I'll read something it'll remind me of a story from 20 years ago.

Because every great piece of writing starts with a story. And it'll motivate me to make two or three main points. Like I read this story, this tells me that A and B are true. And to set the stage where there's a story that feeds the thing I just read and then I'm gonna make A, B and C post paywall.

Typically. That's how a piece comes together. And since there's no shortage of crazy news, especially in the energy sector, and there's no shortage of stories that I've read in the 30 years that I've been a professional, I have this, I have a sort of molecular map of how the world actually works.

Great story. A great example of this is the piece we wrote last year called *Moribund for Bund*, describing what had to be the fate of BASF in Germany, which is an iconic chemical company that I know very well. I've spent countless visits to ... in Germany, and it's a really amazing place.

And they invented ammonia. And ammonia is the reason why we have fertilizer. And fertilizer is the reason why we have four more billion people on the planet than we could otherwise support. And to see this iconic giant in the industry get their knees cut out from under 'em because of the insane policies of the Green Party in Germany.

It's truly amazing. And we wrote this piece, *Moribund for Bund*, God, it must have been like last October or whatever. And then, lo and behold on Twitter today, like all these months later, I'm pulling it up as we're talking, but somebody put a tweet out from the CEO of BASF basically saying, hey guys, like this is the end of Germany.

Yeah. Carl Quinan from CNBC put out a tweet this morning quoting the BASF CEO. So let me read it. *We've been naive as a society because everything seems fine. These problems we have in Germany are accumulating. We have a period of change ahead of us. I don't know if everyone realizes this.* And I retweeted that and said, some of us do, right?

Like we wrote about this last year, it, you cannot run a integrated chemical site with natural gas selling at five times the price that it is in the US. You just can't. And they won't. And every major chemical player in the world is pulling out of Germany, Dow, BASF, pick your favorite. And this was totally predictable for anybody who knows the molecular framework, how the world works.

And so we saw a piece about BASF struggles. I have in my head the amazing story of the invention of ammonia and the Haber process at the turn of the century. And then we said in that piece, A, B, C, and D, here's what's gonna happen. And by the way, we also knew in our brains that the vast majority of chemical sites, like the *verine* sites at ... is all back integrated to this natural gas plant that is producing electricity and industrial grade steam.

So it's not just the commodities like ammonia, it's the stuff that goes into car paint. And it's the stuff that goes into adhesives. And it's the stuff that goes into, pick your favorite finished good. Germany is not gonna be doing any of that soon, They're going to de-industrialize. And so the ability to stitch together a story with an event and three or four consequences is how every piece is born.

Unintended Consequences

[00:21:19] Mike Philbrick: I think it's the unintended consequences that you guys are just so good at. Both falsifying when the world goes in a sort of direction like they did in the train derailment, or the recognition of a change that will happen in an industry long before just because of the unintended

[00:21:39] Doomberg: here's a great example, heat pump. We, the first piece of 2023 for Bloomberg was predicting that the words *heat pump* would be the phrase of the year. It's all you'd hear, would saturate in the headlines, and sure enough, it's come true. Now let's talk about like, the mother of all unintended consequences. We shared this with our *pro tier* members in our may Doom Zoom, cheap commercial for our high end here, on Thursday.

So what's going on in Germany today? The average German home has a natural gas powered furnace at no air conditioning, and kinda sucks in Germany for about two or three weeks in July and August.

It's hot, it's muggy. Most of 'em go on vacation maybe, is the thought. So it doesn't matter. But actually, the average citizen doesn't, can't really afford to go to the Mediterranean or wherever it is that they vacation.

So there's this mandate as of January 1st, 2024 that you basically can't install a new gas furnace. Everyone has to install a heat pump. And this is like the most controversial law that's ever existed in Germany. There's a big piece in the Financial Times today. Let's ponder a certain unintended consequence. A heat pump runs both ways, so you can take cold air and make it warm, or you can take warm air and make it cold. So for the very first time, because of this mandate, millions of Germans will have air conditioning. What do you think is gonna happen in the summer? They're gonna be spewing much more carbon than they used to, and they're gonna way more than offset the alleged savings that will come from removing all of these natural gas furnaces. And oh, by the way, all the energy that's gonna go into reconstructing these homes and making them suitable for heat pumps, nobody ever talks about that, nor the fact that the Chinese basically have a controlling position in the heat pump market, nor that we have a transformer shortage.

And electrifying all of this combustion is probably going to create some challenges. And so there's a never ending series of unintended consequences for us to talk about. The heat pump one is one of our favorite. And to be totally transparent and fair, we stole that from the annual JP Morgan energy letter.

Mike Cembalest, I think his name is, I want to give full credit. It's one of those things that you read and you smirk and you say, yeah, that I'm gonna put that away in the back of my mind for a future Doomberg story. And the most important thing, go ahead.

[00:23:57] Richard Laterman: No. So I was just gonna say, but they haven't outlawed the gas stoves in Germany just yet.

[00:24:01] Doomberg: Oh no, it's all, no, literally you cannot install a new gas combustion machine after January one of any kind industrial, residential. They want to electrify everything. And...

[00:24:15] Richard Laterman: Because that's where it's going in the US, the site, guys. Or at least that's a little bit of the chatter. And you guys wrote a little bit about this as well, right? They were trying to ban gas stoves in the US

[00:24:23] Doomberg: Yes. So we view the US as five years behind Germany and we should be watching what's happening in Germany, the reason why we're so fixated on Germany. Because Germany, like California's, two years behind Germany and New England is like two and a half years behind Germany. And ... country is 10 years behind Germany.

But that's the future. So let's watch what happens. And the piece you're referencing was one of our favorites. We wrote it in January. It was called *Home Cooking*. And as we said in the piece, if you live in the suburbs and you drive a car and you occasionally barbecue, the environmentalists are coming for you. And you best get ready.

Government Interventions and Nuclear

[00:24:55] Rodrigo Gordillo: So Berg, I haven't read that piece and I, you lean right? So I'm guessing I know what the answer's gonna be, but okay. Clearly there is a broad push from policymakers to fast track the greening of the economy in whatever way. Maybe one of them is this natural gas thing throughout your stoves.

Do you see value? Like where do you see the role of government in attempting to move society towards a North Star in spite of the fact that along the way they're probably gonna make bad choices? Do you think they, there's value in governments intervening or no value at all?

[00:25:32] Doomberg: No, I absolutely, I'm not like a pure libertarian. It would be great if government started with physics. So there's a difference between physics and *quote*, the science.

[00:25:43] Rodrigo Gordillo: Amen.

[00:25:43] Doomberg: Physics is hardwired into the universe. So there is a very clear path to decarbonize our grid. It involves no invention and diminishing financial investment.

