

The Great Simplification

Nate Hagens (00:00:00):

Today's guest is Kevin Anderson. Kevin is a professor of energy and climate change at the universities of Manchester, Uppsala and Bergen in Norway. He's also the co-founder of Climate Uncensored, which is an educational organization focused on unflinching commentary and assessment on climate, sounds like Kevin. He was also the formerly director of the Tyndall Centre for Climate Change and he continues to engage widely with governments and remains active, doing research in publications and climate policy in nature and science. Kevin and I talked about the emission, a difference between the Global North and the Global South, our carbon budget. And is there any way to remain under one and a half degrees Celsius or even two degrees Celsius? Please welcome Kevin Anderson. Kevin Anderson, welcome to the program.

Kevin Anderson (00:01:11):

It's nice to be with you.

Nate Hagens (00:01:15):

Among the other things we have in common, like caring about climate change and the future of the biosphere, we also are avid bicyclers. And I am exhausted today, because I biked a 100 miles this weekend, which for an old overweight guy is pretty good.

Kevin Anderson (00:01:33):

A 100 miles, well, cycling 10 miles is still worth doing, but a 100 miles is a significant distance.

Nate Hagens (00:01:43):

In over three days, I did 40, 30 and 30 and I'm hurting today to be honest. So, I have followed your work over the years. You are a scientist and an eloquent communicator on the issue. One of the issues of our time, which is climate change, and I have a ton of questions for you, I look forward to this discussion. To be blunt, I'm a little anxious about this discussion and I'll tell you why, is because when I invite guests like you that are experts in another area than I am, it always seems to be that I learn from you and you learn from me, and the aggregate of our understanding makes our situation seem much more daunting and worse.

The Great Simplification

Kevin Anderson (00:02:48):

And that's probably because most of the time I think the tendency for us as humans, as parents, as people who value our society is facing the consequences of where we're heading is very challenging. So, I think we tend to, even for ourselves, sweeten the pill a little. And so, I think when we get together and discuss just how things are almost all pointing in the wrong direction, not everything, but almost all and often accelerating in the wrong direction, it's hard to draw anything other than an even depressing conclusion that you start with. And, of course, you lead those conversations and you have to live your life day to day. And so you start to again, I think try to find coping strategies which often is just slightly adjust the reality that we know from our more cognitive engagement if you like.

Nate Hagens (00:03:40):

Yeah, that's well stated.

Kevin Anderson (00:03:41):

If that makes any sense.

Nate Hagens (00:03:43):

Yeah. So we're going to get into it. But for those that don't know you or your work, what is your background in climate science? And how has that over years or decades led to your recent work and your conclusions about the state of the climate system?

Kevin Anderson (00:04:06):

Well, unlike a lot of academics, I've got a slightly different background. I left school at 16, I did my apprenticeship as an engineer in the engine rooms of ships, oil tankers, containers, ships and so forth, traveling around the world. Later on I went to university, did an engineering degree, mechanical engineering. I went into the oil industry to design offshore oil and gas platforms, which I did for quite a lot of years. And so I have at least 10 years practical design engineering experience, mostly in the petrochemical industry. So I have that engineering background. But right from being a kid, I've always been interested in environmental issues. Climate change was not an issue back in the late '60s and '70s, at least it wasn't something that we voiced

The Great Simplification

commonly that was more discussed about nature, and environment, and that way of thinking of the world and that certainly influenced me.

(00:04:57):

But, I was also very interested in engineering right from being young. My dad worked at a nuclear power station as a mechanic, as what we call a fitter. And he used to talk about energy and engineering issues. And we lived by the sea, so it felt quite nice to combine the navy and engineering. And right throughout all my time, even on the rigs, I was always very aware of the environmental challenges we faced and tried to improve things in terms of capturing the CFCs that we used at our refrigeration systems at a time when the ozone issue was a big challenge. It still is to some degree, but much of that has been resolved. And also, recording spills from our platform and reporting my own company to the relevant authorities. That was on top of my day job. So I always had that other environmental or maybe just fairness conscience that went alongside my work.

(00:05:49):

And then, whilst I was offshore, climate change became a big issue in the press if you like. And it seemed to me it was an area I didn't know so much about. So I went back to university did the masters, looking at climate change and broader environmental issues. And also how we might resolve them mostly with economics, which I was deeply disillusioned by. And I then went on to do a PhD, and then pretty much an academic career since those days. But I think having that engineering background and particularly one when I've been involved in energy and petrochemicals. Really provides me with a certain set of insights that not all academics actually have. And I found that very helpful in trying to think about the challenges we face today.

Nate Hagens (00:06:29):

So, I think we're going to jump all over the place with this because I have a lot of questions for you. Let me start with this. It's all over the news that last week was two consecutive days of the hottest temperature that we're aware of for the last 100,000 years is what I'm reading in the media. Could you just expand on that? How do we know that? What are the implications of that, and why is that relevant? I think that's kind of obvious but can you unpack this for me?

The Great Simplification

Kevin Anderson (00:07:08):

Yes. How do we know it? Well, we have been measuring temperature around the globe for many, many years now. Going right the way back to even when we were doing it in the days of sailing ships for instance, when they would monitor different parts of the oceans. And we know what types of thermometers they use so we can replicate those measurements today, the few measurements we had. But of course as times progressed, we've got more and more measurements and now we can both more precisely and more widely measure temperature around the globe. So we have a very good historical record which has got better and better as time's gone on, because of the instruments we can use and more importantly the frequency and the geographical spread of those measurements. And we are very confident now when we give these temperature figures, where we're heading. For me, personally, it's another very bad sign when I hear about some high temperature somewhere or levels of rainfall that are way outside the margin.

(00:08:11):

So we're certainly seeing these things happening more often. But it doesn't trigger anything in me other than one of this is exactly what we expected. It's not, oh well, what a shock. This is what we've been doing, this is what happens when you think that you can rule physics. When you think that your ephemeral politics and short-term economics can somehow trump how the atmosphere sees the rise in CO₂ molecules and greenhouse gas molecules. Inevitably we will start to see these records broken and we'll start to see the implication, and more importantly see the implications of that in how that changes basically all systems around the planet. That are then trying to deal with the significant variation we're seeing now in temperature, and rainfall, and floods, and droughts, and fires, and all the other repercussions of putting huge quantities of energy into the atmosphere. Where we're putting unprecedented quantities of energy into the atmosphere, and somehow our politics and economics expects business as usual. Well, the physics will play out a different story, the physics always trumps the short term economics.

Nate Hagens (00:09:18):

Building on that, and this is one of the things I wanted to talk to you about is I think we have three systems and there's an implicit assumption that they're all overlapping,

The Great Simplification

but they're really not. We have the climate system and you could call it a broader ecological bio geochemical system, but for simplicity, we'll just say the climate system. We have the socioeconomic system including geopolitics and elections and power and all that. And then there's the energy system, coal, oil, natural gas, solar, renewables, geothermal. And it seems like those three systems actually the overlap of them is this tiny sliver of the current net-zero narrative. But for us to really do something, those three systems have to have a heavy amount of overlap and they do not right now.

(00:10:16):

So those listeners of this podcast that are deeply aware of climate change, probably nothing you say is going to educate them or surprise them. But a lot of people who are focused on poverty or the energy or biodiversity or other things, they don't know what you know about climate change. And it really feels to me like a slow motion unfolding of the movie *Don't Look Up* because these camps of people are not talking to each other looking at the same map. What are your thoughts on that?

Kevin Anderson (00:10:57):

Well, I would agree with that. I would be slightly sympathetic, sorry, slightly less sympathetic. In fact probably go as far as say often quite critical of the group. You started off by saying that we buy into this narrative, we understand the broad framing of the physics and where we're heading. But I think we have... And I've often used this language, repeatedly used the language of we're not science deniers, but we are mitigation deniers. We're the people that have denied the scale of the challenge and the implications of that for our system. And in that I very much include the expert group, that could be the NGOs, it could be a lot of the senior people in academia for instance. So those people who have often worked on and accept the science are simply unprepared to accept what the implications of that science mean for modern society.

