

## Episode 8 – “My 6-Point Plan for Energy Transition”

Previously, on Energy Transition Crisis: Prior episodes explained the importance of energy transition, laid out a plan to replace fossil fuels with clean energy, explained why a global energy crisis is unavoidable in the mid-2020s, explained geothermal renewable energy, and considered the pros and cons of conventional and advanced nuclear technologies. Now, in the final episode, Erik Townsend lays out his 6-point plan for solving the crisis and eliminating fossil fuel dependence by 2050.

In this final episode of Energy Transition Crisis, I'll lay out my 6-point action plan to accomplish energy transition and achieve net-zero climate goals by 2050. What follows are my personal opinions about what we as a society should do to fully replace fossil fuels by 2050. Please engage with us in the comments below this video and the earlier episodes in the series to express your own ideas on this most important subject of the 21st century.

First and foremost we the people need to work together to navigate the coming crisis. We must resist our politicians' attempts to divide us by making energy transition a partisan political issue. We should all take an interest in what's at stake, and we should all strive to personally understand the most important issues rather than just trusting our politicians to make the right decisions for us.

Specifically, we need to promote better public awareness of energy's importance to our standard of living, and why our standard of living is now in decline as a direct result of increasing energy costs due to peak cheap oil.

The Energy we get from fossil fuels literally ended human slavery and makes it possible for most of us not to have to work on farms just to survive. So abundant energy is a very, very good thing for humanity, and we should want more of it, not less.

The problem is just that we're getting our energy from the wrong sources.

Energy transition away from fossil fuels in favor of clean energy is the single most important challenge humanity faces in the 21st century.

But we're becoming divided by politics—let's not allow that to happen!

What Americans perceive science to say about Climate Change literally depends on what political party they're a member of, because both parties have aggressively subjected their constituents to messaging designed to persuade them the other party has the science wrong.

Everyone has the right to make up their own mind, but no one has the right to make up their own facts!

We the people need to get in touch with just how badly governments are screwing up this energy transition, and we need to find a path forward that unites us around a common goal we can all believe in rather than trying to divide us into factions who see one another as enemies.

I propose that Energy transition (rather than Climate Change) could be the uniting strategy that can bring us all together as a unified movement.

For those who believe climate change poses an existential threat to humanity, nothing could possibly be more important than building the green energy supply we need to end our addiction to fossil fuels. So it should be a no-brainer for those concerned about climate change that Energy Transition away from fossil fuels is the single most important challenge we face in the 21st century.

For climate skeptics who are sick of climate hysteria and are more concerned about what climate policy is doing to gasoline prices, the logic is completely different, but the conclusion is ironically the same. While climate policy might be aggravating gasoline prices short-term, the true underlying cause of long-term high energy prices is peak cheap oil.

As I explained in Episode #3, ESG-driven lack of investment in oil & gas exploration and production virtually guarantees that gasoline and diesel prices are headed much higher from here in coming years, and nothing can be done to change that. So regardless of whether you're a climate change crusader or a climate change skeptic, we need to replace Fossil Fuels with a cleaner and cheaper alternative!

So the one thing we should all be able to agree on is the urgent need to find cheaper, more abundant clean energy sources to replace fossil fuels. Whether your rationale for energy transition is to combat climate change or if you're a climate skeptic who just doesn't like the idea of gasoline prices doubling every few years from here, the conclusion is the same: We urgently need to find cheaper, more abundant sources of clean energy to replace fossil fuels, and we need to upgrade all the world's systems and infrastructure to embrace those new clean energy sources. The only difference of opinion on this point between the climate activists and the climate skeptics should be why energy transition is so important. But both groups should recognize that despite opposite rationale, they have the same goal and can and should work together to achieve that goal.

Building a global grassroots community of citizens knowledgeable about the challenges of energy transition is critically important. I've tried to do my part by self-producing this documentary series at my own expense and giving it away for free. You can do your part by sharing what you've learned from this series with your family, friends and neighbors. Next, you can encourage everyone you know to watch this free docuseries, both in real life, and on social media.

If we can make this free docuseries go viral on youtube, we have the opportunity to form a global grassroots community of energy-aware citizens who all work together to lobby our respective national governments around the world to adopt more prudent and effective energy transition policies.

So please Engage with us in the comments under every episode in the series, and let us know your ideas. Let's come together and form a grassroots online community to solve this crisis for once and for all.

Second, We need to grow and mature our energy transition activism community to recognize that "just stopping oil" has always been a counter-productive goal.

Millions of people around the world have become passionate about climate activism and their hearts are in exactly the right place.

But we're allowing ourselves to be divided by politicians who seek to make climate policy a partisan political issue. They encourage us to identify someone to blame and then treat them like a mortal enemy! That won't solve anything. We need to work together.