And it has been done several times in the west, and it's nuclear. So look at Ontario. Ontario has the, amongst the greenest grids on the planet. I think 60% of the electricity comes from nuclear, and maybe 25 or 30 comes from hydro. And a small amount comes from natural gas. None of it comes from coal.

And the balance comes from renewables. I drove through Ontario recently. There weren't green fish in the lakes. It wasn't like it was, the pavement was flat and the people were polite and there wasn't garbage on...

[00:26:23] Rodrigo Gordillo: I played soccer next to the Pickering power plant, my whole youth. And it was a little odd, but they seemed ...

[00:26:31] Doomberg: Only odd?

[00:26:31] Rodrigo Gordillo: I had an iodine pill in my pocket just in case, but ...

[00:26:35] Doomberg: You are clearly a victim of propaganda.

[00:26:37] Rodrigo Gordillo: Oh no. I know. It's so absurd, right?

[00:26:39] Doomberg: And especially...

[00:26:39] Rodrigo Gordillo: The nuclear power plant is going down. Let me put, pop this pill on my mouth. I'm gonna be ...

[00:26:44] Doomberg: If you see a green glowing fish while you're playing soccer next to that plant, you've got bigger problems than that iodine pill's gonna solve. But in all seriousness, France did it, right? It can be done.

And my favorite argument from the sort of Malthusian radical environmentalist is, nuclear is too expensive and takes too long. Let's ponder why those two things are. They're too expensive because you have stacked the regulatory agencies with environmental radicals who make the industry go to 15 nines instead of nine nines of safety.

And then it takes too long because you sue at every step of the way to litigate every permit. And next thing you know, of course, who wants to put capital at work when you have an NPP calculation and a discount factor, and it's gonna take you 15 years to generate revenue. So yes, in the modern regulatory construct, which is a political choice, nuclear is too expensive and takes too long.

In a world where government cut all the red tape and said, we're going to do this. Here's the example. Fifty years ago with technology we had back then, there was no such thing as a computer

or an iPhone 50 years ago. I know that's crazy. For some of your younger years listening, Canada put a new Candu reactor in every year for 20 years. It was systematized, it was supply chain maximized, it was safety oriented. They're all still running. None of them have blown up. The one you played soccer by has just been saved. Thanks to the good work of our good friend at the Canadians for Nuclear Energy, Dr. Chris Keefer and his team. In no small part, at least imagine what we could do with 50 years of technological development, a motivated government cutting through red tape, and so on.

So yes, of course there's a role for government. I drive on roads. We wouldn't have a national highway system without the government. There, there's a role for government, but our government has been corrupted. It has been hijacked, it has been made a mockery of.

What are the reasons why government is a joke. It's because nobody with any talent would ever go into it, or at least nobody with any talent and morals would ever go into it. Because you have to run the gauntlets of personal destruction just to get there. And then you have to push on the *Giants of Giant Strings*, which is trying to get an entrenched administrative state to do anything, as Donald Trump found out.

And so the only people that still go into government are people that don't have the talent to make their way in the private sector, or people who are so loose ethically that they're willing to be totally corrupt and they go into Congress poor, they leave a millionaire and everybody smiles. And...

Fossil Fuel Conspiracies

[00:29:01] Richard Laterman: I remember reading, watching a documentary, it's quite a while ago, maybe five, 10 years ago, Pandora's Promise, and it talks about all these environmentalists that changed their mind on nuclear, and they went down the rabbit hole, and they realized that much of the propaganda and much of the fear mongering and scare mongering that went on, and that kind of now permeates the zeitgeist on nuclear energy, was financed by the fossil fuel industry because they had long realized that nuclear was the only viable alternative to fossil fuels.

And so it made total sense for them to finance this, these hit pieces over and over, over decades in order to scare people into pushing policy against nuclear. Do you remember the, did you watch this pod, this documentary? Are you familiar with this hypothesis?

[00:29:53] Doomberg: There's a bit of half truth there that has a bit of a nefarious intent. In my view. It is unquestionable that the fossil fuel industry has a dirty history in playing ball against the nuclear sector, The environmentalist movement is born from a much uglier, *Malthusian eugen* strain of thought that there's just way too many people on the planet and let's get rid of a bunch of 'em that don't look like ...

[00:30:16] Rodrigo Gordillo: Eugen. what a, that's a hot take right there, Berg. I...

[00:30:19] Doomberg: It's, while we've written about it and we're not afraid of saying it. And so as part of the coverup of that, the Sierra Club, Greenpeace, the founders of those organizations were deeply racist, deeply Malthusian and strong proponents of the eugenicist movement. Now, that doesn't mean that the members of it today would ascribe to those beliefs, but there is that strain, that ugly history and part of the emphasis of the oil and gas sector's role in knee capping nuclear, is meant to deflect from an even uglier history on the environmental side.

Now, that's not to forgive what the oil and gas, and look, oil companies are their worst enemies. Like most of the time, like they do nasty stuff, they bribe corrupt governments, they pollute the environment, they cover things up. There's a lot more flaring in the Permian Basin than is officially reported.

Like all that stuff is true and is important and needs to be dealt with. That doesn't mean that we should just abandon fossil fuels and allow society to collapse at the same time. And so there's always going to be companies that do bad things, that pollute, that, they, and we're all for strict enforcement of pollution controls and so on.

And in fact, the associated gas problem in the Permian Basin is a real challenge and an opportunity, depending on how you manage it. It's just one example of a really complex thing that government, most government officials have no idea what's going on. And back to the original question that started this whole vein, there is a role for government and we just wish government would be more competent and we think one of the consequences of the hyperpolarization of our politics is, anybody with competence or decent morals doesn't want to go into it.

And so you're left with the still bottoms, the people who are either incompetent or unethical. And then you get what we get. You get Nancy Pelosi, you get, pick your favorite on the Republican side, like being wheeled around the Senate because they're, they, it's all just so partisan and so polarizing and so destructive.

Nobody starts with what's great for the country.

[00:32:10] Rodrigo Gordillo: I...

Nuclear, The Good and Bad

[00:32:10] Richard Laterman: To linger on nuclear just for a second, can you, we know that you're a proponent of nuclear, that I've read from some of your pieces that you see no alternative to decarbonizing the planet without nuclear. But can you steel man some of the concerns that exist around nuclear? And then could you say why they are not as concerning as they might be but can you make a steel man ...

[00:32:32] Rodrigo Gordillo: Could you also add to that? I'm curious to know about advanced small modular reactors. SMRs, because I had a client 15 years ago that said this is it for mining, for small towns. And then I never heard about it again.

[00:32:45] Doomberg: Rod, we just wrote a piece on it, so lots to unpack. Let me take it in order. So first of all, there are three options. There's we can't decarbonize without nuclear unless we're willing to destroy everybody's standard of living. And this brings us to the sort of overarching point of Doomberg is, there are no solutions. There are only tradeoffs.

