Chris Turner was born in Moose Jaw, Saskatchewan, where his father, a fighter pilot, was stationed with the Canadian military. Over the course of his childhood he lived in such far flung locations as the Canadian Arctic, US Midwest and Germany. He earned a BA in history from Queen's University in 1996 and a journalism degree from Ryerson in 1998, and after a stint door knocking with Greenpeace, turned to writing.

Chris is an author, speaker and strategist. Much of his work highlights the possibilities that exist for building a more sustainable and liveable world. Chris’ writing career started with an editorial internship with The Shift, a Canadian technology and culture magazine, and his writing has appeared in national and international magazines such as The Walrus, The Globe & Mail, Alberta Views, Canadian Geographic, Utne Reader and Time. To date he has authored five books and been a contributor four times to the Best of Canadian Essays (2009, 2010, 2012, 2013). His writing has earned him countless awards including seven Gold National Magazine Awards, the National Business Book Award and the President’s Medal for General Excellence.

Chris has also applied his knowledge and talents to pursuits beyond writing. In 2012 he ran as a Green Party candidate in Calgary Centre, and co-founded Civic Camp Calgary, a non-partisan public advocacy group that for six years engaged Calgarians in providing input on how to develop a great city for everyone.

Aurora: I wanted to ask you about writing and what is it for you?

Turner: It’s the only thing I’ve ever done, so it’s kind of a second nature now. It took a long time to get used to being a freelancer, and it took a long time to have the discipline to work from home
and actually do the work every day, but now most times it comes as naturally as anything you do every day.

Aurora: Right. And you're interviewing people, is that how you're doing your research?

Turner: Yeah, well it differs with each project. So for the oil sands book, I did all the first-person reporting I could afford: I went to Fort McMurray three times and Fort Chipewyan twice. Went to Central Illinois where a lot of the North American transmission network of oil is, sits in and around Chicago. And one of the symbolic motif things that I'm working through the book is trucks, and the really huge trucks are built in Decatur, Illinois. And the guys who build them have never seen a completed one, because you can't assemble them. Like the dumper, the bed is actually built separately and it's assembled in Fort McMurray and it takes like 12 flat-bed trailer trucks to move all the chunks of a Cat/797 truck because they're huge.

Aurora: I think it's ironic that the American press created a fuss over the dumper truck that the Alberta government brought to the Smithsonian, which is a third of the size of a 797.

Turner: But that whole thing is an interesting study. It's right around the point where the whole conversation was turning, so from Ralph Klein's boys point of view, we're going to build a big truck there and everyone's going to go wow, they're really doing things in Alberta. And some people reacted that way, but the US environmental community was like what the hell?

Aurora: I think the same thing happened with the automated robots on the oil sands tailings ponds to scare the ducks off.

Turner: Well that system actually works, they just hadn't deployed it.

Aurora: I met the guy who maintains that. He came and lived in Athabasca during the fire. We speak Spanish together. He's Latin American, from Mexico, friends with a Guatemalan family who came here 40 or more years ago. He came to work in Fort Mac. There's a big Latin American community that work up there.
**Turner:** In Fort Mac?

**Aurora:** Out in Fort Mac, yeah.

**Turner:** You know the diversity in Fort Mac generally is extraordinary.

**Aurora:** Yeah, it really is. This afternoon at 4:30 there's a movie, a documentary on Fort Mac that followed a number of the young folks who moved to Fort McMurray over about a nine-year period.

**Turner:** I've seen a handful of them. There's one called *Oil Sands Karaoke* that's a little bit soft focussed, but it's kind of charming in that it's very much about the real people there. It's about a karaoke contest in a Fort McMurray bar and it kind of explores how all the people who are in the karaoke contest got into karaoke so hard. And one of them is a female heavy-haul truck driver, the big 797 trucks, that's what she does for her day job. One of them is a cross-dressing First Nation's man, like a 20/22 year old, and basically karaoke gave him the courage to appear in public as a woman for the first time. It's really interesting and you can watch it online. But it's clearly done to kind of humanise the thing at a time when everyone got a sense of it all as a bunch of drunk, rich young men snorting coke and hookers. All of which is there, but it's really a very small part of the community.

**Aurora:** We will come back to your work on Northern Alberta but can you tell us first how did you get from environmental writing that you do now, from your first book which was about the Simpsons and more a cultural analysis?

**Turner:** The Simpsons book was sort of a one-off. If you go way back, I did a summer knocking on doors for Greenpeace. Simply to be able to speak intelligently at the door you get indoctrinated in here's what happening. *Clayoquot Sound* was the big thing at the time, the clear-cutting on Vancouver Island. But everyone talks about everything else all summer anyway, so you kind of get a sense this is what environmental activism is, and these are the issues. Climate change was on everyone's radar but it was like oh that's going to be terrible someday. It wasn't a thing we talked about at the doors.