The point we most urgently need to promote understanding of is that stopping investment oil & gas exploration and production ironically and counter-intuitively hinders rather than advances the energy transition agenda as explained in Episode #3.

Trying to phase-out fossil fuels before phasing-in viable replacements just plain doesn't make sense, and is only making the situation worse, by annihilating spare production capacity thus paving the way for skyrocketing energy prices in coming years that could threaten the entire global economy or even lead to global resource wars.

Our goal should be to work together to aggressively build the 80k TWH of clean electricity we need to completely phase-out fossil fuels as soon as humanly possible. Fossil fuels will go away all by themselves just as soon as viable alternatives are introduced in sufficient scale of supply, so bringing that new clean energy baseload supply online is where we should focus our attention.

Getting rid of fossil fuels before finding viable replacements should never have been our goal. Our goal should be to quickly build enough green energy supply that we no longer need fossil fuels. And that's a lot of green energy supply!

Groups like ShareAction undoubtedly have their hearts in the right places, but the sanctions they're imposing on the oil & gas industry are backfiring. The sanctions are working very effectively, but they're working to make the situation dramatically worse, not better. The global energy crisis that will begin in the mid-2020s will have been directly caused by groups like ShareAction and their well-meaning but badly ill-conceived tactics of activism.

Third, we need to reverse the misguided aspects of ESG and invest aggressively in Oil & Gas E&P to start a years-long process that will eventually reign in prices that are sure to run away before new producing resources can be brought online from the investments I'm describing. A 5-year lag time from capital investment to price relief is typical, so we're doomed to suffer several years of skyrocketing energy prices no matter what. The sooner we recommit to investing in oil & gas exploration & production, the fewer the number of years the global economy will remain in the grip of a global energy crisis.

Fourth, we need to promote much higher public awareness of Deep Geothermal Renewable energy. This is a classic chicken-and-egg problem: Deep Geothermal just plain isn't economic yet, and private investors aren't going to touch it until it is. But the whole reason Deep Geothermal isn't economic yet is that it's a niche industry nobody knows about that doesn't get enough capital investment. We need a deep geothermal revolution on par with the shale oil and gas revolution. I nominate the same team that took the trophy for shale oil & gas to do it again for deep geothermal. But it will never happen when less than 1/10th of 1% of the general population has even heard of geothermal or knows what it is.

Fifth, we need to promote much higher public awareness of the real challenges of nuclear vs. the perceived risks which were all solved decades ago, except that the solutions to those problems our parents' tax dollars paid for were never adopted and commercialized to make nuclear power as safe as it could and should be. The public needs to be involved in any decision to adopt nuclear power as the mainstay of our baseload energy strategy, and that means the general public needs to be made aware of the information about nuclear energy presented in this docuseries. Please do your part to help by sharing what surprised you most in Nuclear episodes 5, 6, and 7 with your friends and family. The public deserves to know the implications of energy policy, and since nuclear is absolutely essential to achieving energy transition, this docuseries was designed to empower you with the information you need to enlighten people in your community about the true vs. perceived challenges of nuclear energy.

Sixth, and by far most importantly, we need to end the blame game of partisan politics and come together as a society, across political party boundaries, and get everyone on the same page about why energy transition is so important. Then we need to stop believing the propaganda that meaningful progress is already being made when it really isn't, and come together to agree on a realistic plan to build out the 80,000TWh of clean electric generation capacity by 2050 that's needed to fully cure our addiction to fossil fuels. This must include a credible plan to upgrade electric grids and build the infrastructure needed for energy transition.

We need to have a public debate about energy transition policy, and that can't happen until the general public understands basic energy transition concepts. This docuseries was designed to give viewers a basic understanding of those concepts.

From here it's still your job to learn about competing points of view from groups like ShareAction, which uses shareholder activism for the express goal of trying to force the phase-out fossil fuels before viable replacements have been phased in. They clearly have their hearts in the right place, but they've chosen a path of activism which I believe directly undermines rather than advances their own goals. It's your job to hear from a variety of different sources and make up your own mind. Just don't let anyone who makes up their own facts influence you too much!

The most important part of point six is that we the people need to come together, look past politicians' partisan propaganda, and come to agreement on a real plan for energy transition. The details of that plan must be decided through a process in which everyone has a say, so my own thoughts on such a plan are offered only as a starting point for discussion. I encourage everyone watching to engage in the comments below this video. I'm sure some of you will disagree with me and express your own contrasting opinions, which is both welcome and encouraged, as long as it's done politely.

Here are my own prescriptions for a plan to solve the coming crisis, just to kick off the debate on how to best accomplish energy transition by 2050.

