



## David Wallace-Wells sounds the climate alarm

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# **David Wallace-Wells sounds the climate alarm**

**Intro** [00:00:05] Welcome to OECD podcasts, Where Policy Meets People.

**Clara Young** [00:00:11] I'm Clara Young, and I'm very happy to have David Wallace-Wells in the studio with me. David is deputy editor at New York Magazine and author of *The Uninhabitable Earth: Life After Warming*, which was published by Penguin Random House earlier this year. It's a book about what will probably happen to our planet if we don't severely cut and eventually eliminate the carbon emissions that are trapping heat and pushing Earth's temperature up. The IPCC, which is the UN body of leading climate scientists, says this temperature rise must ideally be kept to 1.5 degrees Celsius. And that's a very tall order. It means that in the next 11 years, we have to find a way to cut carbon emissions by half. After that, carbon emissions have to go down to zero by 2050. If not, well, Mr. Wallace-Wells tells us what the different scientific models predict. So thanks for coming in to speak to us, David.

**David Wallace-Wells** [00:01:05] Oh, my pleasure. It's good to be here.

**Clara Young** [00:01:07] So let's begin with the bad news. If Earth's temperature rises past 2 degrees Celsius, say, to three by 2100, what's the best-case scenario?

**David Wallace-Wells** [00:01:18] Best case scenario? Let's start with two degrees. I think practically speaking, that is about the best we can hope for at this point. And at two degrees, science suggests that some of the biggest cities in South Asia and the Middle East would be so hot in summertime that you wouldn't be able to walk around outside without risking heat stroke or death. These are cities that today are home to 10 or 12, 15 million people. And that's one reason why the UN expects that by 2050 we could have as many as 200 million climate refugees. In fact, I think we could have as many as a billion. I think those numbers are a bit high. But even if you take the lower number and divide it in half, it's still 100 times the size of the Syrian refugee crisis that so scrambled European politics. So, we're dealing with some really earth-shattering consequences. The UN thinks that, again, at just two degrees, damages from storms and sea-level rise could grow 100-fold from where they are today. And just north of two degrees, we'd probably be locking in the permanent loss of all the planet's ice sheets, which would take centuries, so we would have time to adjust, but ultimately would produce 80 metres or 250 feet of sea-level rise, which is enough to drown two-thirds of the world's major cities. if we don't get two degrees.

**Clara Young** [00:02:24] And that's just at two degrees.

**David Wallace-Wells** [00:02:27] Yeah, and I think, we're at 1.1 degrees now, which doesn't seem that bad. 1.1 sounds like a small number, but it already puts us entirely outside the window of temperatures that enclose all of human history. So everything that we've ever known as a species: the evolution of the human animal, the development of agriculture, the development of rudimentary civilisation, modern civilisation, industrial civilisation, everything that we know about ourselves as biological creatures, political creatures, cultural creatures, social creatures, all of that is the result of climate conditions that we have already left behind. So I often say it's like we've landed on a new planet with a new climate and we have to figure out what of the civilisation that we've brought with us can survive these new conditions, and what we'll have to revise and reform and discard. Because the warming is going to get considerably more intense from here, almost no matter what we do. I mean, the scientists think that if we globally completely stopped emitting carbon today, we would probably get at least 0.3 and probably 0.4 degrees Celsius of warming

just from the carbon that's already in the atmosphere already, which means that you add that warming to 1.1 degrees we're out now, and we're already at the target 1.5 degrees. And obviously we're not at zero carbon or anytime soon, which means especially given the political obstacles, the economic obstacles, the cultural obstacles, I think about two degrees is the best we can hope for. And that's a level of warming that scientists of the world call catastrophic, and the island nations of the world call genocide. And they're not wrong to do that.

**Clara Young** [00:03:58] Your book began as an article, I think it was in 2017 in New York magazine. How did you work on the article and on the book? Who did you talk to to compile your information?

**David Wallace-Wells** [00:04:10] Well, most of the research was really done through reading rather than interviews. But I still I mean, I talked to, I'm sure, 50 or 60 climate scientists over the last couple of years, both people who are quite sort of pedigreed-status people on the big-picture science. So like Michael Oppenheimer is one of the IPCC lead authors, Michael Mann, who is long time sort of leading climate figure in the U.S. Also people like Katharine Hayhoe and Naomi Oreskes, who have a quite compelling and sort of vivid sense of the big picture. But I also spoke to a lot of people who are working on more particular areas of research. So, I'm particularly interested, actually, in the economic assessments of climate change.