And then I worked at a magazine called *Shift*, and there was like a handful of us who were sort of really young. It was actually founded by Evan Solomon and an old friend of his, Andy Heintzman, right out of university. That was before Evan was a TV star, that was his thing. And so there was a handful of us there who were very interested in environmental issues. The magazine was focussed on high tech broadly, digital high tech in particular, but we kept saying hey why don't we do stuff about you know environmental technology and green technology? Every now and then we'd sneak something in. I remember the first one we got in, my friend Ian convinced them to do it. It was just a little short item, when this was still a brand new idea, about using used cooking oil to drive across the country. That was one of the first things, it had enough of an alternative culture kind of feel to it but they actually did that.

But I'd already started pitching and doing a little bit of climate change stuff, but I was actually really focussed on the negative side of it - let's talk about how awful it is. And then the Simpsons book kind of just came out of a one-off essay that I had written for *Shift*, about the Simpsons in the last 10 years, and the culture and that kind of thing. But right before I got the contract to write that, I had been pitching the magazine on a four-part series on the problem with climate change and the idea, at that point, was that I would pick basically the four worst places in the world. What are the four most vulnerable places we know? So I wanted to go to Tuvalu; it is one of the Pacific islands that's going to cease to be sometime in the next 50 years. Where else did I want to go? I can't remember now; probably India.

Anyway, I'd convinced them potentially to do it and then the magazine went under, so that all got pushed aside for two years. But I always was headed that way. The big thing was realising that
there was a way to focus on it that wasn't denying the scale of the problem, but that it really did work out: here are solutions, here's what are the opposite of the thing we're talking about.

Aurora: Didn't you also want to show your kids something positive?

Turner: That was initially, yeah. In a practical sense I knew that my daughter, who's now 11, was an infant at the time and knew she and my wife would be coming on the research, and I didn't want to bring them to a bunch of terrible places. But it's worked out well, we get to spend time in Copenhagen and Andalusia.

Aurora: No sure if you remember the first time I invited you to one of my classes to talk about *The Geography of Hope* that was an interesting day.

The first day of the course, I can't even remember the name of the course now, but Howard Kunstler happened to be in town and he was doing a talk. So what I did was have the class go to Kunstler for *The Geography of Nowhere*, and then come and listen to Chris for his *Geography of Hope*.

Turner: And Kunstler, if you've seen him talk, he's like a kind of a hell fire and brimstone preacher, he's highly entertaining. I was at the Congress for New Urbanism in Palm Beach, Florida in 2008 or 9, it might have been later than that even 2011 or 2012, and he was still doing the same shtick, but he just kept adding new information. Initially he was talking about peak oil; you know there's not going to be enough energy left to power elevators in tall buildings and he continues to talk about that as an eventual thing, but he has to keep backfilling his argument because the Apocalypse he keeps predicting isn't quite happening. Yes, there's terrible things happening, but you know people, society has not collapsed under the weight of the idiocy of suburbia, which was sort of his thing.

But he is an excellent design critic who when he tries to move beyond that has trouble, you know, kind of keeping his argument together. I mean he's written like really kind of dangerously delusional stuff about how after 2008/2009 American cities are all going to devolve into total chaos. Yeah, you can look like, and this is a thing that Chris Hedges does as well. You can look at the absolute worst and you can extrapolate and say oh all of America's going to look like Camden, New Jersey, and as a matter of fact, it's not. Only Camden, New Jersey looks like Camden, New Jersey. And there are others, like Ferguson, Missouri is terrible too. And being Black generally in America is not great. But the idea that there is this metastasizing chaos is not helpful, and it's not supported by evidence at this point. And the thing is this sort of capitalist democratic system with all of its flaws is really good at sort of reforming itself around whatever challenge you throw at it. And critics on that side always seem to ignore that part - this time it's going to collapse under the weight of its own inconsistencies, but it doesn't seem to do that.

Aurora: Can you update us since *Leap*; what's gone on in Germany?

Turner: The German thing has gone in several directions. One is the initial sort of huge investment in making solar panels. The actual companies that industrialised the solar industry, all got undercut by the Chinese. I think there is still some manufacturing, but it's mainly towards next generation materials and whatever else, so that's one thing. But that hasn't slowed down the pace of renewable energy adoption - they are still building out. I mean solar has slowed down a bit, because Merkel's government massively scaled down the feed-in tariff. Under a different government it wouldn't have happened at the pace it did, but that was always part of it, to eventually do that as a sort of a populous cost-cutting thing.
But there are still wind and biomass and offshore wind, all that still happening. And then all the sort of next generation stuff; so Germany continues to be materials manufacturing and developing leaders, the absolute best in insulated windows and all of that they do really well. Urban design, architectural design, and all that stuff they are still as good as anyone at the whole sort of green economy clean-tech, whatever you want to call it. I think they still have the largest share of the global clean-tech market. They are certainly pace setters in terms of technological development, and the Fraunhofer Institute for Solar Energy Systems continues to be the best solar research institute on the planet, etc., so all that continues.