The first and most important point is that we need all the clean energy we can get, so the only sane approach is to encourage aggressive development of all the clean energy sources discussed in this docuseries, and allow competition to determine which gets the most market share as we all work together to build 80k TWH of new clean electricity by 2050.

For Wind & Solar, my feeling is the more the better. This part of the green energy revolution is already well organized and making great progress. So my position is keep the wind and solar coming. Society will take all you can give us and use it primarily for intermittent supply. Since this industry is already well developed, no further discussion of where the wind and solar capacity will come from is needed.

I impose just one big caveat on my endorsement of Wind and Solar: If you're tempted to use batteries to make wind and/or solar suitable for baseload power generation, then please limit yourself to only using battery chemistries that don't compete with vehicle batteries for natural resources. We need to save all the battery metals we can possibly mine in the next 25 years for vehicle batteries. So if we're going to experiment with energy storage for wind and solar, we should do that only with batteries that don't rely on the same metals vehicle batteries rely on.

For Deep Geothermal, my opinion is that with a few exceptions in volcano country, the present state of the geothermal industry isn't ready for prime time and unfortunately can't be relied upon to provide a meaningful part of the electric generation capacity we need in the timeframe we need it to solve the coming crisis. So unfortunately, my assessment is that geothermal won't help unless and until some sort of breakthrough occurs.

We should do everything possible to bring about such a breakthrough, starting with funding geothermal R&D. We've given plenty of government subsidies to the wind & solar industries, and Geothermal is no less deserving of government research money.

From there we need Government LEADERSHIP to call upon the oil & gas industry to do what it did for shale oil and gas all over again for deep geothermal wells.

I strongly advocate more investment in this important field, and I really hope we achieve a breakthrough that changes everything and makes geothermal our best baseload power option.

But unfortunately, based on the facts in evidence at the time of this recording in July of 2023, it would be foolish to count on geothermal to contribute to the solution at all. We need a breakthrough before geothermal can play a meaningful role in energy transition, and unless and until we get one, we should look to other sources for the clean energy we critically need by 2050.

Barring breakthroughs on other energy sources which haven't happened yet, Nuclear is the only rational choice to serve as the cornerstone of our baseload electricity generation strategy.

But public perception is so badly disconnected from reality with regard to nuclear that we can't possibly expect any real progress until more people develop awareness of advanced nuclear energy concepts, just as they've already developed awareness of basic climate science concepts.

Ep. 5/6/7 of this docuseries were designed to start a public town hall conversation about these subjects.

So if you agree, please do your part by promoting those three episodes both in your real-life professional and social networks and on social media.

And if you disagree, please engage with us in the comments below each of those videos to share your contrasting viewpoints, or better yet, produce your own videos arguing a different point of view and post a link to your opposing viewpoint video in the comments. We need to get public discourse going on energy policy if we want to save the world from the coming energy crisis, and that can start right here in the comments under this video.

The staggering question is how to best embrace nuclear, when the one very real problem with nuclear power has not been meltdowns but cost overruns on large bespoke nuclear plant construction projects. Cost overruns at the Vogtle project in Georgia literally bankrupt Westinghouse in 2018. So we clearly haven't cured our afflictions that prevent us from getting large bespoke public works projects done on time and on budget.

My attitude is the more the better, provided it's safe. So far as I'm concerned, the more AP1000-based monster sized conventional nuclear plants we can build around the world, the better. Of course I'd rather see molten salt than pressurized water coolants, but Generation III+ pressurized water reactors are safe enough that we should encourage construction of as many of these plants as the industry is willing to build.

The big caveat is that I personally don't think large bespoke public works projects are the best way to really solve this problem. 80k TWH is a whole lot of electricity, so we have a whole lot of nuclear reactors we need to build. We need the economies of scale inherent to assembly line manufacturing. To my thinking, the inescapable conclusion is that the core of our baseload power strategy should be the formative small modular nuclear reactor industry. Wind and Solar are already on track to supply the intermittent electricity we'll need beyond the nuclear baseload.

We need to do everything we possibly can to encourage the growth and development of the SMR industry in the West before China beats us to market, which is now unfortunately the base case outcome, in my opinion.

But it would be crazy to suggest that SMRs alone should be the solution. Generation III+ large scale nuclear and deep geothermal should be encouraged to compete with SMRs for baseload energy market share. May the most economically viable baseload clean energy source win!

Overall, my personal favorite energy source for most economically delivering the 80k TWh of clean electricity we need by 2050 is SMRs, and specifically SMRs which can be ganged together in the method proposed by Copenhagen Atomics to form multi-gigawatt large powerplants. But only time will tell, so let's let others with capital to invest choose their own favorites and may the best energy source win!