(00:11:51):

So I think in some respects that increasingly the last few years I felt that that's the group we really need to get to, our own group. Because when we describe the narratives about what needs to be done, I don't think they in any way align with what our own physics or what our own science is telling us. So we are sweetening the pill, we are deluding, not just other people, but the real skill I think we've successfully

The Great Simplification

managed here is to delude ourselves. We've deluded ourselves that somehow we can significantly shift business as usual. And in that I think equity is an absolute key concern. We can shift business as usual to align with what our science says as necessary to deliver on our political commitments, which in themselves are I think quite weak. But really scratch beneath the skin of us experts and I think we're fully aware that that is a delusion. That the repercussions now of how late we have left things mean that the changes to business as usual, they don't exist in the current paradigm. (00:12:50):

We're talking about a fundamental reshaping almost every facet of modern society. And we don't describe it like that because we don't want it to be like that because we have done remarkably well out of the system. So we don't really like the idea of thinking about what would be necessary now because it would be very uncomfortable for us.

Nate Hagens (00:13:10):

I kind of agree with that but I'm not so sure that it's delusion. This is what I meant by the three different circles. I don't think the socioeconomic circle is overlapping with the climate system because what would we have to do? I don't think democracies or capitalism are commensurate with the true changes that would be needed to happen. There's no solving climate to avoid the worst and to mitigate the current trajectory. This is what I meant at the start that I'm looking at social systems and energy systems and I think what would be required to cut our emissions to the levels that are needed is going to be politically and actually physically impossible given the momentum of our current energy and metabolic needs. So I struggle with it.

Kevin Anderson (00:14:20):

I think your conclusions will turn out to be right. But I don't think necessarily that they are the right conclusions of exactly where we are today, I think we'll continue to choose to fail. But to me, that thin gap, if you like in the old data says a great paper but whatever you'd call it now. That there's a small opportunity for driving significant change. And I would tend to agree with you, I don't think it can be aligned with whatever capitalism is, the modern structure of our economies. I think that is completely counter to what would be necessary, anything like what would be

The Great Simplification

necessary. But I'm not so sure about the democracy one, I think because we don't really have democracy, we have a very partial democracy and that partial democracy supports the status quo. If we had something that was actually more what most of us think of democracy in a simplistic form where people have their say, then maybe that could be aligned.

(00:15:14):

But we don't of course have that. What we have are highly biased power systems which manipulate democracy to serve the benefits of those powers. And so I don't want to privilege that system with what we might call democracy. I mean the United States barely has a functioning democracy. The UK has one but it's rapidly trying to break it down. At some degree the EU has one. So I think there are different interpretations of what democracy might look like and it might be less worse than others. But I wouldn't go as far as to say yet that a properly functioning democracy is incompatible with the scale and the rates of change that we need. I think the power structures that have abused democratic systems are incompatible with the changes that we need. And in fact, not only incompatible, they deliberately are trying to counter the changes. It's not as if it's just coincidentally incompatible, they don't want to bring about the changes because they like the power systems that we currently have, we benefit from.

Nate Hagens (00:16:17):

I just don't see humans globally in India or China or anywhere voluntarily using less energy because that's what this is really about. I just don't see a mechanism for that.

Kevin Anderson (00:16:33):

Certainly from 2007 onwards and in quite a large sways of the Global North, we have seen significant sways of our population put up with and sometimes have to endure actually reductions in material wellbeing and lower energy consumption. Now let's be clear of across our societies, this is very seldom been the case. The wealthy of us have done remarkably well and we somehow think that we deserve it. But I think it's not as if society or many people in population would be completely opposed to less material wellbeing, that's happened to them under a spurious economic system that has served this other group very well. Now, if arguments can be made that society as a whole

The Great Simplification

should change its material use and energy use, ideally less than those for the wellbeing of those society's own children, their own future and of course that of it's intertwined other species as well.

(00:17:29):

If that argument can be made without being twisted, then I think you can bring a large sway of the population with us. Because it would not mean for those they would necessarily have to use less energy or less material. And in the end, of course for most people it's not even the energy they care about, it's the services the energy provides. And there are lots of ways to provide those services without using lots of energy. And if you are going to use some energy for it to actually to have much lower carbon, greener, whatever language you want to use, much more sustainable energy systems. So I don't like the idea of seeing the populace as one mass and in some ways I think the sooner we break up some sort of collective view or fellowship around climate change, the better. We need to drive wedges in there because those separations exist and have been deliberately manipulated by those of us who've done very well out of the system.

(00:18:21):

So I would like to almost to some degree, and I realize this language is quite provocative, I almost want to open up a class warfare, maybe warfare is not the right language, but as a metaphor. Because I think that that might help us understand where the changes need to really focus. Which is why I think people in positions of power, people positions of influence, and I don't just mean in this to billionaires, I often mean people like myself, like the professors, like the so-called elites in our society. That while we are reluctant to open up that Pandora's box about equity because we know if we do, it will be very incredibly uncomfortable for people like us who have done disproportionately well out of the system over the last 30, 40, 50 years if not longer. So I think there is scope for a new narrative with much, much greater appeal than the one where we see universal, we on climate change.

Nate Hagens (00:19:25):

Could you unpack that with data and statistics on who's emitting so much and consuming so much? I assume you have those figures.

The Great Simplification

Kevin Anderson (00:19:37):

Yeah, I've got some of the headline numbers, they're just obscene. Now what's interesting about them, they're not produced by left wing think tanks. This sort of work that came out in 2015 from Lucas Chancel and Thomas Piketty, which fell in just before Paris about carbon inequality. Just demonstrated then this huge inequality even within wealthy parts of the world. Between those who are responsible for the lion's share of emissions and those who really just have no agency to change their emissions. They're locked structurally into the systems that are around them, poor quality housing, rubbish public transport and so forth and don't have the wherewithal to change those things. So they demonstrated that the famous thing that came out of that was that 50%, half of the world's carbon dioxide emissions broadly came from the activities. So just 10% of the world's population.

(00:20:23):

And then more recently we've seen work from various people, Sivan Kartha, the Stockholm Environment Institute, but I think most tellingly from the International Energy Agency, who was really being a bit of a laggard on many things climate related. Slowly changing its tune, not as fast as some people suggest it is but it's certainly improving I think. But nevertheless, earlier this year, I think it was in February, they had a report out pointing out, and it was reiterating some of the other numbers, that the lifestyles of the top 1% of global emitters produces much carbon dioxide, sorry, twice as much carbon dioxide as the bottom half of the world's population. So we are not all in this together in any way, shape or form. Emissions are dominated by a relative few in our societies and that includes within wealthy societies as well. It's not just the difference between poor and wealthy countries, but within wealthy and of course within poor countries, there are huge differences.

(00:21:16):

That gives scope for rethinking what the policy realm might look like. But the problem is the people structuring the policy realm, informing the narratives are almost without exception in the high emitting group or desperately clamoring to get there. And so we are reluctant to introduce narratives that will be very uncomfortable for us, but I think the data itself does suggest, we need to open up the dialogue much more widely. And in that sense, I think there are much more constructive, progressive, positive narratives

The Great Simplification

that most people could buy into. But when I say most people that of course these people typically are not the ones with their hands so readily on the levers of power, it's not to the structures that we have. The levers of power for them are probably are the ones that would normally our legal systems try and stop.

Nate Hagens (00:22:11):

This is why I think those three systems are not overlapping because I've done a lot of work on complexity and energy systems and the metabolism of our culture, and I totally agree with you. Well, it's not up for debate that the top 1% are using double the emissions of the bottom 50%. But how to change that is a herculean task because I think each of those cultures, each of those states and nations has a built infrastructure that relies on what it's built. And to change that instantaneously would collapse the entire system, which then feeds into the nitrogen fertilizer that's created from fossil fuels is feeding Africa, for an example. We have a hundred million people that live in the southeast United States. If they had a ban on air conditioning or something, there would be a mass migration. So it's the incremental building of the system that's got us here. And I think to just draconianly even cut 10% would have massive systemic implications for the global economy. What do you think about that?

