In Conversation: Tipping Point series

Facilitated by Meri Fatin

A call to climate action: In conversation with Bill Hare

Intro

Welcome to Tipping Point, a conversation series and podcast curated by the Western Australian Museum Boola Bardip. Join us as we discuss the complex realities of climate change in our region with leading Western Australian thinkers. Tipping Point is recorded on Whadjuk Nyoongar boodja. The Western Australian Museum acknowledges and respects the Traditional Owners of their ancestral lands, waters and skies.

Panel

**Meri Fatin:** Thank you everyone so much for being here tonight. Especially with this one rainy day that we're getting this week, you’ve showed up even though it's a little bit brisk outside. And thank you so much to WA Museum Boola Bardip for hosting us this evening. Dr Bill Hare is a physicist, a director of the Berlin-based but global Climate Analytics, adjunct professor at the School of Engineering at Murdoch [University] and an active climate scientist born, raised and educated in Western Australia. Bill has attended every single annual global climate change summit, COPs—which means Conference of the Parties—since they began after the 1992 Earth Summit in Rio. He has built a strong reputation for advising poor and developing countries. He was a lead author on the IPCC report that co-won the 2007 Nobel Prize with Al Gore.

Bill writes regularly for the Climate Analytics Blog, for news outlets, for peer reviewed publications, reports, working papers, and maintains an entertaining and prolific presence on Twitter in case you're interested. It's been my pleasure to get to know Bill over the last few months, and I'm really delighted to sit down. Thank you so much, Bill, for being here with us tonight.

**Bill Hare:** Thank you.

**Meri Fatin:** You've been to every COP, as I mentioned in the introduction, since the forming of the United Nations Framework Convention on Climate Change. How are plans going for getting to Glasgow in November?

**Bill Hare:** Well, that’s a good question. There's actually been quite a big discussion in the last few days about whether or not the COP should go ahead because of, obviously, COVID issues, and because a lot of developing countries are worried they won't get adequate representation there. But also, in the last 48 hours both of the major vulnerable country groups, the small island states and least developed countries, have put out a statement saying they want it to go ahead.

They're concerned about representation. And you can imagine, you know, coming from countries that don't have very good health systems, that senior people are very worried about bringing COVID back to their countries. So, there’s a big moral dilemma if we go, because we want to save things, it’s very, very important, but if we go and bring back COVID to our countries, that could be a bad thing. So there's a lot of discussion but there's a gritty determination to get there, I think is the bottom line.

**Meri Fatin:** And that would be because, I mean, they're concerned about representation because people like you might not be able to be there to represent them, I guess, firstly. But secondly, they obviously have a very strong imperative to have this conversation that needs to happen at COP26. Why is COP26 so significant?

**Bill Hare:** Well, in Paris we agreed— In 2015 when the Paris Agreement was adopted, it was agreed that by last year countries would bring forward increased ambition. We knew in Paris that there wasn't enough on the table to get onto the Paris Agreement 1.5 degree limit so, there was an entire IPCC report set up to do that, and to provide data for that, the 1.5, in a special report. Because of COVID, the timetable slipped by year. So, this is a deadline, the global moment where countries are meant to step up and make the next big commitment on reductions for 2030. That's what it's all about. It's not just about mitigation. We're also looking for a lot of increase in climate finance, which would then help poorer countries reduce emissions and adapt to the inevitable changes. Also the so-called Paris Agreement rulebook—how is the Paris Agreement going to be implemented?—is a critical problem to resolve in Glasgow.

**Meri Fain:** And is it your sense that if COP26 doesn't go ahead face-to-face, that it won't be as impactful as it would be— That it won't be as impactful if it happens online as it would be face-to-face?

**Bill Hare:** You know, it's a good question. I think in COVID, we've learned to do things on Zoom, but I think we've also learned that some things don't work on Zoom very well, and particularly where people need to negotiate face-to-face. Negotiators need to trust each other. They need safe spaces where they can have conversations that maybe others aren't watching in order to reach deals between governments. And without that sort of face-to-face opportunity to actually get past established national positions and find a common ground, then there's a general feeling that the negotiation just won't work. It will be a theatre.

You always see theatre at the Conference of the Parties. You see grand positioning and so on, but then miraculously, in the last 24 or 48 hours, stuff happens and you get a deal, right? And that's because stuff happens face-to-face between negotiators that have worked together for a long time, have a basic level of personal trust and are able to meet and agree how they navigate around their national positions to reach the common good. And that's why we need face-to-face meetings like this.