So let's be honest and authentic about the trade-offs, and then collectively decide with some competence and debate which of the trade-offs we're going to accept. And so for nuclear, the only real trade-off is waste and how do you handle it? The nuclear waste issue has been pounced on correctly and intelligently by the environmental Malians.

As the greatest scare, scaremongering technique in the history of humankind in the vast history of the nuclear civilian nuclear sector and all the quote *nuclear waste* they've generated. You cannot find a single human being on the planet who has ever been injured by nuclear waste, period. You have to weigh that against all the people have died in the oil and gas fields.

And we had the BP pipeline and we had the Exxon Valdes, and we...

[00:33:51] Richard Laterman: Coal mines.

[00:33:52] Doomberg: And coal mines, but we have dead birds because of wind turbines. And we have slave labor for solar, and we pick your favorite. Every technology has its trade-offs. The nuclear waste canard is the most exaggerated piece of propagand. God, God bless them.

Kudos to the environmental rallies they have won, and we should loudly condemn the nuclear power industry. They fell into a trap. They fell into the trap of, if only we could make a few more nines on the probability curve of nothing ever happening, then we'll be okay and they'll leave us alone. They'll never leave you alone.

They'll always ask for another nine. And the fact that you're pursuing so many nines tells the non-expert, whoa, this must be a big problem. Dig a hole, shoot it underground, plug the hole, and never think about it again. The odds of a properly encased, bunch of radioactive uranium or spent fuel from a nuclear power reactor being injected 3, 4, 500 meters underground and then plugged, ever leaking from that, finding its way to the surface and hurting somebody is ...

[00:34:56] Rodrigo Gordillo: So did you read *The Fifth Risk*? Because I remember reading that, like I hadn't thought about nuclear, forever. This is Michael Lewis' book, *Fifth Risk*, on Donald Trump. And he has a chapter there that would terrify anybody about nuclear waste.

[00:35:10] Doomberg: Then it's total propagand. I've not read it I don't read political...

[00:35:14] Rodrigo Gordillo: He paints a good picture as he generally tends to do.

[00:35:16] Doomberg: So my point is, that is a trade-off. We the entirety of the nuclear waste you've ever generated could fit on a basketball court. And I think the height of that waste would be 10 meters for the US and 30 meters for the world. Don't quote me, but it's something like that.

[00:35:33] Mike Philbrick: So how does Fukushima work into that?

[00:35:34] Richard Laterman: Chernobyl and any other fallouts...

[00:35:36] Doomberg: Of course. So again if you actually go and look at how many people died, it is a, it is greater than zero, right? But it is a very small number. And last I checked, I flew into Tokyo. Life is fine now. There is issues, and there's things that you have to manage.

There are trade-offs, but with the latest fourth and fifth generation. So there's, the nuclear sort of has two challenges, right? Like the fleet that we have today, that's critical because it provides an enormous amount of our base load power. But then to your question about small modular reactors, what does the go forward technology look like?

So the slight of hand of the environmental Malfusian is pointing to the worst possible outcomes and applying it to the latest technologies, that had 50 years of benefit and have been chasing the seventh, eighth, ninth, and 10th nine. 99.999 999. And *How Many Angels on a Pin* was, I think the title of the piece we wrote about nuclear waste.

Like how many of them you want to count before you're comfortable. And so the trade-off is we could all destroy our standard of living, or we could pollute the planet with fossil fuels and run the risk, take, roll the dice on climate change. Or we could all decide that this magic mole this magic technology.

Again, Josh Wolf, I believe was the one I first saw, say it. Maybe somebody else predated him. If fission was invented today, it would be celebrated as a civilization-saving technology and we would be implementing it post-haste. Now, one of the real challenges with nuclear energy is the word *weapon* is associated with it. And people have a, an association of existential threat. So we had the worst possible thing ever happen, a poorly run plant completely melted down in Russia. Let's measure that and weigh that against your supposed climate alarmism around emitting CO2 from fossil fuel burning. Let's weigh those two things on a scale and decide what is the probability adjusted risk of fourth generation nuclear technology experiencing something like that, versus what you're telling me is, we're gonna boil the oceans if we keep burning oil and natural gas.

So which risk are we gonna take now to SMR? We wrote a piece called *Gaining Steam*. I have this memory of all the pieces that we've written, where we chronicled a really important industrial project between Dow and X-energy at an integrated petrochemical site. A little known fact, if you add up all of the carbon emissions associated with burning fossil fuels to produce industrial grade steam, emissions are greater than the sum of all of the automotive and airline emissions in the world. And if you compare the amount of talk we've had around electric vehicles versus, hey, what are we gonna do about industrial steam, it turns out fourth generation nuclear reactors can generate pretty good industrial steam. It's not the, it doesn't like reach, say, cement levels, but you can catch a lot of the base of the pyramid of carbon emissions for sort of 500 to 1000 degrees steam.

That anybody who's ever worked in the industry knows, there's a reason why Cogen plants based on natural gas, so popular at these integrated sites? It's because you produce both electricity and you make use of the excess heat. And so the, I think like the Cogen overall efficiency of energy in the molecule, methane going in versus the work that you extract out of it, is something like 80% as opposed to when you just burn it to produce electricity.

It's probably like in the mid-fifties, I think. So if you can have a nuclear power plant instead of a gas powered turbine that produces both electricity and steam, which is what the Dow X-energy project purports to demonstrate, you have a game changer. Like you could truly attack a huge slug of our carbon emissions with, once you roll these out. Very little sacrifice to our way of life.

And so it's technologies like that. We don't wanna just be Doomberg and we don't want to just make fun of nonsense. You also want to highlight potential proposed solutions that people could get behind. Another piece that we wrote about a very fascinating little company called, the piece was called Ricearoni and *RONI* is the SPAC, and this is not investment advice, but the Rice Brothers who are notorious in the energy sector and EQT and all the natural gas companies that they've made tons of money for, shareholders for, they've taken to market a pretty interesting technology that purifies oxygen out of the air so that when you burn natural gas to produce power, you get pure CO₂, which you can then inject underground for carbon capture and sequestration without having to pay the tropic and economic penalty of trying to capture CO₂ from a dilute mixture of air on the back end of a power plant.

That's a very fascinating technology. And that was pretty interesting. The real challenge with that technology is, and we say it in low voices because we don't want the Malthusians to hear it, is the enabling economic driver of carbon capture has actually enhanced all recovery. I digress.

So injecting CO₂ underground allows you to get more oil out of the ground, which allows the value of that CO₂ to be recognized and to be something that companies want. But I digress. You can in theory, run a power plant on natural gas, which we have an enormous amount of, where the product coming out of that is pure CO₂, which is very easy to capture, to compress and shoot underground.