And then you got the one really big thing is that, for political reasons, Fukushima obliged the federal government to shut down the nuclear plants. Basically any government that hadn't done that in Germany would be dead; there would have been mass protest in the streets, and they would have been thrown out. And so, for that reason, German emissions reduction is still declining, but it's slowed because they're using, not a lot more coal, but they continue to rely on a certain amount of coal.

**Aurora:** Right. So Monbiot would say that actually it's increased, right, that's his criticism.

**Turner:** There was a blip increase. I mean there was slightly more coal on their grid than there was five years ago, but less of it is dirty coal and the overall emissions from the coal sector have gone down. And they aren't doing any of the stuff that people have been saying for years they must do, like oh, they're going to have to build 20 new coal plants - none of that ever happened. I think there were two, and they were refurbishments or whatever.

Another thing is that the rest of Europe, like Spain and Portugal continue to do a lot of renewable energy development, the Danes continue to pursue theirs, like everyone's moving forward with stuff. Monbiot's weirdly convinced that without nuclear you can't hit the targets; I don't agree with him, never have.

**Aurora:** Okay. I also think that his criticism in that article in the *Guardian* from 2010, I think, he was against Britain adopting the feed-in-tariff programme, which he saw as just helping the elite early adopters, with some of the technology that now is out of date and so he would argue that it was huge public cost for very little.

**Turner:** Yeah, and I would say there was a huge public cost for very much! For the fact that 300,000 plus people work in that industrial sector, hundreds of thousands of Germans have solar panels on their roofs, and in every single technology sector that is engaged in clean-tech, Germany is in the lead. They have building codes that are better than Leed gold, and, in some cases, better than Leed platinum, and that's across the board in their building codes. I stopped listening to Monbiot because he's very, very good on the climate change side but there's a little chunk of the British left that really hates, has always hated, the feed-in tariff programme. Monbiot's way closer to Germany than I am, he could go and talk to the same people as I've done and we'd hear a very different story from the one he tells.

But he and Mark Lynas and a handful of others, they all deeply believe that in terms of the environment - and to the point where the contrarian environmental argument seems to have overtaken any look at the actual facts – believe that renewable energy has a kind of minor role, it's over-hyped, and Greens need to suck it up and realise that nuclear power is the future. Given that still no-one has ever built a nuclear power plant on time and on budget, ever, anywhere, it's a ridiculous argument on the face of it. I can't remember the name of the French nuclear company which is considered the "oh, those next generation plants" both of them, they've got two that are being built, one in Finland and one somewhere else, and they're both massively over budget. One of them, I think, is thought that it may never actually do the thing it was supposed to.

So you look at that versus the year-to-year plunge in costs in wind, Denmark and a couple of other countries building next generation smart-grids, the huge reduction in cost and improvement in storage technology, and electric vehicles increasingly becoming you know mandated within 10 years in some European countries. I look at all that and I say, why do you look at that and say we're going to have to build nuclear plants, why is that? So, because of that, I figure - I don't know him personally, but Monbiot likes the sort of the Green Jeremiah side of it, like you all wrong and
here's why, and you know you think that you're going to be able to do this and make money at it, and you won't.

**Aurora:** What are you working on now?

**Turner:** I'm working on a book about the oil sands. It feels like a giant bowl of clay that I pound at every day, but other than that it's not a secret.

**Aurora:** What angle?

**Turner:** Basically, it’s a general-interest mainstream book about what it actually is: here's how it came to be, here's the back story, this is the scale of it, this is how it operates, this is what an oil sands mine is and how it works, this is what a Steam Assisted Gravity Drainage (SAG-D) operation is, here's where SAG-D technology came from, how it got developed, and who financed it. This is what Fort McMurray is like as a place, this is how it is connected to Calgary and Edmonton, this is how it's connected to financial centres around the world, and this is how it connects to pipelines. You know so basically it's sort of describing for a general audience this thing we constantly talk about the oil sands, pro or con, this is what it actually it.