**Clara Young** [00:04:52] That's perfect for us.

**David Wallace-Wells** [00:04:54] You know, 2006, I think it was, the Stern report was the first major accounting of what climate change could do for the economic future of the world. And at the time, it was received by most economists as an alarmist document. But, you know, William Nordhaus was one of the economists who was criticising it for being too complacent. He did work that later won him the Nobel prize last year, and now he—Nordhaus—is being called too complacent by many people who are studying, who are at the kind of forefront, the vanguard of climate economics. So in just a decade, we've gone through not three generations of assessments of economic impacts. And that's sort of true of almost every area of impact you could talk about from heat stress to agriculture to public health. Really, like every few years, there's a total transformation of conventional wisdom. But on the economic side of things, you know, I draw in my book on the work of Solomon Schang and Marshall Burke and Edward Miguel, who have been, you know, making much more large-scale assessments of the impacts of climate change on the economy. And they say that by the end of the century, if we don't change course, we'll be at about four degrees, a little north of four degrees, and that would mean a global GDP, at least 20% smaller than it would be without climate change, and possibly 30% smaller. 30% would be an impact twice as deep as the Great Depression, and it would be permanent. Now, it's important to keep in mind that we're measuring it not against the economy of the present day, but against where we would be without climate change. So presumably the world would still be considerably richer at that point. Nevertheless, that is an enormous amount of economic opportunity that we'd be losing. And they also estimate that at about that point, many of the poorest countries in the world, basically the entire equatorial band of the planet, at four degrees, would lose any hope of economic growth— ever.

**Clara Young** [00:06:35] I mean, already two years ago, we lost 320 billion U.S. dollars, you know, because of climate-related incidents and disasters.

**David Wallace-Wells** [00:06:45] And there's research showing that some of these equatorial countries of the world and the global south have already lost as much as a quarter of their GDP over the past few decades. So, in the West, in places like the U.S., we're starting to think, oh, climate change is just arriving. The last two years have been really vivid summers in the northern hemisphere, they've taught us a lot, the wildfires have taught us, the heat waves have taught us. But obviously these impacts have been hitting other parts of the world intensely now for several decades. And unfortunately, it's the sort of grotesque moral economy of climate change that those parts of the world will always be ahead. They will always be suffering more than those of us in the global north. And how we respond to that is, I think, an enormous open question and a real challenge for the existing international order, which I think will inevitably change quite dramatically with regard to climate change. But I don't know exactly in what direction.

**Clara Young** [00:07:32] Something that's we're already seeing now is that financing tends to go to tackling climate change, but not to adaptation efforts, which is probably more useful for the global south. So that's another way where our optics on climate change are different, depending on if you're a rich country or a not so rich country.

**David Wallace-Wells** [00:07:52] Yeah, and even those economic data points that we were talking about, you know, flooded real estate in Bangladesh doesn't count as much as real estate in Miami Beach because the dollar values are different. So, some of these—I often do think that the economic assessments are our best single metric because they at least aspire to summarise and tabulate all of the impacts. On the other hand, there are these deeply misleading aspects to them, which is that we just simply don't value, not just property, but life in other parts of the world as much as we do in the West. But it's interesting, I was recently talking to Bill Gates about some of these issues. And, you know, he is quite aggressively invested as a for-profit investor in climate mitigation technology. So nuclear power, carbon capture technology, battery storage, several other companies like that. I mean, investing at the scale of like billions of dollars. But his philanthropic work is totally focussed on the adaptation side of things, because of the insight that you just described. You can imagine the market for climate mitigation technology, the market for climate adaptation is much less visible. And as a result, if anybody is going to do it, it will probably have to be, you know, either private philanthropists or the governments of the world basically acting out of the goodness of their heart, which I do think is, you know, it's a sort of a real moral test, which we are already today failing. The Paris Accords established a Green Climate Fund that would allow the richest nations of the world to support and subsidise the adaptation of the developing world in the face of climate change. And some tiny fraction of that money has made it into that fund. But we'll see what the future holds. I think it's quite possible that the dynamics of international relations changed so much and put things like climate reparations actually on the table in ways that would require countries like the US and the UK and the other countries of Western Europe to really at least publicly reckon with the responsibility that we all have for what is effectively the damaged state and future of the developing world. Of course, we're going to be hit too, like climate impacts are coming for all of us, but they're not nearly as intense. And in places like, you know, the EU, the UK and the US, we have many more resources to help us deal with them.

**Clara Young** [00:10:00] You were talking about Bill Gates, his investment in carbon-capture technology, among the other things that he was doing. The IPCC finds that, to keep temperature rise below 1.5 degrees, whether that's feasible or not, we'd have to sharply cut agricultural emissions, decarbonise electricity and other fields, and other things. But they also mention carbon capture. So where is the technology at on this?