And so you can have embedded in the technology, carbon capture. Those types of solutions exist and there's no shortage of engineers that know how to implement it. So there are practical ways for, again, here's the equation that we should be trying to optimize. We like to say energy is life. And your standard of living is defined by how much energy you get to waste.

You, Richard, you, Mike, you, Rodrigo. How much energy you personally get to waste dictates how many right angles will surround you when you go to bed. The equation that we should try to optimize is how much standard of living are we going to create for all of humanity. We could talk about how to equitably distribute that standard of living later, divided by our carbon emissions.

This gets back to the trade-off. So let's optimize that equation and when that is your equation, when you have a human standard of living variable, you're also mindful of, and you divide it by, hey, let's try to get rid of as many carbon emissions as we can. Then deductive reasoning leads you to nuclear. It just, there should no other way.

Comparing Countries

[00:41:55] Richard Laterman: So you mentioned Ontario as having, as close to a green grid as you can imagine in this day and age. I would imagine you would point to Germany as perhaps one of the countries with the most dysfunctional energy policies, especially with how much they relied on a potential geopolitical fallout.

We'll get to that in a second. But if you could put on a spectrum, some of the best country, some of the countries with the best or more Cogen energy policies, countries with some of the worst and where the US fits in that continuum.

[00:42:27] Doomberg: Yeah, Germany, given where it started, is unquestionably the worst. And in fact, if you looked at the carbon intensity of their grid this winter, it was amongst the brownest in Europe because they retreated to the coal mines with a speed and efficiency of the evacuation of Dunkirk, once they realized the jeopardy they were in.

[00:42:43] Richard Laterman: And wood. And wood, right?

[00:42:45] Doomberg: Oh wood, coal. Look, here's what Germany did. They saw the crisis coming and they realized they screwed up. And by the way, no country has preached to the developing world the need to cut their carbon emissions stronger and louder than Germany. Okay. So let's talk about the path function and why it matters. So Germany saw a crisis coming and they took off their masks and they scoured the world and they bought every BTU of energy they could get their hands on regardless of costs, carbon footprint and impact on the developing world.

So if you're a Pakistan, quarter billion people, by the way, people just like the five, four of us on this call. If you're a Pakistan who had a great, wholly dependent on liquified natural gas, and you had been lectured to by the Germans for years about how you needed to decarbonize your grid, and then you saw them buy every carrier of LNG they can get their hands on and every cargo of coal they can get their hands on and every ship full of clear cut trees from the US Southeast that they could burn.

You're saying, okay, when push came to the shove, my grid collapsed. I'm the one that has the political upheaval. Guess what I'm gonna do? I'm going back to coal, because I could make a giant pile of coal and I got coal and I could buy coal and I'm gonna make a giant pile of it and screw you and your carbon emissions.

Billions of people will have walked away from their carbon commitments because of what Germany did in the winter of 2022 period. They, they're watching what they did and not listening to what they said. And so Germany is the poster child for how to do it wrong now.

Which countries are doing it right? France, if it could get its act together on actually maintaining and not trying to handicap their own nuclear power. Within France, there is a school of radicals in power that are doing everything they can to make their nuclear reactors perform poorly so that they can, that they can push to get them shut down, just like they did in Germany.

That has, since I think Macron has correctly identified that issue and I believe that is going to be solved. Ontario has done it spectacularly well. The US is a mixed bag. I think California, new England obviously are catastrophic, catastrophically stupid. And then we have a grading in between and there's some stupidity on the right where we're just gonna keep burning coal.

And like we ran the math on a piece that we wrote recently about the regional disparities of natural gas prices in the US and so on. And it turns out that if you add up how much natural gas we are either flaring in the field or exporting, because we don't really have any use for it here, it roughly balances the total amount of coal we're burning in the country. So instead of flaring and or exporting our natural gas bounty we could literally displace all the coal we're burning. Now there's a coal lobby and Joe Manchin from West Virginia and there's all kinds of nefarious actors on the other side of the energy equation who are protecting vested interests.

And they should be just as admonished and highlighted as the Germans are. But we have so much natural gas in the country, it's incredible. The piece we wrote on US called *Guilt by Association*, if

anybody's interested to read it. And we talk about the challenge of associated natural gas, especially in the Permian Basin.

And we had literally in December in California, because they refused to build any pipelines, natural gas was trading at \$55 per million BTU, while it was priced negatively in the Permian Basin in Texas. It was priced negatively because the main reason why people are drilling in the Permian is to produce oil and they gotta do something with this natural gas.

[00:46:10] Rodrigo Gordillo: Amazing.

[00:46:10] Doomberg: And so for the lack of a pipeline, you had this really valuable molecule being given away in Texas and they were starved for it in California. Now you tell me if that is in an indictment of the, so when you say what is the US policy, there isn't a US policy, there's a fragmented series of regional policies.

Much the same in other countries, but another country that is blessed with great resources and has done well is Norway. They have a huge amount of hydro. And then Finland recently turned on a world scale nuclear reactor, and suddenly their electricity prices went negative and they had to actually throttle back the amount of nuclear they were putting onto the grid because it became windy or it was sunny, I forget which.

And so dealing with the intermittency of renewables. And then another country that I would mention is United Arab Emirates. They've been on a decades long journey of nuclear power. They just turned on their third of four planned nuclear reactors. They have an amazing internal culture around creating the workforce.

They need to sustain these things. 25% of their electricity for the next 80 years will come from carbon free nuclear power. They've already invested the money. It will quote *cost to do that effectively*. The marginal cost of their electricity for the generations that they're leaving their economy to, will be de minimus.

Kudos to them. They had the planning and the fortitude and the foresight to see those projects through. And that's a real success story as well. And by the way, any country in the world could do that. It's United Arab Emirates. It's a tiny country. They've just decided they wanna go nuclear. They bought the best technology.

I think they worked with the Koreans. And they have the workforce, they have the education, they have the popular support, and now they have a grid they can count on. It's there, winning is a choice. **Let's choose to win.**

Pros, Cons and Propaganda

[00:47:45] Rodrigo Gordillo: Where does solar power and battery technology come into this whole thing?

[00:47:51] Doomberg: So, battery techno, we'll just do solar first. Solar is very seductive and we are less harsh on solar than we are on wind for a variety of reasons. We are bombarded every day by orders of magnitude more energy than we could ever possibly harness, by the sun. And the prospect of figuring out how to stick your hand out the car window and just grab a few of the dollars that are flowing by is very seductive.

And one that we, and of course I personally have several years of direct experience in the solar industry, and I know it well. So much so, that I'm able to write. We think pervasively about how China stole that market from the US because we were in the market, and they stole it from us at the time. And the solar industry is interesting.

The one of the, so anytime you assess a technology like solar or batteries, and I'll take them in turn, you have to actually fairly see the world as it is. And to do that we always have what we call, **what are the pros, what are the cons, and what is the propaganda?** So with solar, there's a bunch of pros.