And then if there's a take on it, it's that I'm setting it up as the sort of two parallel, or not even parallel, two converging arcs of basically the definition of progress. So there's sort of 20th century progress which is like building things, bringing energy to people, and all that sort of stuff. And then there's 21st Century progress, which is increasingly combat climate change, do good stewardship, and create a sustainable platform for generations going forward. And for reasons that aren't intrinsic, in my opinion, to the oil sands as a thing, those 2.4 million barrels a day are not SINGULARLY different from anything else we do to make and use fossil fuels the world over.

But for a whole bunch of sort of reasons, and I'll sort of trace that arc, it became the first place where we were having this fundamental argument about what we mean by progress and it also winds up telling a bit of the story of how the world was now talking about. It's also looking at here's how, not exclusively, but particularly American activists, seized on a target that they don't understand but that was a very convenient target for what they were trying to do. I'm going to tell the whole story, but the interesting part has been talking to the people who blocked the reversal of the pipeline into the port of South Portland Maine and how it was they came to be anti-oil sands. And the people who are protesting in the Pacific Northwest, these mega-loads, these huge modules (pre-fabricated components of the oil sands plants - the Editors) that go way up the Columbia River into Idaho, and they take things off of a boat and put it on a truck. And then they would take these trucks through these little towns in northern Idaho, and they started, you know, blockading them. So talking to those activists and saying how did this become what you're focussed on and what all of your activist work is now focussed on? Why? My hedge with the book is I'm not going to tell you here's what I think, I'm going to say here's what they think. Here's the argument of the head of technology at Cenovus, and let's be clear on what the battle lines are here.

**Aurora:** There's just a couple of asides, Chris, that you might be interested in. Do you know this *Fossil Capital* book that was making the rounds these days by a Swedish guy named Malm? His understanding of the transition from water to fossil fuels in the textiles industry in the beginning of the Industrial Revolution in England, and I think it's a very good kind of analysis for thinking about what's happening today too. It's just trying unearth why did that transition happen? And the usual story is steam was cheaper, coal and steam was cheaper, and he's arguing no, actually that's not the case, there's something else here. It's academic but also kind of popular book that might be of interest to you. And the other thing, this might also be a bit esoteric, but this guy Bruno Latour is speaking at the conference that a couple of us are at this week at Mount Royal. And his stuff interrogates the idea of modernity and being modern, which I again think is relevant to your streams of thinking. And I (Mike Gismondi) wrote a book with Debra Davidson called *Challenging Legitimacy at the Precipice of Energy Calamity*. I think of the arc of your story, and it's very much the thing that attracted the research to us; we wrote a paper using the photographs from the early days and it was all about progress, it was about the challenge of unlocking oil from the sands.
Turner: I've used as a kind of recurring theme in one part of the book, when Great Canadian Oil Sands had its big launch, the logo totally looks like something out of the Fountainhead. Like it's a great big huge GCOS logo and the slogan running around it was Man Develops his World.

I spent some time in Fort Chipewyan and Fort Chipewyan has become this place where the celebrities go to stand nobly with their First Nations allies and all that sort of stuff, which is a whole other story. Like Neil Young’s Honour the Treaties, for example, they kind of rolled in, and the intention was for it to be a thing about the treaties and Neil Young’s publicity people basically went right now we're about stopping the tar sands, that's what we're going to do. And Allan Adam (the Athabascan-Chipewyan First nation chief) is a savvy-enough guy, he was like it's worth it to stand with Neil Young and let's just not mention the fact we run a $300 million oil sands resources company, we'll just not mention it.

Darren Aronofsky, Chief Allan Adam, Leonardo DiCaprio and Mike Brune of the Sierra Club pose for a photo on Lake Athabasca this past weekend. Darren Aronofsky/TWITTER

Copyright: Fort McMurray.com
So Fort Chip, it's sort of portrayed at this place that, you know, was completely devastated by oil sands development, and there's some truth to that, there is absolutely some impact. But if you kind of look at the historical record, you know the Great Canadian Oil Sands, the first oil sands plant that went into production in 1967, had no immediate discernible impact downstream. It will eventually, but nothing immediately. The big thing in '67 was the Peace River Dam, the Bennett Dam. The Bennett Dam basically stopped water reaching the Athabasca Delta for two years and it ended traditionally fishing and trap-lines and all that. And then a lot of the people who then moved into town to basically, to survive, never went back to the bush. And that was actually the calamitous part of the history of Fort Chipewyan as a community. After that everything else was just you know further deepening a crisis that was created by hydro power, not by oil sands development. I have watched the BC government's three minutes 1960's promotional video for the Bennett Dam and all this, you know, we're furthering progress, making the world better - all that sort of stuff.…. 

Aurora: In the '60s that was the thing. 

Turner: Yeah, the '50s and 60s - that whole era of big dams. 

Aurora: You ran for the Green Party in a Federal bi-election. Why? 