**David Wallace-Wells** [00:10:27] Well, it's working. It's still expensive. It's so expensive that it's basically working only at a kind of laboratory scale. But we have machines that can take carbon out of the atmosphere and do a variety of things with it. Some of the technology produces zero carbon fuel, which could theoretically be used to power zero carbon airplanes or that kind of thing that's promising. There's, just sort of turn it into, basically turn it back into coal and bury it underground. But even with the prices falling dramatically over the last few years, it's still much, much more expensive to take carbon out of the atmosphere than it is to avoid putting it there in the first place. But I think this is a really sort of neatly illustrative case study in our faith in technology to save us from some of these impacts, because I often get asked, people often dream, I even find myself dreaming about some magical technology that will solve this problem already. In carbon capture, we have the technology. It is a magical technology. The problem isn't inventing it. It's deploying it. And in the scenarios that you're describing, where the UN, in addition to rapid decarbonisation of all sectors, they also say we need some help from negative emissions through carbon capture. Just some help. It's not the lion's share of the problem. It's just a little bit. I don't know the exact figures, but something like 10 or 20% of the problem would be solved through carbon capture. And just to achieve that amount of carbon reduction in the atmosphere would require a new industry—carbon capture—to be built that is at least twice as big and possibly four times the size of today's oil and gas business, which took a century and a half to build. And I think that really illustrates some of our poor thinking on this, where we think, if a technology exists in a laboratory, it's just a snap of the fingers and then it can be deployed at scale. But these are incredible logistical challenges, political challenges, dealing with NIMBYism: Who has to deal with the buried coal? Where are these plants? What environments are degraded to build them? And also capital requirements, they're expensive to build. Who's going to be funding for them? Who's going to be paying for them to be operated? At the moment, there's no real market for captured carbon, so who knows who would be paying for it. And that same pattern holds with nearly every form of solution. You know, there's a sort of a natural technology that does a lot of what carbon capture does, which is plant life, trees in particular, absorb carbon, turn it into oxygen. But to help us stay below two degrees of warming, safely below two degrees of warming, the UN says that we would need to reforest two thirds of the world's arable land, which is just a scale that is impossible to achieve. They also say, in addition, that we would need to open new nuclear plants, perhaps as often as one a day. And we know we're actually moving in the wrong direction on nuclear. We're closing nuclear plants. Now, my own perspective on nuclear looking forward is that at the moment, new renewable is considerably cheaper than new nuclear. So, I don't think it actually makes sense to invest so much in new nuclear technology. But the fact that we're retiring plants before they've run their course means that renewables have to expand even more dramatically than they've expanded. And that's going to be really hard.

**Clara Young** [00:13:24] Well, actually, since investments are going in the opposite direction. In 2018 they went down and energy related carbon emissions went up by 1.7% in the same year.

**David Wallace-Wells** [00:13:35] I think the public has the sense that we're moving in the right direction, but not fast enough. But no, we're still moving in the wrong direction by the only metric that matters, which is carbon emissions. And last year was a particularly perverse example because one of the main drivers of that additional, of that little rise, was that more people were using air conditioning because of all the extreme heat that we were dealing with. So, you know, we're at risk of falling into some real traps where in order to adapt to the new world, the climate change is bringing, we rely on more energy production, which at the moment at least, requires considerably more emissions.

**Clara Young** [00:14:07] Let's look at California, though. I mean, that may be a silver lining in very dark clouds. California cut its greenhouse gas emissions below its 1990 emissions level, four years ahead of

schedule in 2016. It also brought its pollution down 13% from what it was in 2004, and it grew its economy 26%. So especially the last point about growing the economy, it's encouraging—perhaps an argument to the naysayers who say, well, renewables and all that, it's just going to cut into our bottom line.