The pros are it's the efficiency isn't impacted by scale. So a solar panel is gonna generally work as well sitting on a home as it is sitting in a giant commercial array. Now that's not totally true. You can orient the panels a little bit with some control, but really I have a jack battery system and I have some solar panels that go with it.

And when I'm out at my lake property it fires up and it juices the battery and I can run my power tools and it's really great. It's really fantastic. It's portable. The scaling efficiency factor is pretty small, which actually means it's, it can be easily distributed. It's pretty efficient.

It's pretty known how to make these things, how to install them. It's pretty commoditized. And it works really well in areas where you have a lot of sun. It works really terribly in areas where you don't have a lot of sun, especially Germany. But solar has a chance.

It's more predictable. For sure it's not gonna work at night, et cetera, et cetera, et cetera. Batteries for grid storage is above the dumbest idea that exists, especially lithium ion batteries. We're a firm believer that we are constrained for the metals that we need for batteries.

And so if we are constrained by battery metals, then we should take a step back and say, what is the most carbon impact we can have? And then let's execute. Let's manage to that constraint. So let's take a hundred kilowatt, or let's say an 80 kilowatt hour battery in a Tesla Model 3. If you create 180 kilowatt hour battery, you're going to abate the fossil fuel consumption, the gasoline consumption, because depending on how they recharge that battery, you're not really abating the fossil fuel consumption. But the gasoline consumption of one driver, 100%. If you split that battery into four and you make four plug-in hybrids and you abate 80% of the gasoline consumption of four drivers, it doesn't take too much math to know that 320 is greater than a hundred and that for that same 80 kilowatt battery pack, I'm abrogating far more gasoline.

And yet environmentalists and governments around the world are strongly favoring B EVs over plug-in hybrids. Even though for the same amount of battery we could abrogate so much more carbon emissions. So now let's take that story and apply it to battery storage. If you take all of the storage that's ever been implemented, battery storage, not hydro storage, this is a whole different thing.

And you calculate how much of the US energy grid have we backed up with all of this billions of dollars we've spent. It's seven minutes, so it just doesn't work. And by the way, has backup power for the grid to make room for intermittency when we have nuclear power as an option. And we could be using those batteries to make plug-in hybrids so that we can abrogate. Like no decision is in a vacuum. Like you, you have a constraint, which is battery materials.

Given that constraint. What is the most impactful thing we can do for the thing you claim to care about the most, which is our carbon emissions. Back to our equation. Standard of living divided by carbon emissions. We would take...

[00:51:50] Rodrigo Gordillo: That exists today versus the hope of a better battery technology in the future.

[00:51:55] Doomberg: Let's take hydrogen. If we had a fleet of nuclear reactors, spinning electrolyzers, making hydrogen, we could burn 'em in cars.

The hydrogen combustion engine is a fine technology. It's mastered. It looks very similar to an internal combustion engine. I suspect you could probably retrofit a lot of cars to make that work. So there's a carbon free world that doesn't involve batteries, and it does involve solar and wind. It involves nuclear making hydrogen and combusting it.

[00:52:21] Rodrigo Gordillo: Yeah.

Supply Side Issues

[00:52:22] Richard Laterman: The availability of materials or the lack thereof that you're referring to for battery technology, is this largely a function of the war in the Ukraine now and the isolation of Russia? And to some degree, China controlling a lot of the rare earth minerals in Africa and in Central Asia, or is that above and beyond all that?

[00:52:44] Doomberg: So the war in Russia doesn't help anything, but as it pertains to battery materials and rare earths that you talk about, not really. Most of the cobalt we get for batteries comes from the Congo, and we all know that there's a lot of issues in the Congo, child labor and so on, and something like 80% of the economic deposits of cobalt in the world are in the Congo.

And so we're stuck there. There's nickel, there's lithium, but the rare earths that you mentioned are actually for the electric motors. And here again, where China acts at a sort of a national level, with some strategic thinking. They own 100% of the rare earth metal processing.

So even if we mine concentrates in the US and we're starting to, we're starting to get our head around the fact that maybe we should have some domestic supply chain, especially given the criticality of these materials to our military. All of the things we mine in the US ultimately get shipped as concentrate to China, so they can purify.

Same thing with solar. So we still have three polysilicon manufacturers in the US but the value, supply chain of solar is you take sand, you pump in an enormous amount of energy, which nobody wants to talk about, to make metal- grade polysilicon, 98.8, and then you pump in even more energy, vastly more energy to make it 99.99999, and then an extra nine for semiconductors.

Then you slice that into wafers. So you form that into *ignis* and then you slice it into wafers, and then you mount it as cells and then you make your modules. It doesn't help us to back-integrate the polysi really, because 98% of the igni manufacturing and 99% of the wafer gets done in China.

So Hemlock semiconductor, and pick your favorite US-based polysilicon manufacturer is still sending that polysilicon, which they put an enormous amount of energy into, to convert it from sand. It gets commingled with slave labor, Polysilicon is formed into ingots and sliced into wafers, which are then mounted on cells and, turned into modules that get sent back here, which are now stuck at the border because we have this *slave labor act* that Congress passed that Biden couldn't veto.

And so if you buy a solar panel today, it is almost impossible that at least some of it wasn't made from slave labor. Because it's all commingled at that one step. So it's the same thing with rare earths that are needed for the rare earth magnets that power motors and so on. And these are the types of complexities that people who just say we should do wind and solar and batteries and wave their hands and have no idea what they're talking about, but yet still actually impact the levels of political power. That's very dangerous.

The Chinese Advantage

[00:55:13] Richard Laterman: So, do you think China is at something of an advantage given their autocratic system to the west when it comes to deploying capital towards technological breakthroughs? Do we need something like what preceded DARPA with VE Bush in the 1930s that kind of brought about a lot of the technologies, radar and so on, and code breaking in World War II?

Do we need something like that in the west, particularly in the US in order to bring about, whether it's battery technology revolution, whether it's the possibility of cold fusion, and you can tell us whether that's a pipe dream or, anywhere in the realm of possibility for our lifetimes.

Do we need something more government crowding in private investments, something along those lines that allow us to plan for decades, as opposed to every two years with the electoral cycle.

[00:55:59] Doomberg: So two points, first of all is trying to add an advantage because of its autocratic system as measured by their ability to dominate us economically. Yes, as measured by how they treat their people and how they treat their environment. Nobody here would accept that. And so let's be more like China is not an option on the table, right?

They abuse their people. The rare earth metal processing. The reason why we don't do it here is because it's really an environmental challenge. Creates an enormous amount of toxic waste. And China basically does a poorer job of dealing with it than we do. And so while the people over on this

side were trying to do it, they were competing in the market with the Chinese who weren't, and they were being under-cut on price and they went out of business.