**Meri Faton:** Tell us more about the theatre.

**Bill Hare:** Oh, well, you know, everyone knows Saudi Arabia will protest that the science is uncertain. “There's absolutely no way we can do it, do anything.” Countries will say, “Look, we just can't move forward now. It's too uncertain. It's too costly and expensive.” Or, “We can't agree these rules because of a lot of sectional concerns.” But in the end, when negotiators get behind closed doors, that's when the theatre begins to stop.

No, we wouldn't have got the Paris Agreement without a lot of very intensive backroom negotiation that went on and often with very high-level ministers, even heads of government, present in order to be able to broker those deals. And in those meetings, if you're seeing theatre, you're not making progress. You have a problem. But if people are really getting down and wrestling with their own governance problems and positions to find common ground, then you're making progress and there's no theatre.

**Meri Fatin:** What's it like for you showing up at a COP, having been at every single one of them? Is it like just catching up with a bunch of old mates?

**Bill Hare:** It can be. There's obviously a dimension of that. There is a collection of— In the climate space they’re called dinosaurs, people like me that have been around from the beginning. And we jealously guard our pet rocks, of course. But, you know, it is a big community, right? And you get to know people from literally all the countries on the Earth, and so you have, you know, those kind of friendships that you build up, so that's a great experience.

But there's also a kind of a soap opera-ish feeling. “I've been there before. I've seen this. Do I have to watch it again?” Feeling, you know, that always in the second week of these Conference of the Parties, when positions get very kind of polarised and the press will panic, it's going to be a mess. You wonder, “Why do I have to be here and watch all this happen again?” When you know that we'll get through it and hopefully make progress.

But it's also an enriching experience. I mean, I've worked now long enough to bring in different generations of people into the negotiations, and I think for many, it's really an important experience, whether they're social scientists or lawyers or physical scientists. Actually, you know, some of my early colleagues are now some of the most prominent people in their fields in the science area and that's partly because they were energised by the whole global attempt to solve this problem. They built their science on it, in a way.

**Meri Fatin:** I want to go back to your early step into environmental science. You studied environmental science at Murdoch in the [1970s]. What was the climate science space like at that time?

**Bill Hare:** Well, I guess it was a big— It was very important for me at that time. The whole ecological crisis was— You know, everyone was talking about it. We had big issues in Western Australia, as we do now, with the forest issues going on in Western Australia. So, I found the environmental science program at Murdoch, which of course Peter Newman was leading, absolutely fantastic and very important. I also had a big interest in physics, so doing a double major in physics and environmental science became what I did at Murdoch. And there were plenty of scientists there, like Phil Jennings and Tom Lyons—who’s sadly passed away—who really encouraged, you know, students to look broadly at these problems and indeed look at—actually not knowing then, but—the whole field of earth system science was just beginning.

So, as a student interested in in all aspects of the system, one started to get into the space of, how do you model the climate? How does it work? What are the feedbacks? And then, of course, through the environmental science program where, already from what we're being taught then— This is in the late 70s. It was a big problem and energy and carbon dioxide was at the heart of it. So, putting that all together was quite an unusual and unique learning experience at Murdoch at that time.

**Meri Fatin:** And that experience also brought out the advocate slash activist in you as well, particularly around forests.

**Bill Hare:** Yeah, look, not just me. I think if you look back at the students who went through those years, we have a number of parliamentarians, from the Greens for example, and elsewhere, or people who are now in senior positions in institutions in Perth, who have carried that passion with them. I won't name them because I don't want to embarrass them. But, you know, it was really a very big and formative process that you see now reflected in many different ways.

**Meri Fatin:** Was climate science controversial at that time when you first started studying it? When do you recall it becoming so?

**Bill Hare:** You know, climate science wasn't really controversial then. It was physics and people were just beginning to work out how to model it and calculate the effects of it, so it wasn't really controversial. I think the first time I really registered climate science as becoming controversial in a political sense was during the negotiation of the Framework Convention on Climate Change and there I was embedded in the Australian Government delegation supporting those negotiations. And there in that space we had the United States fossil fuel industry, then under an umbrella organisation called the Global Climate Coalition. And there I saw, for the first time, serious attempts to undermine climate science.

Of course, there were state sponsors behind that. We had the Saudi Arabians and others who prominently sought to question everything. You could see this very much in the first IPCC assessment, which was concluded in 1990 in Sweden and that was an appalling experience because you saw the fossil fuel lobby running rampant in the margins of these inter-governmental negotiations, Saudi Arabia, other difficult countries. That was the first time that I really realised this is going to be very difficult politically.