Turner: I thought it was a great thing to be a part of. The actual details of it is we went to Elizabeth May's Stampede breakfast and I'd met Elizabeth a few times before, but my wife never had. So, we go to the Stampede breakfast and it was just after Lee Richardson, the former Conservative MP for Calgary Centre for years and years, stepped down. Because we lived over in Ramsey and I knew that in that riding Greens got like 14%, because people who won't vote Liberal, will vote Green in Alberta. And so we were chatting to Elizabeth. I was very marginally involved in Naheed Nenshi's campaign, so I know some people in politics in town, and I said if you guys get a good candidate, you can do something really great there, let me know. And she had already been thinking, yes, we need someone; you know she was fishing around for someone with name recognition and whatever else. I went to talk to other people and she and my wife got to talking. Elizabeth suggested would I do it, and then I had to go away for three days and then when I came back, a whole bunch of people from the Mayor's campaign had said if you're doing it, we're in. 
I thought that it was a crazy long shot but if you talked to hard number people in politics, they could lay out a map and say it's a real long shot, but there is a way for you to actually win this; it's not totally, for the good of the party or to make a stand, you could actually win. And basically the only thing that didn't happen in our favour was the Liberal candidate was strong; if it had been a much weaker Liberal candidate we probably would have, at least seriously challenged, if not won. We actually reduced the Conservative support to what we knew was almost as low as it can go. Like an inanimate object could have gotten nearly that much of the vote - it was 37% or whatever. So for me the idea was in a bi-election you can do a crazy thing. I have not always wanted to be an elected official or anything like that but it was more like if we pulled this off, it would be so much bigger than having won one bi-election, you would have had a sitting Calgary MP in the Green Party for the last three years of Harper's mandate.

The risk, to be honest, was because it was a bi-election there's nothing else going on, so the Party's resources were not drained elsewhere and I had all these people from Nenshi’s campaign who were already organised, so it actually wasn't that high-risk either. It was like we already have a little bit of a platform, a bit of a machine built, so do you want to drive it? Sure! I've never done that but I'll try.

So it was a really inspiring thing to be a part of; I do think it laid some of the groundwork for some of the stuff that then happened in 2015. It should have been two campaigns, but the one that won I think we played a bit of a role in that, but it was just a one-time thing to be a part of. I've resisted most efforts to keep me engaged by the Green Party federally, and I wish them well and all that, but my skillset is not in running a grassroots, outside party in a federal context. There are other people who are better at that than me. And the party right now is actually kind of verging on civil war, so I'm not sorry it's not my job.

**Aurora:** We've started doing some research on community energy and we're wondering the potential of it in the province and hoping, I think like many people, about whether the new legislation is going to either provide some assistance or encouragement for it.

**Turner:** I saw nothing so far.

**Aurora:** I haven't seen anything either except this Energy Efficiency Panel has one or two sentences that said they must support community energy, so I just wondered what your hopes were for it?

**Turner:** Well I don't know about hopes for it. My sense, and I'm fairly far removed from it; I haven't been to any of the open houses or any of that sort of thing. The one piece of legislation I saw, and the thing that struck me was five megawatt minimum projects which discounts all but wind, and even then that's a pretty large wind project. It's not huge. If you get more than two modern turbines you're over the five megawatt, but it's certainly like putting in minimum project scale is one way to say community buy-in is not really high on the priority list to my mind.

I thought that was kind of disappointing really, that was the most surprising part is that they did not have any sort of targeted small scale/community scale anything. That might be brought in another way, but I don't get the sense that there's been a huge amount of thought put into that. I think there's way too many bigger fires to put out, from a government point of view, so this is like we're going to set a long-term target that's ambitious and we're going to roll-out this sort of skeleton of a plan and then we'll figure it out as we go on.

I get the sense that they're deeply wary of the situation that's unfolded in Ontario. Blaming that on community scale projects is ridiculous; one of the biggest things Ontario didn't do was push the community scale stuff. The myth about Ontario is that really, really high rooftop solar rates had anything to do with peoples' energy bills going up; there was so little rooftop solar done in Ontario that it was negligible. The big impact was the Green Energy Act, refurbishing two nuclear power plants both of which have gone over budget and over time, and cancelling $2 billion worth of gas plants for political reasons - that's a bigger chunk of why hydro bills are rising in Ontario. But the mythic thing politically that came out of that was Feed-In Tariffs are terrible economics. Now grant it, the Ontario rate was badly designed.
But my read on that, whether it's right or not, is the little rooftop solar kind of stuff is not going to cut it, we don't want to throw money there, if it's better spent on larger scale wind. To be honest I didn't look at it all that closely, but it did not look well thought out to me.