Overall, what matters most is that society as a whole needs to come up to speed on energy transition concepts, including nuclear energy concepts, just as many people have already become familiar with basic climate science concepts. We can't have an intelligent public debate about nuclear until everyone knows what a molten salt reactor is. We need everyone to know just as much about advanced nuclear technology as they already know about climate change.

This documentary series was designed to get the conversation started. Please let us know what you think in the comments below this and all the prior episodes.

Now it's time to ask for your help. And Don't worry... I don't want your money.

The time and money I spent self-producing this docuseries was proudly donated because I want to spend my retirement doing my part to help the world achieve energy transition.

I'm not trying to make money from this project, but I desperately need your help getting the word out about this free docuseries.

The crux of the problem is that millions of people who are passionate about the environment and concerned about climate change have their hearts in exactly the right place. But they're being misled to believe that meaningful progress is already being made and that wind and solar alone are going to solve everything.

This docuseries was designed to give everyone enough background understanding to form their own opinions and begin an informed public debate about energy transition and energy policy generally.

I don't want or expect everyone to agree with me. I just want everyone to recognize the importance of energy to our standard of living, and to form their own opinions. Energy transition is the most important challenge we face in the 21st century, so we all need to put our heads together to get it right.

If we can form a grassroots community and make this YouTube Series go viral, view counts in the millions will be the calling card I'll use to march into the offices of Netflix and the other big streaming services, and tell them, "Look, this is important and millions of YouTube Views prove there's an audience for this message. So we need to ditch my low-budget self-produced docuseries and hire Werner Herzog or whoever the top documentary filmmaker is these days, and make the Hollywood version of Energy Transition Crisis, which takes an Oscar for best documentary and then changes the course of public debate the way Al Gore's film An Inconvenient Truth did back in 2006. That version might be narrated by Morgan Freeman and feature on camera interviews with thought leaders in advanced nuclear and deep geothermal energy. But we need to make this version go viral right here on youtube before any of that can happen.

This youtube channel is not monetized, and I'm not making a penny from this. We've set up a merch store at [energytransitioncrisis.org](http://energytransitioncrisis.org) where you can buy a T-Shirt or Polo shirt like the one I'm wearing now to help promote Energy Transition Crisis, but I don't make a penny from merch sales. It's a passtru to the print-on-demand vendor who actually makes and drop-ships the merch, which makes a great gift and can be shipped anywhere worldwide.



I had originally planned to proudly decree that I don't want to make money from this project so I'm not even accepting donations. But what I didn't know is that the most effective way to make something go viral on YouTube is to bribe Google with "advertising" payments. You see, in YouTube parlance, "advertising" means paying YouTube cash bribes to get them to tweak their algorithms to recommend Energy Transition Crisis episodes to more users.

So I need to be more precise: I'm not trying to make one penny of profit from this project for myself, and I'm actually reaching into my own pocket to spend several thousand dollars a month of my own money initially on YouTube advertising to launch these videos.

If you're willing and able to help, we've set up a donations page at [www.energytransitioncrisis.org/donate](http://www.energytransitioncrisis.org/donate) where you can contribute to the advertising fund. I pledge that I will not keep one penny the donations received for myself. All funds donated will be spent promoting this docuseries, either on YouTube or through other promotional channels, as explained on the Donate page. My webmaster will handle collecting the donations and spending them on advertising, so I personally never see a penny of the donations received.

Other things you can do to help the cause are to teach the information you learned from this docuseries to your family, friends, and colleagues, and to share links to all the various episodes on social media. Hit the like button on every single episode, subscribe to this channel, and most importantly, engage with us in the comments below each video. The YouTube algorithms put a lot of weight on how many comments a video gets when deciding which videos to suggest to other users, so every time you post a comment, you're helping that episode reach more people.

Finally, still another way to help the cause is to help promote Energy Transition Crisis to educators and the media. Is there a school teacher in your personal or professional network who might take an interest in showing this docuseries to their students? If so, please let them know about it. Are you affiliated with any environmental or climate related activism groups? If so, please pass the word about this docuseries. Are there any podcasts with more than 5,000 downloads per episode that you think I should be interviewed on to spread the word about this project? If so, please request me as a guest!

As a podcaster myself I can assure you that several requests from regular listeners always carry a whole LOT more weight than a guest pitch where the guest is pitching themselves. So you can get me onto Joe Rogan with this message about energy transition much more easily than I can get myself there. It's numerous separate, unrelated requests from listeners that will give me the opportunity to spread this message to a wider audience on the biggest podcasts, and Joe Rogan is a great place start sending those requests.

Thanks for watching, and I look forward to engaging with you in the comments under every episode of the series. For Energy Crisis, I'm Erik Townsend.