**Meri Fatin:** And did you think it would be lastingly so in the way that it has been?

**Bill Hare:** No, I didn't. And I think many who first witnessed the attacks on climate science—which actually first emerged in the United States actually and came here only a little bit later— were thinking, well, maybe this will go away. And of course, as scientists, we worked with, you know, media, New York Times, etcectera to try and unpack all of the kind of crap that was coming up from this area. What we know now is that this was a massive well-funded campaign sponsored by companies like Exxon, Chevron, Shell, BP, and so on and so forth. And people have written books about it. Massive amounts of information have leaked out of the company. At that time, of course, we didn't have an awareness that there was this, you know, huge amount of resources going into undermining climate science.

Of course we saw the symptoms in the negotiations, very difficult. Trying to get an IPCC report adopted was very difficult. Dealing with the media, increasingly crazy questions about very obvious physical issues were a symptom of that. And it became obvious, I think, by— I would say it became really clear, when George Bush rejected the Kyoto Protocol in March of 2001, just how damaging the fossil fuel interests had been.

**Meri Farin:** Tell me the order of things then. Was it the first IPCC report that then preceded the formation of the UNFCCC?

**Bill Hare:** Yes, the IPCC was set up in 1988, recognising that there had to be a process by which scientists could talk to governments and agree to common language, and governance could have a common language. In other words, a boundary around the way in which they could talk about it. And that fed into another process going on in the scientific community, which was looking at the International Geosphere-Biosphere Programme which was beginning to look at human-caused climate change. So, very seminal works in the mid-eighties, which began to say we could no longer assume that natural variability will dominate our climate system. We are changing it and it's going to be serious.

So, that led to a process, including the second World Climate Conference in Geneva in 1990, which used the IPCC assessment report to say now we need to have an international multilateral agreement on climate change. That led the UN General Assembly, at the end of 1990 in December, to decide to negotiate this as a matter of urgency essentially built on the will of the scientific community to bring the whole problem to the attention of policymakers globally.

**Meri Fatin:** And meanwhile, what was your actual job at that time?

**Bill Hare:** Well, then I was working for the Australian Conservation Foundation in Melbourne, actually, as the national campaign director, the first one. In that context I was very much engaged with forest issues; Kakadu, South West Tasmania, World Heritage. All that kind of stuff was in the bailiwick of the ICAC campaigns. But I also was following the stratospheric ozone depletion issue. Scientists at the CSIRO, whom I'd met due to part of my work at Murdoch, had made me aware of what was going on, on stratospheric ozone depletion. Fed me mountainous documents to read and digest. I got to know people then in the international community working on this, like Bob Watson, then Chair of the NASA Ozone Trends Panel, as it was then, and became aware that we had a serious issue with stratospheric ozone.

So, the Australian Conservation Foundation engaged very heavily with that, and led a lot of the charge here in Australia on getting the Federal Government then to phase out our chlorofluorocarbons and to deal properly with the issue at the international level in the Montreal Protocol and subsequent negotiations. But then—

**Meri Fatin:** Sorry, go ahead. I was just going to ask you, were you able to be an active scientist during that time?

**Bill Hare:** Oh, not really, no. I published several papers, but— I mean, for example, I think the thing that really got me wound up about climate change was, I was asked by CSIRO in the mid ‘80s to prepare a paper on impacts in Australia for their 1987 or ‘88 conference on climate change, which was spearheaded by Graham Pearman, and that really opened my eyes to the problem.

I had been aware of climate change. I’d worked on little models of it, etcetera, etcetera. But I hadn't really rated it as a big issue. Thought, well, this is something down the road. But I realised in that work even then that our natural environment in Australia was very much going to be under pressure. Not just the alpine regions but also our forests in south Western Australia actually. And so already then I think it was evident that we were confronting a really serious issue.

**Meri Fatin:** And when you're one of the few people who understands how critical the issue is, how do you walk around with that in your normal life knowing that everybody else is, you know, blissfully ignorant for the most part?

**Bill Hare:** Well, I guess one just has to get on with stuff and I think I do my best to try and make people aware of the problem. Also, to try and give people that idea and hope that we can do a lot about it, you know. And at times one can feel worse about the situation than at other times. There are things that kind of wake me up in the middle of the night, really worrying about issues that are risks that we confront. But on the other hand, I really always try and look at just how we can solve it, what we can do to, as a society, to reduce emissions and bring the problem under control.

**Meri Fatin:** Now you're surrounded by people who get it and know what you're talking about and appreciate what you're doing. But 20, 30 years ago, when people didn't really understand what it was and you were holding that information on your own, was it worse?

**Bill Hare:** Well, look, I guess I don't quite see it that way. I mean, there's been a big community working on doing something about climate change for a long time. I lived and worked in the European Union for nearly a quarter of a century, actually. So, in that world, you know, a large part of the political system was focused on trying to do something about the climate change problem. May not have gone as fast as it should have done, but that whole community of, you know, scientists, policymakers, NGOs, a rapidly growing renewable energy industry, was focused on how to how to get that action going, what policies were needed, what incentives, etcetera. So for me, it wasn't as though I felt alone. Of course, a lot of my job in that period—I worked for Greenpeace International—was dealing with the fossil fuel industry, and that was definitely a confronting, challenging and mind-changing experience. Really, I've learned a lot of lessons from that.