Kevin Anderson (00:23:38):

Well firstly, I suppose going from the end of what you're saying, more towards the beginning, I don't know quite what the global economy is. I can see our sort of Global North economy and I think increasingly China is a different interpretation of that, but something quite similar and probably India moving in that direction. But there are different, certainly the global economies have importantly different nuances to them which maybe could be levered further apart. So you look at the US and then you look at Sweden, at least until the recent election anyway. You look at Sweden, I think there are significant differences there, not sufficient differences to solve these problems but I think ones that could be levered further apart. So I think that there are economic models that are less out of tune. They are still all out of tune as far as I'm aware with what is necessary.

(00:24:25):

The Great Simplification

But there are ones that are more aligned, and generally those are ones where we see greater levels of equity or less inequality, but they're still not anywhere near what's necessary. But the two examples you use then I think are interesting, one about feeding Africa, about fossil fuel produced fertilizer? Well, a huge proportion of the world's fertilizer rather is used for putting into generating, producing animal feed. So straight away there, it's not as if you're saying people have to starve. It might mean that you can still provide the calorie input for people around the world, but we could do that much, much, much more efficiently. Again, that's not going to solve all the problems, but it would mean that we could dramatically reduce the amount of fossil fuel we'll use there and maybe find other alternatives to produce the relevant nitrogens when they were necessary. And on the other side, it's a really simple assessment I made a few years ago and it's just a simple calculation to get a handle on the levels of cuts we can make.

(00:25:29):

If the top 10% of global emitters, which includes about one third of the people in the OECD. So about the top 10% of global emitters reduced their carbon footprint to the level of the average European, which is still very high, about six tons per person for carbon dioxide at the moment. And the rest of the world, the other 90% of the world's population, which of course does include two thirds of the people in the OECD countries, made no changes to their current emissions. That would be a one-third cut in global CO₂. Now if this was a climate emergency, I think you could do that almost overnight.

Nate Hagens (00:26:02):

Well, it is a climate emergency, but it's not recognized as a climate emergency.

Kevin Anderson (00:26:09):

Yeah. Well, we actually rhetorically recognize it as climate emergency and lots of governments then do absolutely nothing about it, it's even worse. I'd rather them just say, "We don't care," just let's have some honesty, we don't give a damn about future generations here, we only care about the next five years. Then that's an honest position we can argue with it, but they pretend that they're concerned about climate change and they declare climate emergency then do absolutely nothing. But what I'm

The Great Simplification

saying there is that you could get a massive cut just by changing lifestyles out of a relatively small group. And when I say changing lifestyles, that means the materials and the way they use things could be used for other purposes. So I've started to describe this more recently and you talk about what would be necessary with a collapse to the global system is a complete shift, but that's going to happen anyway. So there are no radical, no non-radical ways out of this. We have chosen to leave it so late, a third of a century since the first IPCC report.

(00:27:05):

So we've deliberately failed over those 30 years. In fact, we don't just fail, we've seen emissions rise by about 60%. So the system is going to change either because we have the wherewithal and the intellect and the compassion to do it in some sort of organized fashion, which will still be very problematic. But we actively try to do it in some way that we can muddle through that. Or alternatively, we just carry on with the lies and the rhetoric and we'll be hit by increasingly severe implications of rising temperatures. And that will mean a fundamental reshaping of the world anyway. But it won't be done in any organized, compassionate way, it'll be sort of hell on earth type. Everyone out for themselves, mass migration, collapse of lot of agriculture systems and the other systems. We see all the work that people like Rockström and Tim Lenton and others that have done other sort of tipping elements, tipping points, whatever language you want to use, those things starting to play out as well. That's an utter disaster, that will change the current global system.

(00:28:07):

So there is no way out, the current global system will change. Either we do it as best we can, organize fair fashion in a timely manner or just carry on with lies and rhetoric and pass on to our kids. Say, "Hey, you sort out the chaotic mess that we've given you." So I don't think there's a way out of that, it will change one way or other. And I see the role of people like me to say, well, is there a way? Yeah, is option A, which I often refer to as the velvet revolution rather than the violent revolution. Is there a way of that's actually trying to open that up as to what would that have to look like and how could we do that very rapidly? And I think the issue of equity does give us a lot more policy space, if you like, than the traditional way of just bolting on bits of technology. And

The Great Simplification

some sort of rubbish financial mechanisms to business as usual, which is what we've tried for 30 years and this fundamentally failed.

(00:28:57):

So you may be right, maybe we are going to go to hell in a handcart and there's nothing we can do. But at the moment I don't think you can come to that conclusion. I think there is that thin chance of us using our intellect for something slightly more worthwhile than we normally do. And that could open things up for a rapid change. Whether it's rapid enough, who knows? But we are guaranteed to fail if we don't try.

Nate Hagens (00:29:24):

Yeah, I have so many thoughts, Kevin on this. First of all, you and I care about the same things, but I've approached this from a metabolic standpoint. So I'm calling the climate change and ocean issues the next 30, 50 years biggest issue in the world. Next 10 years, I think there are four more prominent issues, the lack of geopolitical agreement leading to potential nuclear war. This morning Ukraine blew up another bridge and Russia pulled out of the wheat agreement. And wheat is up like five or 7% today and it's going to go higher. This also has an equity implication on the Global South because Russia and Ukraine together are a quarter of the world's grain exports. The second thing is this financial overshoot is met much of the Global North is technically insolvent and we're printing more money in order to maintain our current existence. We're borrowing money in order to use more energy today, and that's totally unsustainable.

(00:30:39):

The third thing is the complexity of our six continent supply chain. And the fourth thing is the social contract, I think all those things are going to be more prominent than climate from a leader, government policy perspective. Those of us that care deeply about the environment want to say no, let's incorporate this into our decisions. And I actually think your best role and people like you... And I'm about to get to this part of the interview, is to paint out exactly what one and a half degrees, what two degrees, what two and a half degrees looks like. Because I still think people are imagining this as numbers or temperatures and it doesn't emotionally hit as to what this means in the future.

The Great Simplification

Kevin Anderson (00:31:32):

I think overall we are agreeing there but I think there are potentially some important distinctions. The issues you feel you were discussing and bringing to the fore for the next 10 years, I think are all symptoms as is climate change, of the economic. And I'm not trying to pillory all economics, but this particular economic, for want of a better term, I don't particularly want the term, but sort of capitalist model that we have. So they're all symptoms of that I think in many respects. And in other respects, they're often quite self-reinforcing

(00:32:16):

To provide an alternative. But, within that, as I say before, I think there are very clear differences between nations as to quite how that plays out. And I think that might be important. Again, we mustn't sort of see the whole world as one place, even the Global North as just having one model. There are sufficiently significant differences of the social contract going back to the 1920s in Sweden that is quite different from, well, actually, well maybe there was similarities, some similarities with Roosevelt's fireside speeches there. But anyway, certainly they've played out differently over the intervening a hundred years. So, I think there are important differences there. The other thing is I'm not sure how appropriate people like me to be pointing out what this looks like. And also, I agree completely, if we were going back to do it again, we would not choose temperatures, surely we wouldn't use temperatures.

(00:33:05):

One and a half degrees centigrade of warming in a chilly day in the peak district near Manchester you think, so what? That's what most people, not unreasonably think. And so I don't think that's the best way to communicate these things, but I think we're locked into it to some degree now 30 years on, that's the sort of language we've been using. But to interpret that as to what that means for us, I think that we need a whole suite of other voices there. The people we trust in society, and I gather social science research demonstrates this, are typically people who are more local have similar dialects to us, more colloquial. They're discussing things down the road, the names of streets and places that other people are familiar with, and we often trust those. So local radio in the UK is often trusted much more than national radio.

(00:33:49):

The Great Simplification

Because there's a sense of shared space and empathy and geography and all those other things. So I think we need to be getting these narratives about what the world might look like, but also the positive ones and the negative ones. Get those much more from people who are culturally embedded in those societies and not using things like CO2 molecules or temperatures. But trying to use a better language that describes the world in a way that people are more familiar with and understand. I like PowerPoint slides, I like graphs, I like see I'm measuring CO2 molecules on spreadsheets, but that's not a way to communicate to most people. And people like me are pretty poor at going beyond that way of thinking. So I think there is real scope for bringing other people on board to discuss what these futures might look like and move it away from the so-called expert field. But that's an engagement with those people.