**David Wallace-Wells** [00:14:39] I think that there is a very powerful new economic conventional wisdom that says that we will all be better off through faster action than we would be through slower action. That really wasn't the case just a few years ago. And I think it is one reason why we're starting to see policy and politics shifting on this issue. I mean, another reason is the huge protest movements which have unfolded, which I'm also very grateful to see, and also the sort of teaching tool of extreme weather. But I think for a long time, most leaders, especially in the West, were really constrained by the fact that all of their economic advisors said it simply wasn't worth it to combat climate change. And that position has really changed. So much so that even the government of Indonesia, which is a representative case study of the developing world—in the last two decades, they've doubled their per capita income, halved their poverty rate, but done so like a lot of other countries in the developing world by industrializing, so they've doubled their emissions as well. They say that they can cut their emissions in half by 2030, which would put them ahead of their commitments under the Paris Accords and still grow at 6% per year, which is faster than the 5% per year they've grown over these last two decades when they've doubled their income. So I think this new economic thinking is beginning to shape policy approaches. It's, you know, given the UN timeline that we have to cut in half our emissions by 2030, I think it's not happening fast enough, but it is moving things in the right direction. The perverse flipside of the California example is that the wildfires we've had in each of the last two years are, you know, it's something that most people don't understand about wildfires. In addition to being like a horrible tragedy of seeing whole communities burned down within a few minutes, you know, fires expanding at the pace of a football field a second. Those trees are also effectively like a piece of coal. When they burn, they release carbon. And the amount of carbon that's been released by the forest fires in 2018 and 2017 were sufficient to completely counteract all of the emissions gains that California had made in those years. And this year, to this point, we've had a quiet fire season, which means that hasn't been the case, but projecting forward, when scientists expect that wildfires will be at least twice as bad and probably four times as bad by mid-century in California, it's going to make it a lot harder to actually, you know, make meaningful emissions progress unless we figure out some way to stop those wildfires. But I did some reporting in California in the spring about fires and, you know, no wildfire powered by Santa Ana winds has ever been stopped by firefighters. The best thing that they can hope for is that the winds change or die down. And this is Cal Fire is a state agency that has a budget of 3.2 billion dollars a year, and they break that budget just about every year.

**Clara Young** [00:17:04] I'm going to end our interview with a very big question. What do you think is the key to our planet being able to make it?

**David Wallace-Wells** [00:17:13] Well, I think we need to keep temperature levels as low as possible. I mean, climate scientists have said to me a lot, I think it's a kind of a common joke they like to tell: oh, the earth will be fine. It's the humans who may not be. In general, I think that the farther we get north of two degrees, the harder and harder it'll be to adapt. And I have an incredible faith in human adaptation and resilience. We are an incredibly resilient species. Our civilisation is quite resilient. I don't think that civilisation is going to collapse at some of these temperature levels. But the question is what kind of civilisation will it be? What kind of values will it have? How much suffering will it contain? And, you know, just two degrees, as scientists say, 150 million additional people will die from air pollution. 150 million, that's 25 holocausts. And we're probably going to be living in that world in relatively short order. For me, like the main policy lever is just ending—or the first policy lever, I should say—is just ending fossil fuel

subsidies. The IMF says that globally we're subsidising that business 5.3 trillion dollars a year. That estimate is a little misleading because it accounts for not just direct subsidies, but also the fact that the price of carbon doesn't reflect the environmental impact. Nevertheless, if we directed, academics say, somewhere between 10 and 20% of that total to renewables, it would force an immediate transition away from dirty energy into clean energy. I think we're going to need every tool we have deployed, as much, you know, as broadly as we can, as quickly as we can. So that means decarbonising the power sector, but also rebuilding the electric grid. Having electric vehicles, but also inventing new planes. Deploying regenerative agriculture, but also developing lab-grown meat. You know, every single sector requires a different kind of innovation. If cement were a country, it would be the world's third biggest emitter. And China is now pouring as much of it every three years as the U.S. poured in the entire 20th century. So we're going to have to figure out a whole new way to build infrastructure are going to have to retrofit literally all the world's buildings. Well, we have to do is genuinely reorient our entire civilisation around the principle of protecting the planet's climate rather than narrowly the matter of economic growth. Now, I think we can do that and still secure a future that features economic growth, but it can't be pursued above all else with no concern at all for the environment. Otherwise it will become, you know, not entirely uninhabitable—that is a sort of like burst of hyperbole in my title—but really inhospitable for much of the world. And unfortunately, those people who will suffer most are those who are already in the worst position to deal with suffering and are already struggling with many more challenges than any moral person would want to ask them to deal with. This is a moral challenge.

**Clara Young** [00:19:51] We have our work cut out for us. Thanks for talking to us, David.

**David Wallace Wells** [00:19:54] Thanks for having me in.

**Clara Young** [00:19:56] And thanks for listening to OECD podcasts. I'm Claire Young. To find out more about what we've been talking about, read David Wallace-Wells' book, *The Uninhabitable Earth: Life After Warming*. And the OECD's latest report, *Climate Change Mitigation Through a Well-Being Lens*.

**Outro** [00:20:14] To listen to other OECD podcasts, find us on iTunes, Spotify, Google podcast and [soundcloud.com/OECD](https://soundcloud.com/OECD).