**Meri Fatin:** And working with Greenpeace is actually how you started to step into your role with more expertise around the island nations. Tell us a little bit more about that.

**Bill Hare:** Well, yeah, when I joined Greenpeace International in 1992, Greenpeace had, through the Nuclear-Free Pacific campaigns and so on, had a big network of contacts in the Caribbean and Pacific that I'd then became part of. And these countries, particularly in the Pacific, were always looking for scientific support. So one tended to work with the lead negotiators in the negotiations, provide analysis support of all kinds and, as it does, you grow your network in a way. And I got to know a lot of people who then became leaders of Pacific Island countries in that process and those friendships go on and they’re very, very important. Not just personally, but also for the planet, because these are the people that are really calling for urgent action and having an impact during that.

**Meri Fatin:** Tell us what they're seeing on the ground where they are.

**Bill Hare:** Well, you know, if you've been going to the Pacific for long enough or if you live there, you can really see things changing, and particularly seriously in the atoll islands. And I find it really confronting to go back to the Marshall Islands or Tuvalu, Kiribati. To see the gradual erosion going on, the damage that’s encroaching on these atoll islands; the problems that you hear about from people with the inability to grow food anymore where they've grown up for centuries; problems with fresh water supply or evidence of very high king tides, as they call over land on sea level rise; that's quite confronting. And on islands with much more topography, you still see a lot of coastal damage and destruction going on, that's gradually affecting people. So, I mean, it's fairly obvious, really.

**Meri Fatin:** Yeah. And does that drive the advocate activist part of you in the sense that it is heartbreaking to see this happen to the homeland of friends?

**Bill Hare:** Well, look, it's one of the issues that is a motivation. Sure. And certainly the friendships I made, you know, not just in the small islands, but also in the least developed countries are a strong motivation to keep at it. But I'm fundamentally concerned about the security of our planet, actually. You know, the most vulnerable countries are the front line, but climate change is coming for the rest of us, basically. And we just have to reflect back a year or two to the incredible disastrous fires we had on the east coast. You look at what's happened in Europe and North America this last six months or so. It's not just going to be a poor world problem. It's going to be a very big problem for all of us.

**Meri Fatin:** I want to go back to the science and to the IPCC just briefly, because, of course, you know, the IPCC purpose was, in a way, to sort of smooth out the bumps of science so that governments could actually use the data that they were bringing forward. But tell me a little bit more about scientific rivalry in this space and about the kind of arguments and the argy-bargy that goes on.

**Bill Hare:** Well, as I was saying to you the other day, you know, science is built on, on in some ways, conflict—that if you don't have an argument, you probably don't have science. So scientists are always looking at different ways of looking at, understanding things. There are different views and perspectives. So, there's always sort of debate within the scientific community about how to understand data. What kind of data to get? How to use it when you've got it? What is the system that you're assuming is behind that data? These are all the issues that scientists will argue about. So, we take one issue: how sensitive is the climate system? You know, if you double CO2, will it warm by 1.5 degrees or 6 degrees? Right? And there are different views in the scientific community about that and the way in which we try and deal with those views so we can present analysis to policymakers is, to have something like the IPCC process, which then brings authors together, who are compelled by virtue of their collegiate spirit more than anything else, to produce a common understanding and to describe their own uncertainties in a report to government.

**Meri Fatin:** And, speaking of collegiate spirit, obviously I think it's worth knowing that people who are involved with the IPCC aren't paid.

**Bill Hare:** I think that's actually a really important thing to understand about the IPCC. The scientists that contribute to it, by and large, do so voluntarily. They are not paid to take part in it. And I personally think that's one of the most important aspects of an IPCC assessment, is that you're not paying people to do an assessment. They're doing it through the love of the science and through their commitment to providing that kind of analysis to government. And, you know, for scientists working on an IPCC assessment, I think it's quite challenging, because often the organisations that pay their day job don't really like them spending so much time on the IPCC. They might say they do, but in the end, it's a big challenge. It's a challenge because you've got families, but you’re away probably six or eight weeks a year on an ordinary course of events when an assessment's underway. So, it's a very big commitment of time and energy to do that.

**Meri Fatin:** So the sixth assessment from Working Group One came out a few weeks ago, and I mean, obviously, by virtue of the way that this works, there wouldn't have been anything particularly new for scientists because it's all, you know, it's a conglomeration of everything that's been brought together over the last few years. But was there anything that leapt out at you in that sixth assessment?