Just that simple. That's what happened to US in solar. That's what happened to magnesium in the US. It's hard to compete against a competitor when your competitor's water treatment plant is a pipe to the river. And I competed against people whose water treatment plant was a pipe to the river.

And I, I remember talking to the procurement teams of very well known US brands, which I won't name, who are very high profile at COP 27. And they have their pretty boots and they have their glossy pamphlets about how they care about the planet and they're all sustainability. And I remember pitching to them why they should procure our more expensive solar products than our Chinese competitors, because our Chinese competitors were polluting their environment, and you could take a stand.

And they looked at me and said, that's for the courts to decide. You could either meet this request for proposal or not. And we were out of business. So I'm a little jaded on the question because I've lived it, when your competitor is willing to pollute their local environment to undercut you on price, to gain market share as a national strategic objective.

Of course, China *benefits* from being an autocratic system because nobody is holding the polluters accountable. And they as a country have decided for their own nationalistic objectives that they want to own solar and they want to own batteries and they want to own rare earth metals and they want to own electric vehicles and they want to turn around and fill our country with propaganda, to make us all believe that this is where we should go.

Otherwise we hate the planet. And who is the, who's the seller? They're the drug dealers and they got us all hooked. That's my answer to that question now. I forget what the second part was because I went off a bit of a ...

Moon Shots, Fusion and Fission

[00:58:15] Richard Laterman: The idea of creating some new forms a darker kind, like financing moon shots and allowing them to fail.

[00:58:23] Doomberg: We don't need a moon shot. We have it. The solution exists. It's fission. Let's cut the red tape. Let's fire everybody at the NRC and start over. Let's decide on a fundamental technology like they did in Canada with a Candu reactor system. Let's make it modular, let's make it super safe. Let's make the permitting easy.

Let's make the return on investment viable so that we can finance it. That's the kind of moon shot we need. It's not a moon shot of technology, it's a moon shot of politics. That's my main point. We, there is no technology needed to be invented. So let's talk about fusion. You incorrectly called it cold fusion.

Just for everybody listening, cold fusion was a fraud and a scam. Fusion, hot fusion is legitimate scientific endeavor, but hot fusion is used by the opponents of existing nuclear technology as a stall tactic to never do fission. And then when fusion comes around, which is decades away, they'll say, oh, they'll find lots of reasons not to do fusion.

So we, when we wrote about fusion, we had a picture of Charlie Brown with the football. Because this is what this is. So fusion is great scientifically, and we're interested in it. It's a giant distraction. There is no technological advance needed to adequately provide a reasonable standard of living to all the humans we have in the United States while minimizing our carbon emissions.

All of the constraints are political. The financial constraints that exist today are second order effects of the political constraints. There are no technical constraints. Fourth generation reactive designs have been around forever. They're walkaway safe, basically impossible to melt down. We know how to create the fuel.

This is literally the Manhattan Project. What we need is a political one, not a technical one. And anything that we do that says otherwise is a proactive distraction away from the solution that exists, and serves China.

[01:00:11] Rodrigo Gordillo: Can we just dissect that a little bit? What is the ramp up time for a viable nuclear plant to replace coal or otherwise?

[01:00:20] Doomberg: It depends on the permitting. So today in the permitting structure, it's five to 10 years.

[01:00:27] Rodrigo Gordillo: To begin to build or to finalize the project?

[01:00:30] Doomberg: Oh, I think you could probably, if you, let's take the Dow X-energy example. They plan to go live in 2030. That's seven years from today, with the existing impossible permitting structure.

Let's take Candu in Canada in the seventies. And Chris Keefer has a great chart on this and if I can find it, I'll share it while we're talking, because we'll go ahead and stress that technology. But every year for 20 years, Canada brought on a new Candu reactor in the seventies. That was 50 years ago.

Tell me there's a technological chance those reactors were still running. What's the technology? What are we talking about? Technology. This is not a technology problem. This is a pure political problem. So once you get going, you can do one every year. They literally have, and I'm gonna find this chart.

I'm gonna pull it up. I'm just here. It's okay. Good. I found it. So let's go ahead and close all my other windows so you don't see anything that I don't intend for the whole world to see. I am...

[01:01:26] Rodrigo Gordillo: He is just a ChatGPT bot guys. That's what's in the...

[01:01:29] Doomberg: I am in pants. Okay, so let me know when you could see this. All right. So this is a chart of all the nuclear reactors added in Canada from like 1971 to 1992. 1971 was 52 years ago, okay? And he's overlaid on this 18 megawatts of what we would need to do from 2025 to 2050. Okay? Pathway to decarbonization. There is not a technical challenge. Candu technology's 50 years old. They invented this technology before they had calculators.

Nuclear Substrate Sourcing and Politics

[01:02:07] Rodrigo Gordillo: So let's talk about the substrate sourcing, then. We just talked about the issue of China manufacturing, the wave, waffles or whatever it's called for solar panels. What, where do we get our substrate for nuclear? Who's processing, what are the issues with that?

[01:02:24] Doomberg: With a dedicated effort, there are no issues. We have tons of uranium in Australian, Canada right now. There's a lot of it in Kazakhstan. And Russia has a commercial monopoly around the enrichment needed to make SMRs work. That's a solved problem measured in the single digit billions. And probably the military could solve that problem for us, but they're hoarding their enriched uranium for their own military purposes.

This is not a constraint of consequence if we were truly in a World War II Manhattan style project, a political project. Getting enough enriched uranium to run the fourth generation type reactors is within the technical capabilities of the United States. Period. So again, these are they're canards.

There's no other way to say it. Like, it's a, it all traces back to politics. If Canada could do it 50 years ago, you trying to tell me that the US can't do it today?

[01:03:12] Rodrigo Gordillo: How did it go so wrong, Doomberg? How did it

go so...

[01:03:15] Doomberg: ... of the politics?

[01:03:16] Rodrigo Gordillo: ...understand. It's just the politics and the narrative and I get it. You go back in time, you see the Hiro, you hear about the Hiroshima, the bomb. It's all tainted, right? And no politician wants to touch that with a 10 foot pole, because it's hard. And they need...

[01:03:30] Doomberg: No, because the environmentalists have been extraordinarily successful in winning the propaganda war. God, hat off, hat tip to him. We're the first to admit it, and the industry fell for the trap. If only we give them four more nines, they'll leave us alone and let us build these plants. No, they're gonna ask for another nine and another nine.

The poster child for this nonsense is Yucca Mountain. Like how far below in, how stable a, and yet Harry Reid killed it for political purposes because he was placating to the environmentalist. So by engaging in the debate, which we refused to do, they lost, because it's literally Lucy with the football.

Ah, you thought you were gonna kick it. Now after 19 nines of safety, ha, I take the football away again. Come back. When you get to 22 it never ends. *Angels on a Pin*, find me a human being who has been injured by nuclear waste. You can't find one.