Aurora: What was the specifics or the character of why it was not well thought out?

Turner: The plan?

Aurora: Yes.

Turner: Because it was just a handful of broad guidelines. It was a giant target and there was nothing in there about we're going to some sort of full audit of what the province's renewable resources look like, figure out what would make the most sense and where the best place to spend it is. There was a little bit about stakeholder type stuff, there was nothing like, about we're going to engage people already working on this stuff, and we're going to look at the rural electrification programmes that are already in place and see if there's an opportunity there. There was no fine detail at all. Now granted I might have missed that because I'm the middle of this whole other book project so I'm not reading things carefully that aren't on that topic, but I didn't see anything that said before we decide how we're going to do this, we're going to look at it more closely.

I've had these conversations with some of the people who were part of the Alberta Climate Change Advisory Panel. You don't have to put a whole ton of it into community energy - half of this power needs to come from small or community scale. It's more that you put that stuff upfront because it gives you political buy-in to do the next wave, and the next wave. Instead, THE biggest lesson from Ontario was if you roll out a thing that all it is is giant wind farms, people will hate it. The way that thing looks designed to me is giant wind farms, that’s totally looks like what it is encouraging.

And is the cheapest, marginal megawatt hour of power in Alberta right now probably large scale wind? Yes. But if all you do is large scale wind, it's going to be hugely unpopular. And in three years it's going to get cancelled by the government that replaces the Notley government, and it will be one more thing that they can use as political clout. So that was my read of it; it felt kind of tone-deaf to me.

Aurora: I attended one of the Alberta Energy Efficiency Advisory Panel sessions and asked the guy leading it to provide me with his definition of community energy. He directed me to a young guy who wrote the Energy Efficiency and Community Energy Systems Discussion document who said he didn’t know how to define community energy, what he wrote in there about community energy was based on the Leach Climate Change Advisory Panel’s report. He then said, I don’t know what the definition should be, you're the expert, you tell me. I responded by indicating to him that I could do that, but they had already set the parameters of the discussion.

Turner: Yeah. Then this is part that doesn't seem all thought out, definitely. As well as this community engagement thing. Like if you look at five megawatt minimum and you had thought it through enough to say, even though we're putting in a five megawatt minimum, we don't just want giant industrial scale wind farms built by companies that have no stake in the community, we want at least a mix, then you would have a provision in there that said even if we haven't figured it all out yet, we will investigate financing tools. For instance, one of the reasons why community scale energy works so well in most of northern Europe is they have really good financial mechanisms set up for a bunch of community projects; you know get 100 people, get them all to put $10,000 in and you can do it, and it's really simple. They have co-ops and the rest of it, most of which pre-dates green energy; those were things that existed in those communities to begin with. We have a lot less of that but we have some; we have co-ops, we have credit unions, and we have the rural electrification associations.

But there's no indication, and maybe there's another way of doing this, but that was the stuff I was hoping to see - and by the way we're not planning on this being kind of a giant top-down process; that looks to me like giant top-down. It did look well thought out. So yeah, it's not surprising to me that at the forum there would be nobody there, you know, even anecdotally speaking, saying here's how community scale stuff might happen, here's what it looks like. You know, I mean for Christ
sake you can get somebody from the Toronto Renewable Energy Co-op who would have been more than happy to have come and made a presentation if anyone had asked them.

**Aurora:** So yesterday they gave 46 million to TransAlta Renewables out of Heritage Fund.

**Turner:** Out of the Heritage Fund?

**Aurora:** Yeah. They released $100 million yesterday out of the Heritage Fund for innovations of different kinds, and $46 million of it, I think, went to TransAlta - it was called TransAlta Renewables. I just saw this.

**Turner:** TransAlta's had renewables investment forever, but they don't develop stuff, they just buy it because it makes good money.

**Aurora:** Right.

**Turner:** I know the guy, one of the wind developers here in Calgary with Greengate Power, and they developed a project, basically got it to construction stage and then TransAlta or Enbridge, whichever one of them it was, as they both do this, comes in and says okay, that looks good, we'll take it from here, we're good at building large stuff and attaching it to grids and all that.

Out of the Heritage Fund, no less, not the carbon tax technology thing?

**Aurora:** No, no, it was like an innovation, taking money to invest in futuristic forward-looking innovation in the province.

**Turner:** That seems odd when they're in a middle of a panel discussion, and - and public engagement.

**Aurora:** I don't know, I'm just telling you what I read in the news today.

**Turner:** In any case, you get the sense that there's a lot more TransAlta in the room than there is community co-op, renewable energy people.