**Bill Hare:** Look, there's quite a lot in that assessment, and there always is. And whenever you read through it, you learn a lot from it, actually, whether you work in the field or not. But one of the biggest issues for me, I guess, is the changed sea level rise assessment. For decades now, I guess, the IPCC struggled with sea level rise. One of the big issues out there is not just the warming of the oceans or expansion of heat or the melting of glaciers, but what happens to the big ice sheets of Antarctica and Greenland. For the first time in my memory, the IPCC has registered there's a serious concern over the disintegration of one or other of the ice sheets. In particular, the West Antarctic ice sheet disintegration is something that means that, if the ice sheet retreats enough, then it will start to collapse no matter what you do in the future; that it becomes unstable and it would lose its ice over centuries, raising sea levels maybe three metres or more quite quickly.

So for the first time, we've seen an IPCC assessment, a registration that sea level rise of one to 1.5 metres by the end of this century, 80 years, can't be eliminated. And this is something that I think many in the scientific community felt the IPCC hasn't done a good job of doing.

So for me, that's important. But, you know, something else very important in this assessment is, it does show that we still have the ability to limit warming to 1.5 degrees. We're on the very edge. But if we can get the reductions that are being called for the Glasgow meeting and we can continue that trajectory towards net zero emissions by mid-century, then we have, as likely not as not, a chance of limiting warming to 1.5 degrees in this century.

**Meri Fatin:** We all want to think that that's a real thing. I listened to an interview between Christiana Figueres and Michael Mann on the day that the IPCC report was released, and he just said one thing that has really stuck in my mind, which was that this assessment is “akin to scientists standing on the rooftops screaming.” And there was a kind of a conversation about, well, if this is scientists screaming, then is it loud enough?

**Bill Hare:** Christiana would, of course, say, it's not loud enough. [laughs] She always does. But yeah, I mean, it's true that this report is very strong, but I know people who've worked on earlier assessments, and I guess we all felt that each one— This was a really big, big message that and subsequently felt governments haven't listened. And I think the big message from this report now is that we've just run out of time to limit warming to the Paris Agreement’s limit. This is the big story for me coming from this report, that this is the last time you will find an IPCC report saying we can limit warming to 1.5 degrees if we really crack on with it. I think the next assessment will probably, if we don't pull the emission reductions of needed in the next decade, the next assessment is going to be basically saying it's lost.

**Meri Fatin:** Which is due when? The next assessment?

**Bill Hare:** That’s a good question. It will probably be around 2027. The IPCC assessment cycles are now being more or less clocked to the five-year ambition cycle of the Paris Agreement, so this assessment now is meant to feed in—because there's three more reports to come—to the next global moment in 2025, right? So, all the assessments will be done by 2022, giving governments nominally a few years to get their act together to revisit this at another global moment in 2025.

**Meri Fatin:** Let's talk about governments, and I'm particularly interested in international influence. I think it's terribly concerning to most Australian citizens that we are considered the laggards that we are in this space. But I'm interested in what you can say about what diplomatic pressure can be applied to the Australian Government or is being applied to the Australian Government to guide or force them in the right direction, that we might be reassured to know?

**Bill Hare:** Well, we have an unusual set of circumstances this year in that both the United Kingdom has ambitions to pull off a lot of change in Glasgow; the Americans have engaged very solidly; and both countries are putting a lot of diplomatic pressure on Australia. An unusual amount. Australia is a country that's difficult to influence by diplomatic pressure. It has to be— There has to be something really serious, in my observation, for conservative Australian governments to respond to the pressure that they're under. I think there will be some movement from the Morrison Government. I think they will probably move towards net zero in a firmer way and I also think that they will move to upgrade their 2030 target by a number of percentage points. It’s presently 26-28% reduction. I'm just speculating that they will come up with something a bit north of 30 to make it look like they've done something. I think the Americans have already communicated to the Morrison Government that is unsatisfactory, but you can imagine that they would probably try and get away with that here domestically. That is a response to pressure.

The pressure that's really going to matter for Australia, I think, is going to be the economic pressure, actually, and there’s several different dimensions to that. I'm sure people have heard about the European Union’s border tax adjustment mechanisms, CBAM. That's coming, and it’s not just going to come in the European Union. The Canadians, the Americans, the Japanese and, on a slightly different time scale, the Chinese are thinking about that as well. Right? That is seriously worrying the Morrison Government behind the scenes. They are really, really concerned about that.

Another thing is, they’re also seeing bond prices going up for Australia as a consequence of the financial sector beginning to factor in its carbon into the country’s carbon exposure. I'm also informed that is also seriously worrying the Australian Government. So, I think there’s a variety of pressures there that will move the Government to make some steps, but I don't believe they're going to be sufficient.