Ways Forward in Divided Times

[01:04:30] Richard Laterman: Are the solutions for a policy improvement in the US? Obviously, one way to carry out this thought experiment is to say you wave a magic wand, you're emperor, you would be able to implement some of the things that you're talking about now, within the system. When the current existing system, obviously there's a lot of polarization. It's a very dysfunctional,

probably as dysfunctional as it's been in all of our lifetimes. What solution, what path forward do you see for a little bit more coherence and logic in energy policy in the US?

[01:04:59] Doomberg: So it, it starts with engaging in authentic science-based debate, which we will do. We debate anybody on the, any side of the aisle. And being willing to stand up for your scientific beliefs and participating in the existing political framework. And Doomberg, in our own small way is having some influence.

We have a good readership on Wall Street and many people in government read us and they reach out to us and we try to do our best. Chris Keefer's an example of somebody who, as a medical doctor, has created an amazing movement and has had an impact. He got a one-on-one meeting with Justin Trudeau and he got, a petition read into Parliament.

And nuclear is now redefined as green and available for some of the funding that they put towards decarbonizing in Canada. And this is one person and a small team, and they had a real impact. And so, one person can have a small impact now to give you a Friday afternoon before Memorial Day, somewhat humorous idea of what we should do.

I'm gonna share my screen again, and I'm gonna do my best. Elon Musk and I would walk into the Nuclear Regulatory Commission just like this.

[01:05:58] Richard Laterman: Drop a sink.

[01:06:00] Doomberg: I would do to the NRC what Elon did to the employees of Twitter. And that's not to endorse what Elon did to the employees of Twitter. But if Doomberg were to run the NRC, there'd be an awful lot of upset government employees.

[01:06:11] Rodrigo Gordillo: So have you guys seen Mike, speaking of Mike Meyers as the Punta on Netflix by Mike Meyers. Masterminds, five masterminds that control the world, but are actually good. So I actually envisioned Berg, I don't know, Satoshi, Jesse Livermore, economic, all the anonymous people in the background, working to fix this world. I'm pretty sure now after an hour and a bit that this is what's happening. I ...

[01:06:35] Doomberg: We're doing what we were meant to do in life, and so we intend to keep doing it.

[01:06:38] Rodrigo Gordillo: Yeah, a bunch of pseudonym emojis will be running the world. I love it. I...

[01:06:44] Doomberg: We're going online anyway, right? My kids are online all the time and my daughter is apparently doing creative work online in exchange for digital money. And I'm like, do we need to file a 1099? Or what are we doing here? And I'm assured that we're okay because she's not allowed to spend them, because she's not 18. But this is the way the world is going. And we just put our sail up, and our, we're floating with the trade winds.

Optimism

[01:07:08] Richard Laterman: So what gives you optimism? What are you, Berg is obviously a name with at least a bit of a negative connotation. But you're not all doom. When we hear you talk about policy, energy policy, it does have quite a number of problems that you're laying out. But what are some of the reasons that are giving you hope and cause for optimism?

[01:07:28] Doomberg: Berg is mostly a wink and a smile inside joke. We're not really pessimistic and in fact I personally am a very optimistic person and we as a team are, would be long human ingenuity. We have a very amazing ability, especially in the US to try all the dumb stuff before we settle on the right answer.

And we're running out of dumb stuff to try. So that gives us some hope. We do think that ultimately, when enough pain is inflicted, that our society and western society tends to regress back to the mean, and we're getting close to what we think must be the apex of pain, before sanity reasserts itself.

And we do regress to the mean. The success of Doomberg gives us hope because this was just, us with a keyboard and a Bloomberg terminal and sweat equity. I we've said this on other podcasts, but we've invested less than \$10,000 creating the Doomberg brand.

Most of it is in the development of the animation you're looking at. And some of it is sponsoring a podcast of a good friend of ours in the early days. But other than that, it's all been sweat equity. There is a hunger for science-based analysis. There's a hunger for authentically laying out what we believe to be right for humanity.

And we've carved out an amazing set of subscribers both free and paid and we're, every subscriber's precious and so yeah, there is a hunger for it. And I do believe that we're seeing, for example, nuclear renaissance, Japan even in the US, Canada, with Trudeau's about-face, a total about-face by Trudeau.

Really, the only country still opposing nuclear power as a national policy is Germany. And even within the EU, even in within the EU, they're becoming ever more isolated in that regard. And France, leading a counterpunch into Macron's credit, India, China, the United Arab Emirates, like, we talked about, Korea. Everybody knows that if you truly want a carbon-free future, you, it's easy to decarbonize the grid and now plausible to decarbonize much of industry if this Dow X-energy project proves out, at least in the next 15 to 20 years.

Energy Costs, Productivity and Hope

[01:09:31] Rodrigo Gordillo: So I'm curious, Steven Keene, I think it's Steven Keene that has this kind of view...

[01:09:36] Doomberg: Yeah. I debated him. Yeah.

[01:09:38] Rodrigo Gordillo: The inputs to, we talk about the traditional inputs to productivity, which is labor and capital, and he argues that it's actually energy costs. And so if that's true, and we, let's say we get into a world where we can have energy plants by nuclear power, are we looking at a significant reduction in energy costs and therefore increase in productivity?

[01:10:03] Doomberg: So Steven Keen is a fascinating guy and actually debated him on a podcast called *Forward Guidance*. Let me share my screen. And I quite enjoy his analysis of the economy on energy. But his proposed solutions were, I don't know if you have a chance to listen to this ... rather extreme...

[01:10:20] Rodrigo Gordillo: Oh yeah.

[01:10:21] Doomberg: And so we had ...

[01:10:22] Richard Laterman: Had him on. Full disclosure.

[01:10:25] Doomberg: And we had, let me stop screen. We had him, we debated with him. And it was a fun debate actually, to his credit. He is at least totally honest and transparent about what he proposes to do, Right?

[01:10:34] Rodrigo Gordillo: Yeah. He's not doing it behind the scenes and...

[01:10:37] Doomberg: Not, right. He's not doing a bait and switch, right? And yeah so he was fun to debate.

He was authentic. We agreed on a lot. We agreed on the critical role of energy in the economy, and we agreed on the need for, I actually, I think he actually agrees on the need for nuclear power but ultimately, his sort of solutions about nationalizing oil and gas and some of the more extreme stuff...

But again, that was a great example of where we were willing to debate politely and we exchanged authentically held views in a polite way, and the audience was left to decide which side came out ahead, and we need more of that in society. So when you, we talk about what are the subset of things that give me hope that's one of them, that we should begin to have these types of discussions.