**Aurora:** Well, it wasn't at the public engagement session I attended. There was a real lack of that in that room, but it still was people who very much were interested in what's the technology we want to put in place? Very focussed on that; not focussed on financial, not focussed on community energy. They are entrepreneurs looking for a way to make it big, right. And it just seemed to me like in terms of that techno-shift of logic, that was definitely not there.

**Turner:** Well if what you're saying is true, it should not be surprising. So you had Andrew Leach's Advisory Panel who were really good policy-wonky people who understand climate policy, and putting prices on carbon and that sort of stuff. Nobody in that panel really understands, at a granular level, how renewable energy development has happened over the last 15 years. And then, if that gets pushed down to another level of bureaucracy that also doesn't have any experience, you don't have any expertise in the room. There's nobody saying hey, you know that sounds really good but here are the five pitfalls of that, that every single jurisdiction that has done top-down renewable energy developments has run into, and that sort of thing.

So yeah, which is disappointing, and I never get the sense anything is set in stone yet. There’s lots of people who are building things and I don’t get the sense that they are the people who are being engaged. Maybe they are, I don’t know.

**Aurora:** Part of what we're trying to do on doing this research project is that we're looking at this sustainability transition literature and within it is there's kind of multi-level perspectives. So basically what it is they look at systems changes; you have these niche technologies and people that are trying to make change, you have the regime that's kind of holding the status quo together, and then you have all these landscape pressures, like climate change or global change that's pushing the regime to change. So you have new technologies coming up from below, and you have pressures like climate change coming down from the top, which is forcing some kind of change in this regime. So what we're interested in is following two or three of these niche level
community projects that are trying to make inroads and see how that happens and how successful are they?

**Turner:** Here in Alberta?

**Aurora:** Yeah, here in Alberta.

**Turner:** Yeah, okay.

**Aurora:** …to see if they're successful or how they're successful, and what barriers they run into. How can we actually have change happen like those kinds of things that you see in Europe?

**Turner:** Yeah, it will be interesting to see. I'm actually going to Medicine Hat tomorrow for this Alberta Reads thing; I'm speaking at the Medicine Hat Library and then at the College. But I know the Medicine Hat College has long been a big solar proponent, and I haven't had a chance to check in on them to see where they're at.

**Aurora:** Yeah. Give us a report.

We're really interested also in equity issues related to green technology, and if you're going to talk about at community level, how do you make it so that the people who can least afford to have their bills increase, and typically can least afford to retro-fit their homes, how do we bring them into this equation?

**Turner:** Right. I'm not an advanced enough energy economist to know how you do that at a price level or whatever. Giving them the opportunity to participate in generating their own power is a big way. Which is one reason why the community piece is so big. You know the most obvious at-risk communities with the most to gain from it would be the First Nations. Lots of First Nations already are really keen on generating their own power, so make that easy, make it affordable. In Fort Chipewyan, which is the First Nations community I've spent the most time in over the last year, and I haven't spent a huge amount of time there, but I know that energy prices are quite high and the power source is remote. You would have to probably underwrite it in some way or another, but if you made it a priority, as some small piece of this giant energy budget that you're going to have to put in, that First Nations were given advanced priority on this, you could get people to do renewable energy at home, and have them do assessments. Like what would make sense in Fort Chip? Probably three wind turbines on the north shore of Lake Athabasca and you're done.

And now that could be a Band-owned utility that charges whatever. You took the money out of the Band's own substantial finances - in Fort Chip's case, because they get $300 million a year from the oil sands - and just use that to underwrite the power piece.

So it seems to me that's a solvable problem. Equity stuff is not my strong suit; it's a whole different class of journalism in a lot of ways. But, the technology is way smaller scale and way cheaper buy-in than a central core gas power plant. So it's easier to hand over to people who you want to not to feel trapped in higher energy prices of whatever the situation is going to be. But to do that, you would have to prioritise it, it's not just going to happen.

**Aurora:** What would be the key characteristics of what you see in Denmark and Germany that allowed that to happen? You said that they're already organized, the Co-ops precede this, so they have that - from the organisational level, they can handle it.

**Turner:** It was easy to finance.

**Aurora:** They have government support for the programmes, so it's all pretty integrated and, all of the things that need to happen; there's already the structures there to do it, right?

**Turner:** Yeah. Well the structures we have here have never been used for that before, so you would have to.

**Aurora:** Re-purpose it?
**Turner:** Yeah. I've written about the success of Sault Ste. Marie, which is probably the only community of any size.