(00:34:40):

And I know some people in the arts are trying to do this in very constructive ways, in other ways that always feel to be slightly more exotic and perhaps less helpful. But there are communities who are trying to do this now. Yeah, the role of philosophers, thinkers, storytellers, how they play out in our world, I think are also very important here. But we must make sure that we don't couch all this in some sort of elitist fashion that we are going right down to the, what does it mean for the local boxing club in Hume, near where I'm in Manchester and now right to this moment, what does it mean for them? So they're probably not going to want to listen to a rich white professor coming and talking about climate change. So I think there are ways we need to get a much richer cultural dialogue on the issue of climate change. But I say not just climate change here, more the sort of systemic challenges, as you rightly pointed out. That many communities, often some of the poor communities in our society are actually facing today.

(00:35:37):

Climate change being one of those but plays out in terms of food and particularly volatility of prices of food and energy which play out in terms of wellbeing and health of the children and all the rest of it. So I think there is scope for opening this dialogue up, but unfortunately the expert community people like me are actively there trying to close it down. Because we do not want to do that because it is too uncomfortable for

The Great Simplification

the norms of our society. And by those norms, I mean the norms that people like me have become accustomed to and bizarrely tell ourselves and others that we're worth it.

Nate Hagens (00:36:11):

I more meant not charts and graphs per se, but I think the public, including me at times think one and a half C, two C two and a half degrees Celsius over pre-industrial levels. It just seems like this linear story, but the difference between one and a half and two and a half degrees Celsius... By the way, for the record, I think one and a half is gone. There's nothing we can do for that and probably two as well. And I am a peak oiler, I think oil is going to peak and decline now. So by the year 2050, we'll probably have a half to 65% of the world's current oil production and that will change everything. But still, there's so much momentum built into the system already. And I don't think people understand what a two and a half degrees Celsius world will look like yet. I think the majority of people-

Kevin Anderson (00:37:15):

Not the one we live in today.

Nate Hagens (00:37:17):

Yeah, can you maybe spend a few minutes describing it.

Kevin Anderson (00:37:23):

I think the best that we can often say is that it's going to look nothing like the world in which we live. Modern humans have lived with a very, very stable temperature with very little variation. So all of modern human time has been spent with very little variation in the global temperature. In other words, the amount of energy we've got into in the atmosphere. And overnight, literally overnight, we're changing that by a significant margin and we call it one and a half degrees or two degrees or whatever. But these small numbers represent massive shifts, massive increases in the amount of energy we put in the atmosphere. Which means that plays out in terms of all systems around the world, human system, agricultural systems, energy systems, water flow, temperature. All of the things that we have relied on for modern society literally get thrown in the air.

The Great Simplification

(00:38:11):

And we don't know exactly how they're going to come down. But what we do know is when you just almost collapse systems overnight, then there is a period of significant chaos. Now okay, in a planetary level some clever being may look back in a few million years and think, "Well, that looks quite unpleasant, that hundred thousand years or that 1000 years or that 10,000 years. But hey, it was just a blip." Well, that blip is the one that we are living through, it's these sorts of changes we're seeing, I use that language, I've got a hell in a handcart, are going to be a catastrophic at virtually every single level. And because it's not just the temperature, the sort of work that is coming out from these, what are called planetary boundaries. Again, it's an expression, it's fine for some of us to use but not very helpful for others.

(00:38:55):

When you're looking at the other ways that the world has maintained this very nice stable system and how come they're all entwined? How come the forest absorbing the excessive carbon dioxide until some point, they can't do that anymore and the temperatures change. And they're no longer rainforests and they now are much more susceptible to catching fire and becoming sources of emissions. So all the things that have allowed this wonderful planet to maintain some sort of stability whereby humans over a very short period of time have become phenomenally successful. All of that balance is effectively thrown in the air overnight, literally overnight. So you've gone to work, you've come home in the evening, two of your kids are dead, one of your parents is missing, the house is on fire and there's some flooding down the end of the street. It's chaos that's occurred overnight. Now at the moment, we're just on the cusp of that and in some parts of the world that's already happening.

(00:39:47):

Let's be clear, climate change is not a threat, it's a reality for many people around the world today. Elements of it are playing out already but particularly for those of us in more sort of geographically insulated places in the world and probably slightly wealthier, we just get in the early signs of it but we can see it playing elsewhere. But our science tells us absolutely clearly where we're heading and that we have to do everything we can to avoid it. So there is nothing out there that suggests that living with one and a half, two, two and a half, three, three and a half, four, wherever those

The Great Simplification

temperatures might stop, that that is a good place to be. We know that in the short to medium term, and by that I mean over the next, any sort of period of our own children's life, our grandchildren's life, our great grandchildren's life. Over that sort of timeframe, we are locking in sort of horrendous lives for them and for all other species.

(00:40:43):

So there's nothing positive about that. There is every reason to change what we're doing today rapidly and very significantly in a much more progressive fashion. I'm not giving you one by one accounts of exactly what will happen because we don't know exactly what that will be. Simply because we're throwing the whole basket in the air and seeing how will it come down. And it'll come down chaotically, now exactly which way chaotically, we don't know. But chaotic things are not things that we can live satisfactory good quality lives within.

Nate Hagens (00:41:21):

In my materials for my college students, I likened it to the earthquake scale, the logarithmic scale, the Richter scale. It's not exactly like that, but wherever the temperature ends up, stopping 2.5 degrees is infinitely better for the planet than 2.6 or 2.7.

Kevin Anderson (00:41:41):

Absolutely, yeah. Every 0.1 is a worth, yeah. Every 0.1 is worth fighting for literally. But in that, I don't want us to think, oh, okay, well 1.6, it's not much more than 1.5. We should be doing everything we can to stay nearer to 1.5. As you said, and I think many people will agree with you. I don't quite agree with you, but I think most people I know in the climate realm will do. That we have no hope of 1.5 and probably we're going to pass two. If I was to put any probability on it, I'd say we have every reason, every reason to be deeply pessimistic that we will stay below 1.5 as a long-term temperature rise. And I think that also holds for two degrees centigrade, but every reason to be pessimistic doesn't mean to say we're guaranteed. And again, it's that idea of is there enough of a sliver of hope in there to try?

(00:42:43):

The Great Simplification

If we're lucky on how the climate responds to our emissions, and if our policy makers get their heads out their ass, more significantly, I think the ones we have are by and large inequipped for the system level challenges of the 21st century so it probably means you're replacing them. If we could do that in some sort of way relatively quickly, and then I think there are ways we could probably, if we are lucky on the sensitive climate, what's called climate sensitivity, we might still hold a 1.5 to two degrees centigrade. The evidence suggests we are unlikely to be lucky on the climate sensitivity, and so the temperature is likely going to go way above that.

Nate Hagens (00:43:17):

I'm going to have James Hansen to talk about his new paper once it's through peer review on the climate sensitivity, because that's quite a scary situation. So, let's just focus on two degrees.

Kevin Anderson (00:43:29):

And let's be clear. Especially about James, I think people like James have made a really important contribution. His work is almost always very, very valid. And I think actually almost that that should be his voice and that end of the science spectrum should be the one that informs policy because the consequences of failure are so utterly, potentially so utterly dire. And so I think we should be listening to people like James and this is how it might turn out. Now we could be lucky, and there are other people writing the other end of the science spectrum. Both are valid from the science, which has elements of uncertainty inevitably in it. But even the most optimistic interpretation of the science doesn't look good, that looks very, very bad. And then we've got James', which looks really, well, it's completely a different planet, probably moving beyond our solar system in terms of what's happening. But it's just a different world altogether. And it's not that I disagree with James Hansen's work at all, I think it's a really important part of the debate and from a policy perspective that should give a lot more impetus for why we need to do everything we can today. All the things that we think aren't possible, let's try and do them.

Nate Hagens (00:44:35):

The Great Simplification

So many ways to go with this. First of all, I want to ask you, let's set one and a half aside for the moment because that would be a harder ask. But you think there's still a chance of remaining under two degrees? Can you explain what we would need to do. And you can say one and a half if you'd like. What would we need to do?

Kevin Anderson (00:45:00):

Yeah, I think it's can be unhelpful for a communication point of view, but nevertheless, as an academic who works in this area, I think I have to hold to what the analysis tells us as my interpretation of it.