**Meri Fatin:** I saw a comment from Ktherine Murphy from The Guardian today saying that Australia is really happy to be the deputy sheriff to the US on practically everything except this issue. I’ve thought about the fact that just before the Biden summit, John Kerry went for a visit to China, and I'm wondering if we might be due for a visit from John Kerry. Do you think that would have any impact?

**Bill Hare:** Yeah, it could have. We could be due for a visit from some others as well, high up in the US administration. So, yes, that sort of pressure would definitely be in the pipeline. Well, there’s a trade off here. You know, would someone of Kerry seniority, or Biden, for example, really put public pressure on a government knowing that they wouldn't react? I think the Americans are juggling with that question right now.

**Bill Hare:** You told me a really good story about the success of diplomacy with Russia and the Kyoto Protocol. Would you share that story?

**Bill Hare:** When the Bush Administration rejected the Kyoto Protocol, it became a real problem as to how to get the Kyoto Protocol into force because you had to have a certain fraction of global emissions covered by countries in order for it to become international law. And it turned out, the way the numbers stacked up, you had to have Russia. And Putin then was the Prime Minister, not the President of the Russian Federation. So, the Brits got to wondering about how that could be pulled off, what incentives could be given to Russia to do this. And one of the ambassadors—I shouldn't name him publicly—had the idea that, well, if we offered the Russian Federation access to the World Trade Organization, that might be sufficient then for Putin to decide to ratify the Kyoto Protocol.

So then he had this idea of rounding up people. He was in Berlin. He rounded up some of my colleagues in the German government, he rounded up me from Greenpeace and others, and off we went. And in the end, Putin took the bait and they ratified the protocol and got access to the World Trade Organization through a series of diplomatic, persuasive efforts in that direction. That's called issue linkage. [laughs]

**Meri Fatin:** And you don't see that there’s any way that Australia might be enticed by some such thing?

**Bill Hare:** I'm not sure. I haven't thought of anything. [laughs]

**Meri Fatin:** [laughing]Let us know when you do. I want to ask you about setting up climate analytics and about how much demand there has been. I mean, you started in Berlin, didn't you? But now you've got offices all over the world. What’s the demand? What are people asking you for?

**Bill Hare:** Well, climate analytics started up by accident. I was working at the Potsdam Institute for Climate Impact Research, and we got this huge grant, and then it turned out that the Potsdam Institute couldn't swallow it because the German Finance Minister at that time had to get all the money off their desk by December and the constitutional of PIC didn't allow that. So, a not-for-profit was set up that was called Climate Analytics, to manage that. And then, of course, once we started doing stuff then people started to notice and come and ask us to do more. And the organization grew a bit, like, topsy from there. And our growth has been in the places where we’ve had historical connections in the developing world, and in the US.

And that has led to us, you know, with a very talented influx of scientists and so on because there's a lot of interest in working on climate change. So, if you start to do something and you’ve got a profile and it looks a bit edgy, then you have a lot of great scientists wanting to come and work for you. And that means that we've got some really fantastic publications behind us. Some of our colleagues are among the leading figures in the field now. So that’s a very energising thing for people to work with and have, and that’s partly why the organisation has grown so quickly. I think it’s just attracted a lot of really talented people.

**Meri Fatin:** It crossed my mind when I’ve been spending a lot of time wondering about your work, does that mean that you can speak climate change in other languages?

**Bill Hare:** Oh, no, no. I can understand a bit.

**Meri Fatin:** You can understand it. Yeah. But the English is—

**Bill Hare:** English is the mother tongue and working language.I mean, okay, German, I can get by.

**Meri Fatin:** A bit in German. Yeah, yeah. Okay. I want to ask you to paint a picture of— We’re at 1.1 degrees warming at the moment. I want to hear from you how you envisage Perth being at 1.5.

**Bill Hare:** It's going to be a lot hotter. I think that Perth is already experiencing a significant increase in heatwaves and, actually, mortality from heatwaves. So, I think that at 1.5 degrees, Perth is going to be a lot hotter and probably a lot drier than it is now—

**Meri Fatin:** Could— Sorry to interrupt you, but I'm curious about, for example, what happened in the Pacific Northwest where those upper temperatures were way higher— Like, seven or eight degrees higher than what they would normally have expected. Is that something that you could envisage for here as well?

**Bill Hare:** It's a good question, actually. For different reasons. I'm not so sure that we would see such a massive pulse in temperature. It can’t be excluded. The physics of what happened in the Pacific Northwest, and also to some extent in parts of Europe at much higher latitude, are different, actually. We don't have as much soil moisture to lose here as those systems do; and when they lose it, then you get massive spikes in temperature. But certainly, really extreme temperatures here can't be excluded even at 1.5 degrees warming. I'm a bit hampered because I'm not aware of enough modelling being done to really offer a considered view on that here.