There's a handful of First Nations communities as well, that you could look at and say, that the Green Energy Act in Ontario did what it was supposed to do for this one place, and it was Sault Ste. Marie. And why was it Sault Ste. Marie? There's a handful of reasons, but a big one is that it controlled its own grid. They had a grid that pre-dated Ontario Hydro because there was industrial development in Sault Ste. Marie before Ontario was a province. And so you didn't have to go to the bureaucratic remains of Ontario Hydro to get everything done. You could get it pretty much done yourself, you had to get the final permitting approval. I always forget which piece is which, but there's the people who actually run the grid, that's one organisation, and then there's the people who do permitting and development and all that kind of stuff. And the permitting people, I think that's the Ontario Power Authority, hated the feed-in tariff, particularly hated small scale, and would just let the applications pile up.

So Sault Ste. Marie was able to do what it intended. You could go to the local - I think it's steel mill - go to the local steel mills and say we want to use your waste heap for this and that kind of thing, here's the technology and we can just do it. We're going to build the largest solar farm in northern Ontario; they didn't have to get much in the way of permission, they could just do it. Well we're connecting it to our own grid, so you know the regional power companies in, we've got the financing for it, we've got a company to develop it, we're done - we don't have to wait on the bureaucracy.

**Aurora:** It's funny, I think the Mayor of Sault Ste. Marie is going to be here for this QUEST conference in Calgary in the next couple of weeks and he'll be one of the speakers at it.

**Turner:** I don't know if the city was directly involved, although they might have been, but there is a First Nation north of Sault Ste. Marie that has done a fairly large wind farm, that's half-owned by the Band and half-owned by the developer. They're just finishing it right now actually. Which is it, the BluEarth Renewable Company that Marlo Raynolds used to work for? They were the developer on it and then they partnered with the First Nation, and the First Nation will run it. There have been training programmes alongside it, so ideally - I don't know if this is going to happen or not - but ideally the idea was it would become an area of technological expertise that they could then go to other First Nations and say we can partner with you on your wind development and that sort of thing. So that was a good model. It only happened the once, unfortunately. The main thing with - and I've said this a thousand times - the main thing that happened with the Green Energy Act was most people's first experience of it was 100 wind turbines that they had no connection to in their back yard. A subsidiary of a turbine wind developer, usually - most of them were. Because it was easy money for them, they went oh we come in and you give a flat rate.

So the big thing was with the community scale stuff. But other one too is you had governments that were, to greater or lesser degrees, privatising their community stuff. I mean particularly the German government out of the gate wanted community scale because they knew that it would be politically advantageous to have community buy-in.

**Aurora:** Here in Alberta the farmers are a great target for solar energy incentives. They're already doing it and while they might not vote for the NDP in the future, they might mellow their opinions, I don't know. There was an Agriculture Alberta Solar Energy program last year, and it was one that the Tories had started previously, and it's always oversubscribed.

It would be good if the New Democrats helped rural communities, that are struggling, with a broader community energy program, that provided help setting up municipal and village owned solar generation plants as they have in Germany.

Changing gears, do you know much about the free market electric market and how it works?

**Turner:** All this stuff that's going on the power purchase agreements, I have not read closely enough to understand. I mean the basics of it, as far as I know, is the way Alberta's always set energy prices is to go to the people who are going to build the power plants, when they build them,
and say okay what rate will you need over what amount of time, and a range, to be profitable? And that's how they set those rates, and then when the new government came in, they looked at what those old deals were and didn't like them. And so when they went to change them, the people who hold those contracts were like well you can't just change them. That's broad strokes. I don't know the nitty-gritty details. But there's never been much of a free market.

I mean in theory, in Alberta, because it's deregulated, you can start up your own little power company and start doing things, but most of the people who tried that - and I can't remember the name of the company - my next-door neighbour has solar panels, and I think initially he signed up with ENMax or whatever, but then there was this company going around offering like basically a feed-in tariff and so if you sent your energy in whatever technical way to them, instead of to ENMax, they were going to give you money back rather than just rolling it on the meter. Someone filed a complaint and they got shut down. So I can't remember why but there was some technicality that they had you know not anticipated or that was interpreted wrongly. I mean more broadly speaking, people don't understand why their power bills are what they are and they just pay them and so it's very easy to manipulate.

_Aurora:_ It's very complicated to figure out.

_Turner:_ I've spent more time reading about this stuff than most, and when that purchase power agreement thing was in the news, I would read a story about it and feel like I didn't understand half of what was going on. So I can only imagine if you've never even heard of purchase power agreements were how confused you'd be.

_Aurora:_ Thanks Chris for your time. This has been great.

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**Interview conducted September 28, 2016**

**Publications**


*The Geography of Hope: A Tour of the World We Need* (2007)

*The Leap: How to Survive & Thrive in the Sustainable Economy* (2011)

*The War on Science: Muzzled Scientists and Wilful Blindness in Stephen Harper's Canada* (2013)

*How to Breathe Underwater* (2014)


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