

**HARVEY, from page 4**

anywhere.

**E.G.:** *How did you land a "50 percent chance"? Given the stakes, don't we want better odds?*

**H.H.:** We want better odds, and I would rather land at 1.5 degrees than 2 degrees. In an interesting and rather tragic way, one doesn't win on climate change; one reduces losses. There is no specific tipping point. There is a whole series of them, where different natural systems get drastically worse and human suffering increases.

You can't say that this many emissions is going to cause exactly this temperature. But you can say probabilistically, it's most likely to land on 2 degrees. If we wanted a tighter strategy, we would have said 1.7 degrees or 1.5 degrees. Of course we would love that, but 2 degrees would be tough.

**E.G.:** *The carbon cap-and-invest bills the Oregon Legislature has considered in the past, and will likely come up again this next session, would regulate entities emitting 25,000 tons of greenhouse gases per year, excluding forestry and agricultural sectors. Given that Democrats in Oregon now have the governorship and super-majorities in both the House and Senate, do you think Oregon should be pushing for a bolder, more inclusive cap-and-invest policy?*

**H.H.:** I would say yes, but do it step-wise. Get this passed, do a great job of implementing, prove that it doesn't tank the economy, show how much money it pours into efficiency and renewable energy, get more and more industries on your side – all the industries that are under the cap are going to then want other industries to come in because they will feel disadvantaged, even though I don't think they actually will be.

This is a very important bite; it's a big bite politically. I think the impacts will be actually kind of modest, and that allows the next step to be taken.

Climate policy, like any policy, can backfire as well. If one pushes too hard in one direction all at once and you create a counter action, that's not your best strategy. So I think the Clean Energy Jobs bill is a great way to start, but I would think about a successor bill in two years to tack on more.

**E.G.:** *I've heard from some conservative lawmakers, concerns about this raising prices for consumers in rural areas, such as gas prices. And people travel longer distances in rural areas. Is there evidence to support these claims?*

**H.H.:** The thing about a cap-and-trade system is it helps you find the cheapest abatement opportunities wherever they are in the economy, and the way most companies react is by increasing energy efficiency of their own plant and productivity. That tends to increase their competitiveness, not decrease it.

Where it's been done – California is a great example – it's actually been an economic boost rather than a hindrance, and that's important.

For rural areas, it's actually very important that over time, as the truck and car fleet turn over, that they get more and more efficient vehicles because they do drive longer distances, and that's a necessary thing.

Efficiencies we see in today's cars and



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*Hal Harvey, CEO of San Francisco environmental policy firm Energy Innovation, visited Portland to speak at Climate Solutions' annual dinner in November.*

trucks have been driven by good policy. It didn't just happen. The average car in America used to get 13 miles per gallon. And now it's pushing 30. That's a result of good policy, but that's money in the bank for anyone who's driving. And rural economies are no different.

**E.G.:** *Here in Oregon, as the Oregon Global Warming Commission recently pointed out, our transportation emissions are going up, and that's largely because people are not buying as many electric cars as we expected, they're driving less-fuel-efficient cars, longer distances. I was a little surprised to see dietary and behavioral changes in your book listed as a "post-2050" target, when here in Oregon, those behavioral decisions are actually increasing our emissions. Is that something we can really wait 30 years to tackle?*

**H.H.:** There are all kinds of meritorious things one can do that are not featured in the book.

The reason we didn't spend time on behavioral change is because with a limited amount of political capital, you want to do the biggest things first. So there are three votes required to change utility regulations in Oregon, and that covers close to half the carbon in the economy. Both the natural gas and the electricity. But to convince millions of people to eat differently is a much bigger challenge with much less result. So I'm in favor of ethical lives, including reducing meat consumption and buying locally, absolutely. But is it an effective, near-term carbon abatement strategy? No. Again, if you have limited political ability, you need to focus where it makes the biggest difference.

**E.G.:** *One thing we have here in Oregon, that's unique about our state, is our rainforests. Do you think Oregon should be looking more seriously at implementing our forests as a carbon sink, or would it be smarter to try to up wood-product production because it's better for the environment than steel and concrete production?*

**H.H.:** That's a complicated question. I grew up with an environmentalist mother who personally hiked and mapped more than a half-million acres of land and made

wilderness proposals, so it's pretty deep in my heart to preserve natural systems as they are.

I think where you have cultivated, productive, planted, planned forests – not ancient forests – there are responsible forestry opportunities. And it's true that you can displace steel, concrete, aluminum and glass with good wood products.

On the other hand, there's a lot more you can do with steel, concrete and glass and aluminum. You can recycle them. You can substitute design for materials. You can build buildings that last longer and that are more energy efficient. So if we just wholesale swap one material for another and continue to build middling to poor buildings, we're missing the boat altogether.

**E.G.:** *You've said that cap and trade will not work in isolation. What other policies should Oregon be looking at in 2019?*

**H.H.:** The best way to think about this is to think about the four main energy consuming sectors: the (energy) grid, transportation, buildings and industry. And within each of those sectors, there's the best-practice policy or two or three.

Oregon is on the track to having a 90 percent decarbonized grid.

One of the realms that's interesting to me is building codes. Totally boring, but if you build a great building, like the Bullitt Foundation building in Washington (Bullitt Center), it's an extreme example, but it's an asset that will last hundreds of years.

The smartest building code is one that Jerry Brown signed into law when he was the youngest governor in California's history. It had a mechanism that made it get tighter, automatically, every three years. They used the political bandwidth once and produced the gift that keeps on giving.

Now, California buildings use 80 percent less energy than they did at the start of that. And Santa Monica has legislated all new construction use zero-net energy. That's the only policy that's worked really well in buildings, at scale.

In transportation, a net-zero electric vehicle mandate, plus incentives, needs to be bolstered.

Last year, total electric vehicle sales nationally were only about 1 percent of total car sales. So that doesn't get you up the curve very fast. But in the states that have pushed it hard, they're pushing it at 10 percent and better. Norway is at 50 percent.

There is a new realm that I call micro-transit, which is the electric bikes and the electric scooters – those combined with good public transit can be a game-changer because it solves the last-mile problem.

**E.G.:** *Anything we didn't discuss that you want to add?*

**H.H.:** One of the horrifying things about climate change is that the people who cause most suffer least. So I talk about the top 20 countries and focusing our efforts there because they're the ones that cause most the trouble. But if you're rich, you can actually kind of deal with it, right?

We had that hurricane that hit New Orleans. We put \$80 billion into rebuilding New Orleans.

Bangladesh – there's been times half the country's been under water. They don't have that buffer. They don't have the cash to repair that.

There is a study out of Stanford, which is heartbreaking, that says Africa could lose 40 percent of its agricultural productivity by 2040. So you can imagine what that means for a continent with a billion people, many of whom are already malnourished.

So there is a really perverse effect that people need to pay attention to. I think within this society, the same thing happens.

There are a lot of elements, obviously, and with climate change you can push this in any direction you want. But there's a realm of social equity that's pretty profound.

We displace our damage to other times, to other generations and to other countries. The SUV here is damaging the Atlantic rainforest, is causing Thailand to flood, is creating desertification in northern China – but there's no connection. There's no connective tissue. We don't see that. That displacement makes human beings numb to what they're doing.

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