Nate Hagens (00:45:17):

But isn't that interesting, Kevin, because you're wearing two hats, right? You are a climate scientist, but also a communicator for policy. You're wearing two hats simultaneously and you constantly have to switch back and forth between them. It's difficult, isn't it?

Kevin Anderson (00:45:39):

Well, actually that's an interesting, because I use that language in a critical way for a lot of others. My communication should communicate in an appropriate language exactly what my analysis tells me. So I should not sweeten the pill away from my analysis. So the language I use, the words I use, they may be the adjectives to describe the numbers if you like, and they should be a fair reflection of those numbers, of the analysis. There are lots of colleagues I have, particularly senior ones who what they do is not that they just choose different adjectives. They will rewrite the story, the adjectives will not reflect the numbers. They will do when you're down the pub having a pint with them or a glass of wine with them. They'll use the language that reflects their work. But they put a microphone in front of them, put them in some sort of boardroom or somewhere that's being recorded, and they'll spin a sort of cheery, or not a cheery yarn, but a challenging but doable within the current paradigm, within the business as usual view of the world.

(00:46:38):

So I think that's two hats and that is very dangerous because one of those hats is effectively dishonest. So the two hats, I would argue that what you describe, made for

The Great Simplification

me there is actually, I use a sort of language, a communication language, which is not just the numbers and the graphs. But that has to accurately reflect what comes out of the numbers and the graphs. And so going back to this 1.5 and two, what's important here to me is that from the IPCC, the Intergovernmental Panel on Climate Change, they give us a number, what we call a carbon budget. In other words, broadly, how much fossil fuels can we burn and dump the CO₂ in the atmosphere? And how many other greenhouse gases, mostly from agriculture, can we dump in the atmosphere? If you want to stay below two degrees centigrade, and it gives you a probability, what's a reasonable chance of it or not very good chance of staying below two.

(00:47:24):

And that's where there's some uncertainty, if you like. So the amount they tell us we can burn for fossil fuels and other greenhouse gases for a good chance of staying below two degree centigrade also gives us an outside chance of staying below 1.5. I would say the analysis in the IPCC innately is very conservative. Now it's not a criticism of it, that's the role of the discerning user of the intergovernmental panel of climate change data to recognize that the process of bringing the consensus amongst the scientists often means that it plays a slightly safer role. It won't push things perhaps as hard as it might do if you talk to the individuals separately. And so I think we have to choose, take the IPCC as the most optimistic interpretation.

(00:48:11):

So I work from that and say, recognizing that it is in my view, quite a conservative organization and say that's not criticism, that's a natural function of how it works. Then I think we have to look at the budgets they have as been the most we can have. But then that tells us something, that tells us how much energy we can use, how much fossil fuels we can use. It gives us a timeline from where we are today to when we have to eliminate all fossil fuels. And that starts to feed into, well, okay, well how would we do that? What does that mean? So a timeline for a good chance of staying below 1.5, I can't see how you could write that future. I don't know how you could do it, maybe someone else could do it, I couldn't. I've tried it and I can't. The timeline, in other words the amount of emission space we have for a good chance of staying below two, I could sketch out what that word looks like.

(00:48:57):

The Great Simplification

And the headline things are firstly that whether we like it for moral reasons or not, the equity part is absolutely key. How do you drive the emissions out the system in the very near term? And the near term is the most important part because dumping the CO₂ in the atmosphere at 42 billion tons a year at the moment. And then, on top of that, another sort of 15 or so of other greenhouse gases. So the equity part tells you if we're serious about our commitment, then the wealthy amongst us in society, and that's not just the billionaires, we will have to have rapid, deep changes to how we live our lives. And that will have to come through, we won't do it through altruistic means. That means that our leaders will have to put in regulations and policies that drive our emissions down very rapidly.

(00:49:41):

The repercussions of that are pretty significant. Now, we won't be living in large homes. If it's 150 square meters, then that's as big as you'd ever build anything, probably much smaller than that. If it's a very large house, when it gets sold, it'll be split into two. We won't be having the big SUVs, they'll be taken away. The materials used for making trams or wind turbine blades. So it's basically moving the productive capacity of our society from furnishing the luxuries of people like me to actually improving the public infrastructure, decarbonizing our public infrastructure. You look at most of the homes across continental Europe or indeed in the US. Most of the homes are really inefficient, they're really poor quality in terms of energy use and keep them either cool or warm. They're certainly not fit for the 21st century. To make those homes fit for the 21st century is a massive labor and materials job as is improving public transport so that virtually all travel will be done by public transport and active travel.

(00:50:33):

Now, these are massive infrastructural jobs. I align them with the Marshall Plan, the reconstruction of Europe after the Second World War. Or the new deal that came out of Roosevelt right back in the thirties. So there are analogies and they sort of fall apart quite quickly, like all analogies. But they give a feel for this sort of fundamental reshaping of the productive capacity of our society. The simple language I use is that we have to move from effectively private luxury for the relative few people like me to private sufficiency for people like me. So I can still live a good life, but private

The Great Simplification

sufficiency but public luxury for all of us. So all of our public transport system works, we all live in reasonable, comfortable homes, can afford the energy they save for the homes. That we can all eat reasonable diets, that we have public swimming pools and public parks and those things that we can all share.

(00:51:23):

Rather than at the moment we have this privatized world where pretty much what we've moved towards is relative public squalor for a lot of people and absolute private luxury for a relatively small group of us. So it's a shift in that productive capacity. And I think you can align that with the carbon budget for two degrees centigrade just about. So that's the sort of shift I'm talking about. Do I think any of that's likely? No. Do I think it's possible? Yes. Do I have any sense of how that could come about? Some inklings but I think it's probably quite cultural how we look in the states or Sweden or China would be quite different.

Nate Hagens (00:51:58):

So for the last 20 years, Kevin, I don't know how much you know about my work, but I liken humanity's explosion to a thousand times our population times our goods and services in the last 500 years on the backs of the carbon pulse. Which is that we are using this incredibly potent indistinguishable from magic on human timescales, 10 million times faster than it was sequestered. And all of our economy is based on that. So when you talk about a carbon pulse, have you ever mentally, I'm sorry, a carbon budget for the global economy. Have you ever likened that to like a cocaine budget? Because if people or nations or developing nations or insolvent rich nations run out of the energy needed to power what they recently had, they'll go to debt or crime or war in order to access it. I think that's what we're facing, that sort of a dynamic. And what's going on with Russia and Ukraine is just a tiny tip of the iceberg.

(00:53:14):

So again, I totally agree with the objective of limiting temperature, nothing to do with us but to do with the next thousand years of humans and other creatures, because there's an equity there too. There's the intergenerational fairness and there's interspecies fairness. And how many of the 10 million other species we share the planet with have absolutely no say and are not on a podcast with us discussing this.

The Great Simplification

Kevin Anderson (00:53:45):

I share your views there. I think that's the way we're heading. I feel my obligation is just to ask the question, is that inevitable? And if it isn't, however slim that chance may be how do we discuss, how do we open that up? But I wouldn't disagree with what you're saying there. You were talking about cycling before, I've just come back from a lecture tour in Ireland, did a thousand kilometers cycling in just over six days. Talking at different venues including the governments and so forth. But what was interesting, probably one of the most interesting things about it, I was traveling through significant parts of rural Ireland on smaller roads. And in all the time I was in Ireland, the only mammals I saw were two seals in some rivers, they just come up where the salmon are. One dead rabbit, one live rabbit, two dead hedgehogs, one dead badger, one dead fox, that's it.

Nate Hagens (00:54:48):

Why were they dead?

Kevin Anderson (00:54:48):

In 950 kilometers traveling round Ireland, they were dead killed by cars. And that's it, they are all the mammals that I saw that were not domesticated. That I saw probably thousands of cattle and sheep, quite a few horses, a few dogs, four alive cats, one dead cat. I kept a tally of everything. It was so evident and you went to Ireland, with a low population density. We've killed everything, we've killed the natural world.

Nate Hagens (00:55:18):

And it seems normal because last year was kind of similar to that, but maybe when you and I were boys going in Ireland, that same situation would've been totally different.