**Meri Fatin:** So, is any modelling being commissioned by the WA Government as far as you know?

**Bill Hare:** Oh, not to my knowledge. I mean, there's colleagues who do climate modelling in Western Australia and they've done some really important work, including using high resolution, modern models. Jatin Kala at Murdoch [University], for example, published some very good stuff there, but I think there's a gap. In fact, I'm giving a talk in Manjimup tomorrow on water in the southwest, and one thing I noticed is that a lot of the models that we're using here are quite out of date. So, I wouldn't want to say it's almost third world class, but it does border on big questions. Why are we using third or fourth generation general circulation models when the rest of the world is using the latest, sixth generation, which are much better? So there’s issues here, I think, that need to be looked at to get on top of all these questions.

**Meri Fatin:** I just want to go back to your vision for Perth, because I saw a quote from Tim Flannery—this is from 2014—but he suggested that Perth could be the first ghost metropolis as a result of climate change. And I know that we've done a bit of work on our water issue since then, but is that farfetched?

**Bill Hare:** You know, frankly, I think it is farfetched. I mean, we've coped, in this region, with declining water supply by building desalination plants, right? This is the big thing that we did that stopped a lot of problems from emerging. I think what we are faced with is a potential collapse of our natural environment here. I think that, yes, we can desalinate our water supply. We can build better houses, we can air condition, we can cool. But I think what we’re seeing now and have seen in the last decade, with the emergence of really severe heatwaves, is a die-off of forests, banksia woodlands, and so on. And that is likely to— That pattern is likely to deepen.

And so, I think what’s most at risk here is not our physical ability to live here, but a very rapid change in our natural environment which I would find, and I think most people who live here would find, really quite distressing. And I'm surprised there’s not more discussion about that. I mean, when you look at the work that's been done looking at a collapse of part of the northern jarrah forest, the kind of papers that you read from people who work in— Not my area, but looking at what's happening to our natural environment, it's a really big mess, actually. And not just on land. We've also seen marine heatwaves emerging, which have caused enormous damage to Shark Bay, Ningaloo Coast, and along the south coast have caused the loss of the kelp forests and so on. And these are leading to very profound changes, and that seems to be not something that’s discussed much here. And for those of you who live on the coast, I'm sure you’re observing what’s going on, on the coast as well. We're going to lose a lot of our beach assets, as well, quickly.

**Meri Fatin:** Well, in light of that, it’s probably worth mentioning that today the State Government announced the $750 million Climate Action Fund, which includes the $350 million for expansion of softwood plantation estate, which then harks back to the announcement from the previous day about the cessation of native forest logging. Is that enough? Are you excited by it? What’s your sense?

**Bill Hare:** Well, look, I think the announcement of the cessation of the forest logging, was a massive announcement, actually. I think it’s, in some senses, forty years overdue and I think it’s well beyond time that native forest logging stopped. I think that that’s a major achievement. It won’t be without its costs, of course, but I think that’s really impressive.

On the climate announcement, I haven't had time to really look into the details. A number of the announcements in some ways have been made before. But I think we need to look, you know, in a bit more detail at that. What is striking, though, is that Western Australia doesn't have any policies in this area. So, I would want to view this announcement positively as a down payment on actually fixing that problem. It really is only the start of doing something about the issue, and that’s what I would want to engage with.

**Meri Fatin:** Well, speaking of policy then: you have very clear experience in translating the science into policy, so I'm interested to hear from you then— Is it as complicated and as necessarily long-term as it looks to be in Western Australia, or could it be quite quickly sorted out if only the will and the initiative was there?

**Bill Hare:** You know, it’s a good question. I mean, one thing that strikes one about Australia, having worked in Europe for 25 years, is just how dynamic the place is. The dynamism is at so many different levels. You know, you talk with the engineers and firms here and there’s just an energy to do stuff that you don’t really find in Europe as much, actually. So, there’s that social dynamism, that energy to do and to solve the problems. Economically we should be able to make the transition very quickly. We have, you know, massive renewable energy resources that are very, very cheap. People from the European renewable energy industry come here and think, oh my God, I can't believe this. We can do stuff so cheaply here. So, yeah, that is a major economic opportunity, and it also means that a large part of the transition can go quickly.

If you're talking about the power sector, other areas where we would need to reduce emissions and change from fossil fuel to renewables are going to take longer. But we’re also positioned well for that because we can produce renewable hydrogen probably cheaper than nearly any other place. I don't want to be quoted on that, but if you look at the numbers, it looks good and we would have the opportunity to do those transitions faster than others and, if we're smart about it, to capture the learning from that, so we make markets for that.