So debate authentically and openly what it is that we should be doing. And to his credit he laid bare what he thinks should happen, which is we should all have a nationalization of fossil fuels and extreme rationing, of rationing of energy, and a massive reduction in people's standard of living, because the consequence of not doing so is, we're gonna have a catastrophe on the planet.

And what I said on that podcast was, *brace for impact* and if you're saving that great bottle of wine, you better open it because we're gonna run that experiment. Like the world's not gonna do that, Professor Keen. And he agreed with me on that. And so it was actually a very pleasant debate.

[01:11:51] Rodrigo Gordillo: No, I gotta watch it for sure. But again, I just want to zero in on, is nuclear power generated electricity cheaper than the current alternatives or...

[01:12:01] Doomberg: It depends.

[01:12:02] Rodrigo Gordillo: With?

[01:12:02] Doomberg: It depends on, you could do it with the old generation power plants if we had far less regulatory interference, is my point. What do you mean by cheap?

[01:12:11] Rodrigo Gordillo: Just...

[01:12:11] Doomberg: Why is something expensive?

[01:12:13] Rodrigo Gordillo: Yeah.

[01:12:14] Doomberg: So uranium is 50 bucks a pound. That's, and when you measure how much electricity you can produce from a pound uranium, that's effectively free.

[01:12:23] Rodrigo Gordillo: That's my point.

[01:12:25] Doomberg: And so why is nuclear expensive? It's expensive because the industry has allowed itself to be tricked into imagining that they need 19 nines of safety and 15 various forms of redundancy in order to operate a nuclear power plant. We dropped nuclear bombs on Japan. And Japan is a fine place to visit today.

Like we can, we could put bookends on the risks that we're taking, the trade offs that we're taking. But we don't. And so, measured if we ran an autocratic society, nuclear power would be the cheapest. Yeah.

[01:12:55] Rodrigo Gordillo: It's just it's so crazy because it is. We're, we are suffering from lack of productivity, energy, cost being the major one. And we are not waiting for a solution. We have a solution and we're being held hostage by ideology and politics. It's in, in a real way.

[01:13:13] Doomberg: One reason why I'm optimistic is because when we do regress to the mean, there is no invention needed.

[01:13:20] Rodrigo Gordillo: Yeah.

[01:13:21] Doomberg: So I'm actually quite hopeful. There's only so much pain people will accept before they find a Berg who's willing to run for office and they fix stuff.

Presidential Races and Pain

[01:13:32] Rodrigo Gordillo: So we're coming, and we got 10 more minutes left, and I'm curious to hear, we've got a presidential cycle coming in. DeSantis just launched his bid on glitchy Twitter and

so, what do you think about the candidates there? Has anything changed? Do we have to wait? Are we still waiting for the maximum point of pain here from political perspective, or is there some hope there?

[01:13:54] Doomberg: I would say we're still waiting for the maximum point of political pain. I don't think that any of the candidates for high office are... Let's take Joe Biden. What did he do when the energy crisis hit? He panicked, emptied the strategic petroleum reserve, browbeat the oil companies to produce more.

This runs 100% counter to everything that his environmental base thinks is the right way to go, because he's an old school politician. We used to jokingly call him, Joe Biden, Senator DuPont, because he was from Delaware and he would always represent DuPont's interest in the Senate. He knows that his political future is tied to the price of gasoline.

So I wouldn't say that there are a few thoughtful people on nuclear power. None of them are probably gonna run for president, but ultimately the individuals in the seat don't matter as much as the pain the public has felt. And when the individual in the seat sees the pain, the public has felt and goes looking for answers, hopefully there's people around them that can teach 'em about nuclear power. We're seeing a...

[01:14:55] Richard Laterman: About pain, you cut you off there, but you're talking about pain. I would imagine a lack of energy, like unavailability of energy broadly in the US to some degree, that would precipitate a crisis. That would force the need for change. It doesn't seem like the US is anywhere near lacking of energy in any way.

[01:15:13] Doomberg: We have an abundance of energy, but let's watch Germany. So the de-industrialization of Germany, the outflow of jobs, the rolling blackouts, the increased cost of power and electricity, and the inability to heat your home in the winter when you are relying on a heat pump because the grid is collapsed because there's too much demand.

That's the type of pain that we don't want to see happen, but would be necessary to occur before serious political upheaval happens. Now that's a risk, right? The risk is you have far right wing extremism and populism take over, and this is how strongmen come to office and so on.

So we're not, we don't want that to happen. We would rather have rational, polite debate. Where people get to the correct answer in our view. And look, it's just our view, like maybe we're wrong,

maybe some technology will be invented that magically allows wind and solar to no longer be intermittent, which magically allows it to be introduced to a grid in a way that doesn't destabilize it, which magically allows electricity to be distributed to the masses far cheaply, than we do today.

If that technology existed, we'd be the first to write about it and to be proponents of it. It does exist today. It's called nuclear power. But if some new manifestation of wind and solar were to be invented that allowed that to happen, we'd be all for it because at least it's politically acceptable.

And we would rather not go through the path function of pain, in order to risk society dissolving into a far uglier place than it is already today. And what's the, any answer that is plausible and politically expedient we would be all for. Intermittent wind and solar as it exists today is not plausible. Nuclear is just not politically expedient. Solving political expediency seems to us to be far easier than solving technical and plausibility.

[01:16:49] Rodrigo Gordillo: I like that. I like that. It's a great way to end, I think. Unless Richard, Mike, do you have any other questions?

[01:16:57] Richard Laterman: No, I think it's a good place to put a pin and great reason to have Doomberg back on. There are so many questions. There are so many threads that I wanted to lay on the importance of energy and on the geopolitical stage, but we'll have to leave that for the next episode. Berg, where can people find you?

Obviously you have your Sub written underneath your avatar there. But for everyone that's listening,

[01:17:18] Doomberg: Yeah, that's the primary place to find us. Berg.subs.com. We are on Twitter. @Berg.T is for Twitter. But we produce six to eight pieces a week. We are 100% subscriber supported. We do not accept ads or sponsorships and as we often say, there's nothing wrong with those business models, but given how provocative we intend to be we felt having complete editorial freedom was of paramount importance.

And so while every subscriber is precious to us, no subscriber is determinative. And so if somebody gets upset about something we write, we will persist and we will live to publish another piece. And so Doomberg.subs.com come join the 160,000 plus email subscribers that we have on a product that I couldn't be more proud to produce.

And I really appreciate the opportunity today. I had a blast. Time flew by. Just looked down and saw that we're 90 minutes into it and it feels like 15. Looking forward to coming back anytime, guys, it's been great.

[01:18:11] Richard Laterman: Thank you for coming.

[01:18:12] Mike Philbrick: Love it. Thanks to all the Doomberg Nation folks out there. They're tuning in.

[01:18:18] Rodrigo Gordillo: Yeah.

[01:18:19] Richard Laterman: Have a great long weekend everyone. Thanks.