Kevin Anderson (00:55:33):

Yeah, what we've done in the last 20, 30, 40 years, it's just devastating to so much that has made our planet, not only successful, but also in my view, in the way I look at it beautiful as well, a beautiful and wonderful place. And there were so few insects as I was going around Ireland. The hedgers were... I'm giving credit, were credit's due. The

The Great Simplification

hedgers looked quite much more diverse than the UK. Not many trees, very few insects, almost no butterflies, virtually no mammals, very few birds. I didn't see one bird of prey. Yeah, it's not as if I'm traveling through an urban environment. I'm traveling through, well, compared to the US a small country. But a relatively large piece of land, of Ireland with a relatively low population on it. And I'm still seeing well, hang on, what's happened to the world that it evolved over the 3 billion years? It's gone, we've wiped so much of it out almost overnight.

Nate Hagens (00:56:26):

It's silent spring 60 years later, but not only due to pesticides but due to growth basically.

Kevin Anderson (00:56:37):

Absolutely, yeah. Growth and its role in our economic facade are hugely problematic and I think it's one that we are going to have to grapple with. Many people are trying to grapple with it but the incredibly powerful status quo is unprepared to have it questioned.

Nate Hagens (00:56:59):

That is at the core of this, Kevin, is we can talk about climate and biodiversity and emissions and net zero and renewable energy and all this. At the end of the day, all the problems that we face come down to governance. And my work says that there's a metabolism to the human system and we are not choosing, we don't have a choice. There is downward causation from outsourcing the decisions in our world to the market and the market has billionaires and politicians enthralled to it. So my question to you is, we need to do this for climate. Who is the we in that case and what would be a governance structure that could potentially implement some of the changes that you feel from a climate standpoint or necessary? Because I don't see, would it have to be a global thing or would it be the UK and the US taking the lead or the Global South? I just don't see who the we would be in that case, the United Nations?

Kevin Anderson (00:58:12):

Yeah. I don't,

The Great Simplification

Nate Hagens (00:58:16):

I'm asking you a lot of very, very difficult questions. so I realize that.

Kevin Anderson (00:58:20):

Yeah. No, it's fine. And I have given some thought to these, but it doesn't mean to say of course that one thing is in anyway correct. But I have spent a lot of time pondering over this. I don't think top down at some sort of global level, it can help and it can hinder and by and large it normally hinders but it could help. I think the structures sort of that we have could help. They don't at the moment really at all, but they can't solve or can't address the scale of the challenges that we're facing even within nations I think it is a struggle. So I see leadership, which is what we lack. I see leadership not as top down, but then I never really have, I see leadership as... And I know friends of mine who are colleagues of mine whose eyes will be rolling when I say this because they often hear me say I use the same language.

(00:59:12):

It is a messy relationship between bottom up and top down. Great leaders are not great people, they are people that have listened to other things around them and they have taken that on board. But the good idea is often they've percolated through the system and been interpreted and changed and modified as they emerge through the system from an individual potentially through to a family, through to a household. To household to a sports club, to a local council, to a company, to a council, to whatever that might be in our churches, whatever that might be. They percolate through the system and they change and they emerge and each time they're modified. And then it may well be that that informs someone who thinks about, well, how would you play that out in terms of policy within the council, within the government? And then we get ideas that have come through the system that inform the policy agenda against that, which is a really positive thing I think, and recognizing that in that sense, we all have a role, at least in places where we're able to do this. We all have a role to have our voice heard, to change things, to inform the debate.

(01:00:15):

Of course there are massive powers rallied against that and in that I include the status quo. Many of the climate experts, certainly people that sort of dominate a lot

The Great Simplification

of the higher profile events at the big climate jamborees every year, the cops and so forth. The people at top of these things are generally part of the problem, not part of the solution space at all. I think there are increasing numbers of people engaging in the debate, not just the formal NGOs. Some of the more informal NGOs involved now, wider populations are now just talking about these things because they're seeing some of the effects around them. Even when they're not basically talking them when in a way that as academics, it doesn't quite make sense. It's not really talking about things in a way that we would, but well, they're fine. At least they're debating these issues, they're starting to think about them and experimenting in their lives.

(01:01:01):

That in a sense, is that a group, a constituency that's not neatly bounded that can have some sort of helpful direction pointed towards it, but if you like. And could that be more powerful than the relatively small groups that have completely dominate the global economy? Certainly the Global North economy, which I know more about but even probably much the Global South economy. I think the jury's out on that, if it housed how rapidly it could shift that balance. Probably there have been times in history where it have, if we look in someone like the UK. Look at a national level, the rise of the labor movements from the industrial revolution, from the depravities of the industrial revolution, starting to say, well, how do we make this make the success of the industrial revolution environmentally catastrophic in many aspects? But the social successes of it, how do you make them play out more widely in our society?

(01:01:58):

So eventually we get a welfare system, a national health system. We see those things emerge that start to provide some equality in our society, which then is broken down in probably more recent decades. So I think there is scope for that sort of change and that dialogue. Again, I'm not saying I think it's likely to be successful, but I think feeding into it without some overarching view as to quite which direction it will go, feeding into it honestly, directly bluntly, mostly courteously, but perhaps not always. Some people will engage with it physically, they'll put their bodies in front of things. Some people will argue in courts, There are multiple ways where you can engage in these sorts of debates. As I said, I don't think they'll succeed but I don't know they'll fail. But I think that's much more where I see this governance change coming from.

The Great Simplification

Not some benevolent great and good bringing about the changes, I just don't think that's the case. It didn't happen with the suffragette movement, it didn't happen with the race movement. It didn't happen with multiple things throughout the history of modern and Global North societies.

(01:03:07):

They were forced to bring about significant change by groundswell movements in the end that included, of course, if you like the middle classes, it wasn't just all the very poor people, it was other people engaging as well. That is what we need now on speed, if you like. As I said, though it's likely, but I can imagine that it could succeed and some early signs of it I think are actually there. The dialogue we are seeing on climate change has changed not because of the professors, not because of the great and good, not because of all the people we would like to think or it's "I've had some contribution," some mild way we might have done. It's changed because of the voices of civil society getting up and saying enough is enough. Now not everyone is saying that, but those voices have changed the mood music in the last few years in the way that the establishment, including experts, has not.

Nate Hagens (01:03:57):

Yes, but 2023 all time emissions and all time highs and temperatures. So let me ask you this, imagine this scenario that there's some positive movement in the things you've just talked about, not huge, but some. Oil peaks and we have an end of economic growth, a reduction in complexity, hopefully not a resurgence of coal around the world because I think that's a real risk as people become poorer is we're going to try to get every scrap of thing to burn as we can. But leaving that aside, say that emissions peak but decline more gradually than you would require in your two degree scenario. What is the hope or what is the latest on regenerative agriculture in a way to sequester some of the built up emissions or the emissions in the future and or geoengineering? Is there any solid amount of emissions reductions in those two camps or is that mostly a fantasy?

Kevin Anderson (01:05:20):

At this moment they're fledgling industries or early ideas. So I think to rely on them and as to assume, as virtually all models do certainly in terms of some of the

The Great Simplification

technologies to suck CO₂ out of the atmosphere. Or indeed massive tree planting schemes without really thinking through the implications. The things are played out in every single IPCC scenario about what we need to do about climate change, including of course all the ones that come from the energy companies and most governments. I think is deeply problematic and shows the huge systemic bias by the expert community towards business as usual. That's not to say that we shouldn't try and pursue these things and research them, but let's not rely on them because they are in their infancy. Everyone will tell me about some regenerative agricultural scheme that they've got that somehow can be rolled out around the globe.

(01:06:09):

Well, they haven't been played out at scale yet as far as I'm aware. I'm less in favor with the agricultural side now I'm with the energy side. On the energy side and on the emission side, these technologies are just literally in their infancy. They're talking about storing a few thousand tons, maybe the odd million of tons. We're putting out 42 billion tons every single year, and these things would need to be able to do something significant in almost no timeframe. So yes, let's research them, let's not rely on them in any way, shape or form. And it's also worth pointing out in the carbon budgets, how much CO₂ we can dump in the atmosphere. Amount of fossil fuels we can burn in the IPCC scenarios. They anyway assume there are really big improvements in agriculture and other greenhouse gas emissions and they assume lots of improvements in forestry and so forth.