We also have a lot of the raw materials required for the clean energy transition, whether it’s lithium, that everyone knows about, or metals I can hardly name, what you need for wind turbines. We have it all here. And of course, we need to do that sustainably and without destroying our own environment. The bigger issue here is more of a political mindset. I think that our political leaders here are very much obsessed with the gas industry, an obsession that's really hard to explain if you look at the numbers, but I think that's getting in the way of really doing some big things here.

**Meri Fatin:** And do you have any sense of—I mean, there seem to be a lot of explanations that we have as to why this is the case—but any sense of what could move the dial, in this sense? Because I have the sense that there’s a lot of step-up in business and industry and in the community now. There's a lot of sense of agency. But what it is that thing that will move government to actually, you know, start speaking about climate action. You know, legislating properly and doing all the things that we want to see them do. Do you have any sense of what that thing is?

**Bill Hare:** You know, I don't. I wish I did. It's very hard to understand just what will cause the McGowan Government to suddenly look at the world differently when it comes to gas development. I mean, you can understand the dilemma. They've got this massive LNG export industry and some people are saying that under the Paris Agreement, that doesn't have much of a future. And others who have all the money and so on are saying, “Oh, don't worry about that at all, it's all good. The Japanese won't really do what they're saying and the Koreans won't really do what they're saying. And by the way, China isn't really doing what it's saying anyway.” I mean, I was on gas industry talks this morning so I heard all this. But I'm just saying that, you know, they're hearing those messages and they're not looking at the strategic risks the State faces if indeed the countries I’ve just mentioned—which account for, let's say, roughly 80% of our LNG exports—actually do what they say they're going to do. And I would say the evidence points to that.

That means that the LNG exports will peak in the next decade, five years or so, and drop by half in 20 years. This is the reference case I think the State’s facing, and if you accept that as the new reference case then you ask the question, well, how do we dig out of this? And the answer is, will you get off your butt and you start looking at how to grow the markets for renewable hydrogen from this state before Qatar does it first, or the Emirates do it first, which is what they’re doing.

**Meri Fatin:** Bill, before we wrap up this evening, I just want to ask you: when you sat down in conversation with me at the Race to Zero event that we had in March you said that, at that time, you had not been able to, in the four years that you had been back in Western Australia, that you had been unable to secure a conversation with the Minister. Is that correct?

**Bill Hare:** That was correct at that time, but subsequently I have met Amber-Jade [Sanderson], the Minister, and I think she's got a lot of potential and I'm hoping to keep talking with her. And I think that the forest announcements come out of her portfolio. This announcement— I haven't assessed it, but it’s definitely a positive signal. With an activist minister pushing issues a lot can be done. If you’re looking at contemporary Australia, look to New South Wales, look what Matt Kean is doing over there, putting billions into renewable energy zones and so on. An active minister who's got the talent, got drive, got guts, can actually push a lot of stuff.

**Meri Fatin:** The only reason that I ask you about that is because I feel that it's about time that we actually acknowledge the science that we have at our fingertips here in Western Australia. And so, before we wrap up tonight, I wanted to introduce to the audience the other IPCC contributors who are in Western Australia.

Many of you will be familiar with Professor Peter Newman AO. Peter, would you mind standing up? Peter is a Professor of Sustainability at Curtin University and an IPCC coordinating lead author on transport. Thank you, Peter, so much.

[Applause]

Professor Petra Tschakert is Centenary Professor in Rural Development in the Department of Geography and Planning at UWA. She is an IPCC coordinating lead author for impacts, adaptation and vulnerability. Thank you, Petra.

[Applause]

Professor Richard Harper. Where are you, Richard? Right up the back, [laughs] standing at the back. [Applause] Professor Richard Harper is a professor at Murdoch and IPCC lead author in agriculture, forestry and other land uses.

And absent is Dr Jatin Kala, who is a lecturer in environmental science at Murdoch University and an IPCC lead author on the special report for 1.5 degrees.

So I think it's worth knowing the quality that we have at our fingertips and what our government has at its fingertips, if it so chose to use it.

**Bill Hare:** I think on a per capita basis, West Australia is well overrepresented globally in the IPCC. It’s true, isn't it? Yeah.

**Meri Fatin:** Bill, it's been a real privilege for me getting to know you over the last few months, and I've been able to ask you a dozen mostly fairly stupid questions, and you've been very tolerant of that. So, thank you so much and thank you for your exceptional contributions to this global body of knowledge on climate. Thanks for being with me tonight. Dr Bill Hare.

[Applause]

Outro

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