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Changing Climate, Changing Behavior: An Interview with Angus Duncan

Michael Burnham

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In a 2010 report, the Oregon Legislature-created Oregon Global Warming Commission (OGWC) stated "with confidence" that human activities were primarily responsible for a 1.5 degree Fahrenheit increase in 20th century temperatures in the Pacific Northwest. Transportation and electricity were responsible for about 70 percent of Oregon's greenhouse gas emissions during the 2003-2007 period of study, while agriculture, waste, combustion, leakage, and other sources were responsible for the balance of emissions. Metroscape*'s Michael Burnham sat down with OGWC Chairman Angus Duncan recently to discuss the commission's work and how a warming world might affect the metropolitan Portland area economically, socially, and environmentally.*

MB: *In a recent report, the OGWC concluded that a warmer climate will affect Oregon's land and marine environments 'substantially' through the 21st century. The commission's models generally project warmer, wetter winters and hotter, drier summers in the Willamette Valley and other parts west of the Cascade Range in coming decades. Could we expect the same of metropolitan Portland?*

AD: It's an easy question to ask, but it's been a hard question for the climatologists to give us a clear answer to. It's because the models are pretty good and getting better on a global or continental scale. The more you ask them to refine down to a local area, however, it gets harder for them to give you particularly clear answers. What we basically know is that average temperatures will be warmer in the summer and the winter but that there will probably be some significant departures from this. We could get cool, wet spells in the summer; we could get really cold snow spells in the winter. This is one of the reasons why the term 'global warming' could be misleading; what we're really talking about is climate change and

climate uncertainty. On average, however, we're talking about warmer temperatures. We can reasonably expect more precipitation, on average, but probably more of it will come in the winter and less of it will come in the summer than happens today. More of it will come as rain than snow. So even though we'd be getting more precipitation, we'd have less snow pack. That snow pack will probably melt earlier, so we will probably have more flooding in the rivers in the spring than we've had historically. But by late summer and early fall, we would see lower flows and drought. Those are kind of the rough parameters. When people ask me to summarize what we're looking to as far as climate change, I say 'fire and water.' More water but water during different times of the year. And because we'll probably have drier summers, we'll probably have more forest fires than we've had historically.

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MB: *When you're out in the community to discuss the Oregon Global Warming Commission's activities and elicit public feedback, you hear a wide range of views. Some folks want to debate climate science, while others want to debate climate policy alternatives. What do you tell the climate change skeptics?*

AD: What I try to tell the skeptics, usually not with a great amount of success, are two things. One is, if you're sincerely skeptical but you're not a lock-down climate-denier, then what you ought to do is to look at the recommendations that our commission has made and look at the merits of doing these things on their own. The truth is that investments in building energy efficiency, a more energy- and carbon-efficient automobile fleet — those have huge co-benefits aside from fewer greenhouse gases. We were just looking at some analyses yesterday that said, if between now and 2050, we're able to make the kinds of shifts in our light-vehicle fleet that we would need to meet our greenhouse gas goals, that would probably also result in lower transportation costs for Oregon households, simply because electricity and natural gas are less expensive fuels than gasoline and will probably become more so on a relative basis over time. That means we will be exporting fewer dollars out of Oregon to pay for gasoline imports and coal-generated electricity imports. We'll keep more money circulating in the local economy. To the folks who are just flat-out climate-deniers, they're really not interested in talking about the merits. They just want to debate the climate science. They want to prove to their satisfaction that it's all bogus. I simply say to them: 'If you've got what you think is a scientific perspective and compelling evidence, submit it to a peer-reviewed process.' The climate science that I'm going by has been peer-reviewed. That's the gold standard in science. If you're not prepared to submit your hypotheses and evidence to that kind of rigorous review, then we really don't have anything to talk about.

MB: *Has the commission or another body projected the adaptation and mitigation costs for*

Oregon and metropolitan Portland in the coming decades? If so, what could we expect to spend?

AD: There are some instructive national and global analyses of this. What they say are a couple of things. One is that the cost of reducing carbon emissions is a real cost but it's dwarfed by the cost we should anticipate from coping with climate change if we don't reduce emissions. The ratios are anywhere from 4:1 or 5:1 to 20:1. And two: What we're talking about is a net increase in cost of 0 to 2 percent of global GDP. That's in part because a lot of the things you do to decrease greenhouse gas emissions pay for themselves. For the United States — which is probably a $12 trillion economy now — that's about $120 billion a year. There are things that we could do just by shifting from consumption to investment that would cover that cost in an awful hurry.