(01:06:54):

So they're embedded into the budget, so you can't double count them. So we should not be relying on these sorts of technologies but that does not mean just dispense them, ignore them, and do not use the language. They're not an insurance policy, you take an insurance policy, if something unfortunately goes wrong, it pays out. In this case, the chances of it paying out to me are incredibly slim. So it is not an insurance policy and that's the wrong language to use. But it doesn't mean to say that we shouldn't be putting some funds, some resources aside to try and research these things. Because anything else that can help, it's worth having, but there are plenty of things that we know would work today. I think you used the language of 50 to 60% of oil because of peak oil by 2050.

The Great Simplification

(01:07:40):

If that's the case then we're stuffed, we're blown through any budget for much higher temperatures. If you drew the IPCC scenarios down to zero from a straight line, from where we are today, for 50/50 chance of 1.5, we need to be zero emissions by about 2040 to give us a good chance of staying below two degrees centigrade it would be somewhere near 2055, something like that. So this idea that we'd have a whole load of fossil fuels in the system in 2050, that means we have failed, we have failed. So we have to eliminate fossil fuels much, much faster than that. And if you drew a straight line from today, because you're not going to draw a straight line from today. Even if we imagined that our leaders suddenly became more enlightened and really tried to drive an agenda, you're still talking quite a sort of political and technical lag of one, two, three, four, five years as you roll over from where we are today.

(01:08:37):

And that means actually that the emissions to be zero would need to be about 2035, probably for 1.5, good chance of 1.5 and near about 2050 and then fairly outside, probably 2045 for two degrees. So I'm not worried about peak oil because we haven't got any space for it, I don't even really think it's such anything because we're very good at getting more oil out of each well, and there's a lot of unconventional that we're still exploring. And that we are very good at reductionist technologies, engineers are great at that. It's wonderful part of engineering I loved and we will find new ways to get the fossil fuels out the ground. Fortunately, the renewables by and large are far, far cheaper, cleaner, in more ways easy to implement and give us more energy independence. They're almost win-win on every category the renewables, except for of course, they only work in terms of climate change if they substitute for the fossil fuels. And the renewables industry doesn't really quite grasp that, at least a lot people grasp it yet. That the climate doesn't care about your renewables, it doesn't care about energy efficiency, it only cares about how much CO₂ we dump in the atmosphere, which basically means how much fossil fuels are we burning. Renewables are irrelevant unless they substitute for fossil fuels.

Nate Hagens (01:09:49):

And the reason they're not substituting, they're adding right now isn't because of renewables. It's because the GDP is the goal.

The Great Simplification

Kevin Anderson (01:09:58):

I was just going to come back on your point you made earlier, which touches on that a little bit about the GDP is the goal. I think there's another thing that we all should be aware of all the great work from ecological economics, which is an economics that actually makes some sense. An economics that broadly works within the physical boundaries of the planet, everyone must think that economics does that, but most people who aren't aware necessarily that modern market based economics doesn't think that we have a round planet and physical limits. It's just has some sort of mythical world that they've generated and just by adding some maths to it, they look like it's scientific. I've often refer to sort of modern economics as little more than the astrology with calculus. But ecological economics, which there are many people work on that, they are providing much more useful insights.

(01:10:43):

But I also think in economics, in our economy, used the word earlier of economy... When my mom was looking after my grandparents, that part of the economy was never factored in. So there were all these things that are fairly familiar with I think the sort of discussions around particularly the caring communities and often it's the role of women, not always but often it's the role of women in our society. These things aren't valued in our society. So we'll quite happily measure an accident, a road accident or a tanker accident and how that improves GDP by all activity. But we're not going to measure the things that looking after your parents or caring for our community in one way or another. Those sorts of things aren't valued in our economy. And that tells us something again about how inappropriate GDP is as a measure. And indeed the fact the people that came up with GDP would never have dreamt it been used in the way it's today.

(01:11:30):

So the current form of economics is an aberration really. And it's not something that can be modified, it literally needs to be buried and we can all pay our respects and then we can get on with something more functional like ecological economics, which is a much better way to start to frame our world. And it's not as if we're starting from scratch there, there's lots of work that's been done on that over many years.

The Great Simplification

Nate Hagens (01:11:56):

I have my PhD in ecological economics, Kevin with-

Kevin Anderson (01:12:02):

Yeah, good. Well, I liked your reference in the paper too, was it apes getting their hands into the cookie jar?

Nate Hagens (01:12:08):

So you have read my paper, okay. So do you think it's necessary for leaders including climate scientists to demonstrate the changes they'd like to see in the world by lifestyle changes in their own lives as a way of leading by example? I know you have stopped flying and other things, how do you implement this view in your own life as a climate activist and why do you think that's important?

Kevin Anderson (01:12:43):

I don't see myself as a climate activist, I think climate activism is really important. I don't see myself as one of them and I can unpick that a little bit. This is a question that is asked all the time, there is ongoing debate about it, does it really matter what individuals do? Well, my key comment is in terms of emissions, perhaps there are few exceptions out there. The emissions don't really matter, the point about it is, is that there are a number of things that we absolutely know clearly from all the sort of psychology research around this. That if you try to make some changes yourself, even if you're successful or not successful, you can talk about it with others. Your arguments are lent to credibility, it doesn't make your arguments more or less valid, but people take more notice of what you have to say. And this isn't rocket science, if you go to the doctor and they're smoking away and they're telling you to stop smoking, you're not going to take as much notice as someone else said.

(01:13:36):

"Well, I've managed to give up. It's bloody hard, but I managed it." And so from a popular view of this, of course that's the case, but the research demonstrates that repeatedly as well. So trying to do things ourselves gives much more credibility to our arguments. And it also is part of the learning curve about how we do things differently. What are the problems when you try to install a heat pump? What are the

The Great Simplification

problems when you are in a really poor community and you're trying to get your street retrofitted from some limited budget from the council? What are the problems and the challenges there that opening this thing up, discussing it with our friends and so forth? Is experimentally, it's changing the tone of the debate, it's making us think differently about how to do things with the resources that we have.

(01:14:22):

And so I think it's absolutely key that we stand up and we will be accused every time of being hypocrites. Some pathetic low life out there and there are plenty of them, will make some comment, "Oh look, they drove their car there so that means they don't care about climate change." So by standing up to be counted to some extent with your own actions, we will be innately and accused of being hypocrites because of course we are. But we're hypocrites within the system that's still trying to change it. So I still think it is our role if we think climate change is that important to demonstrate it personally as well as just arguing it for others. But it isn't as if these are separate things, they're two sides of the same coin. System change and individual change are two sides of the same coin.

(01:15:08):

Let's also be clear, I don't want to put pressure on everyone to think they've got to try and drive emissions down personally because for a lot of people in our society, I'm particularly talking about wealthy societies that I know more about wealthy societies collectively somewhere like the UK or indeed the US. There are huge sways of people in our society who are absolutely struggling day to day, they're in rubbish houses, often rented them. There's no way they could actually afford to do anything to make them much more efficient. They've got a rubbish car that they drive to work with because the public transport system's hopeless. They can't afford an electric car. These people have no physical financial wherewithal to make dramatic changes to their lives. They still have political agency and including in the last few years, they've demonstrated that in voting for idiots like Trump, pathological lies like Johnson or a number of other fairly extreme views.

(01:15:54):

I personally have welcomed their vote, welcomed hearing their voice. And I've had a lot of criticism of my colleagues, I see myself as being on what I like to think of as the

The Great Simplification

progressive left. But I think the reason that a lot of these people are voting for these extreme views is because the progressive left has been neither progressive nor left or cared about these communities for years. The Democrats haven't cared about dust belt, the Labor Party in the UK hasn't cared about the industrial areas of the UK that have been decimated in the last 20, 30 or 40 years. And so these people are now getting their voices heard and often these people are the poor people in our society who are locked into the system. So the role of the rest of us then is to say, well, how do we get much better quality lives that are low carbon where they actually can start to retrofit their homes and have good quality public transport and improve health which is good for their kids, which improves their educational attainment, all of those things.

(01:16:46):

This is for large sway of society in rich countries. That's why I'm saying I think there are things we can do because I think there is a huge sway of people who are voting now at last, having their voices heard. In my view, sadly for the wrong sorts of framings of society. But nevertheless, they're having their voices heard and I think their voices would be much more supportive of a good world for them, their communities and their families. And it's the job of those of us who are in fortunate positions of influence and power and so forth to start to describe those futures and put in the wherewithal to change those communities for the better. So all of this comes together. I think there are ways to change things and even the fear that I hear a lot of so-called progressives say is, oh, well look, these people are voting for people on the rights.

(01:17:37):

I don't see them voting for anyone on the right. I see them voting against the establishment, the establishment has not cared about them for years. And not surprisingly, in the end they'll vote for any nutter, you put an orangutan up and they'll vote for them. Yeah, that's what Trump is or Johnson or people like that. A few people like them, but by and large people are voting for them holding their nose because they know that the establishment hasn't cared. I think that actually is quite a positive thing from a climate point of view or from a sustainability point of view. Because talking about a better society for all, a more equal society for all, a more progressive view of the future. And so I think in this changing how we as individuals who are the

The Great Simplification

high emitters with the physical wherewithal agency and making the arguments politically, gives us much more legitimacy when we talk to these other communities and trying to get them to come on board with us. Rather than they'll just turn around to say, "Well look, why don't you do these things then?"

(01:18:30):

Quite reasonably they say that and I hear that all the time, "What about you, you're not making these changes?" So I think there is something in that, those of us who want to bring about progressive change to demonstrate that we recognize it's important and it applies to us as much as it applies to other people.

Nate Hagens (01:18:45):

I want to segue into my closing questions because I promised you that we would finish in time for you to go see your PhD student graduate. Do you have any personal advice to the watchers of this video, the listeners of this program who are tuning in because they're aware of the climate risk? The global upheaval and anxiety with many of the things we discussed, what you'd call the poly crisis. Do you have personal advice to the listeners of this show?

Kevin Anderson (01:19:16):

The most obvious thing would be just to pinch a phrase from Greta, is that hope comes out of action. So acting is absolutely key here and now what exactly your action is, I think that will depend on your skills, your interests, what you are comfortable doing and sometimes what you're not comfortable doing. But identify things that you can do to try and drive change. Don't always look for an immediate response to success from that. The process of actually driving change, the system is far too emergent to see a one for one, you put some effort in and you see an output. As you well know, it's not how complex systems work. So hope if it resides at anywhere, it resides in action, trying to do something. The other thing I would say that all of us have agency and my point about this as I often say, identify the areas of our own life where there's a high carbon or unsustainable activity and try and change them.

(01:20:10):

The Great Simplification

And I say, I'm not particularly interested in the emissions and it's not easy for some because they don't have that opportunity, but try and change them. But then the change is less important, the point then is talk about it. Engage in a friendly constructive or vociferous way with the other people around you to start that dialogue and debate. Engage with your councils, with your churches, with your schools, with your places of work, your companies and so forth. And also engage at the national policy level, and we can do that much more easily than we used to be able to because I think social media is opened up a media space for far more people to engage. Unfortunately at the moment it's been significantly dominated by a particular groups of people. Often not all of them, but some of them are quite unpleasant.

(01:20:53):

But I think that it is there for the rest of us to engage with and the more positive people engage and try to engage constructively and courteously. And that doesn't mean someone putting your fingers and your ears to some of the nasty comments that are made, I think that can really help. And be supportive of each other, even if we don't agree with each other, be supportive of us, be supportive of others who are trying to get their voices heard in a cogent, thoughtful, compassionate, decent way. So we support each other and trying to change the framing of our society. And in all of that, I think hope emerges from all those things. Now, whether we succeed or not, we don't know. And this is my sort of thing on this, we don't know whether we'll succeed, the chances don't look very good but then we absolutely can guarantee we won't succeed if we don't try.

(01:21:38):

So trying, action is really what we need and quite what colors the action I think is personal to you, your community, your local circumstances. So I don't think it's appropriate for someone like me to say, you should do this or you should do that.

Nate Hagens (01:21:51):

And how would you expand that advice to a young human, 15 to 25 years old listening to this understanding of the difficulty of the climate and economic and other scenarios, what sort of advice do you have for young humans?

Kevin Anderson (01:22:07):

The Great Simplification

Well, as an old older human, but it doesn't feel very long ago that I was a young human. I think I would say engage in the system in however the systems are around you. As constructively and pushing you as hard as you can, but also push against the system often is necessary. And the voices of young and the younger people and the energy that they have and the diamond is, and they have in their imagination. As we get older, we get more and more locked into status quo. We like to call it wisdom and all that other sort of language we use, patronizing sort of language we use as older people. Well, actually what we need is more innovative ways of thinking. And on average, that resides more in the younger generation. So stand up for what you think is important, make good strong cogent arguments where you reasonably can.

(01:22:56):

And that may sometimes mean that you have to put your body in the line of things. So certainly in democracies I think that's one good thing we still have. I know some of our governments are trying to curtail that with laws and so forth, but by and large us and our families and friends aren't killed if we stand up physically. And I think that what we've seen with some of the younger people and then the other generations joining them in some of the protest movements has been really important and successful social change has required protest throughout history. And history tells us that it will be an absolutely key part, it's not the only part but absolute key part of bringing about rapid social change to make a fairer low carbon and sustainable progressive world to live in.

(01:23:39):

And that would be my recommendation for a lot of younger people. But more importantly, I'd say people of my generation need to hear your recommendations because what we've tried has failed. Well, I think sometimes we have to stop and reflect on that we have failed for 30 years so we need other voices. And I'm very happy to hear from others as to what they think we should be doing.

Nate Hagens (01:24:03):

Tomorrow I have this week's podcast, will be a 28 year old Pakistani man who came across my podcast and he shares his opinions, it is quite interesting. Final question, Kevin, if you could wave a magic wand and there was no personal recourse to your

The Great Simplification

decision, what is one thing that you would do to improve human and planetary futures?

Kevin Anderson (01:24:32):

If it was the wand that was a characteristic I could instill in everyone, it would be courage and integrity or honesty, whichever language you want to use. But oddly enough, I think they're so important and undervalued virtues. Yeah, courage and integrity. Or maybe it's the other way around integrity and courage, perhaps that's a better way to put it. I think they don't have to agree with everyone, but people standing up for what they believe and have thought through, which is what I see as integrity and honesty. And then having the courage to stand up for it. And if you were to add a third one to that, it would be some humility.

Nate Hagens (01:25:08):

I totally agree with that. And from what I know of you and this conversation, you are exhibiting both courage and integrity.

Kevin Anderson (01:25:17):

Well thanks very much. Others can make that judgment, I'm sure many other people would disagree with you, but thank you anyway.

Nate Hagens (01:25:22):

Well, like I said at the beginning of this conversation, I'm in a worse mood because of this, because I don't see us going to that draconian, I think carbon is the economy at this point. So my conclusion is that we are not likely to stay below two or even two and a half unless some black swan occurs. But I agree with you, we have to try to save the wonder and the functioning of the natural ecosystems of this world. Because at the end of the day you and I and everyone listening to this show a hundred years from now will no longer be here. But earth and its ecosystems and its species and denizens and web of life still will be. And I think that is the prize, that is the goal but our economic system doesn't account for that now.

Kevin Anderson (01:26:25):

The Great Simplification

We agree. The only thing I would say is that what we do without ever knowing it might end up being that black swan event.

Nate Hagens (01:26:33):

There's emergence and that's why I'm doing this podcast, Kevin, is we don't know what's going to happen and we have to pass the baton of understanding and caring for our situation to more humans, full stop. And hope that something unique and good happens away from the default trajectory. That's my work, that's your work, I think.

Kevin Anderson (01:26:54):

Yes, certainly, yeah. Anyways, it's been very nice to engage with you and thanks for the questions. I always like to find this process as quite cathartic, maybe I'll go away now and think a lot more about bad things in a slightly different way. So thank you.

Nate Hagens (01:27:08):

To be continued Kevin.

(01:27:10):

If you enjoyed or learned from this episode of the Great Simplification, please subscribe to us on your favorite podcast platform and visit thegreatsimplification.com for more information on future releases.