MB: *Portland and Multnomah County are among jurisdictions that have a climate action plan. Generally, as the OGWC develops a 'roadmap' for policymakers, are you finding that metropolitan Portland governments are doing enough planning and action today to mitigate and adapt to climate change to meet the state's emissions-reduction goals? If not, what are the areas that need to be addressed?*

AD: The Portland area governments, particularly Metro, Multnomah County and the City of Portland, are certainly among the leaders statewide and nationally in taking this issue on. The City of Portland's Clean Energy Works program, for example, is a really innovative way of trying to get at deep energy efficiency in structures. We are doing a lot that's right. That said, are we on a trajectory to get our greenhouse gases down consistent with our goals and what the (Intergovernmental Panel on Climate Change) and others say we need to do nationally? No. We are significantly behind that curve. We shouldn't be just allocating emissions cuts on a proportionate basis to each Oregon city. Portland has more opportunities for energy and carbon efficiencies than La Grand does, so it should probably bear a greater responsibility to bring those reductions. We've never done that sort of analysis to suggest how that allocation ought to be deployed. There's a lot of work to figure out who should be doing what, on what timeline and in which sectors.

MB: *Getting to the subject of climate-induced migration — presuming Oregon, which has plentiful water and other natural resources, becomes a climate refuge — where would these people go? And what should the Portland metroscape do to accommodate this population influx?*

AD: We're already projecting a population increase in the Portland metro area of 50 percent by 2035. So, if we're talking about adding to that figure climate immigrants, it's going to raise significant challenges for a number of the policies we have in place or are talking about putting in place. It would put pressure on our urban growth boundary, particular pressure on any effort to keep the UGB where it is over the next 40 years and build inward and upward. It certainly means increased densities in the Portland area and other urban areas, Salem, Eugene, the Rogue Valley and Deschutes County. Chances are, that's where people will migrate to because services and amenities are there. Probably, the ones who could immigrate first are going to be the ones with more money, resources and capability. So I just think we ought to assume they'll be migrating to places that resemble the places

where they came from. And they're probably going to be coming from urban areas in California. We'll have the issue of having to accommodate increased demand on services, water and land that they're going to require. Frankly, it's a sobering challenge, and one that I don't think any of us has given enough thought to.

MB: *Given the robust population projection, absent climate change migration, what does the OGWC 'Roadmap' say in terms of how Oregon needs to produce sufficient electricity to meet future demands? For example, when the Boardman, Oregon coal power plant shuts down, what should take up the slack?*

AD: The Roadmap doesn't single out a bulging population case. What it does is it basically tries to project forward what the resource portfolio would need to look like at whatever scale in order to reduce greenhouse gases. What it has proposed is that, over the next 40 years, we meet all of our load growth from energy efficiency. Whether we can do that if we have an inflow of immigrants is a challenge, but I think that's the right benchmark to start with. On the generation side, we're talking about displacing all (imported coal-generated electricity) and replacing it with a combination of natural gas, as well as wind, solar and other renewables. Roughly speaking, our resource portfolio in 2050, without a climate immigration component, would be about 50 percent hydropower, perhaps 30 percent wind and other renewables and 20 percent gas.

MB: *You've talked about some wholesale changes to the energy sector. Looking at the Portland metro region, broadly, how is climate change altering our economy today and how might it alter our economy in coming decades?*

AD: To the extent that we're investing in more infrastructure here, we're freeing up more capital dollars that can be used for other economic purposes, whether that's helping low-income families or investing in the latest spin-off from Intel. This helps insulate us from probable fossil-fuel price spikes. These have already happened in gasoline and will probably also happen in other fuels as well. Beyond that, we are certainly looking at stresses on natural systems and the potential for greater flooding. All of those adaptation costs are going to be added onto our overall costs of living; they'll probably go into our GDP and make it look bigger, but they're negative costs, not positive costs. So frankly, we ought to be shifting more of our overall dollars into investment and away from near-term consumption. Our current model generates short-term prosperity, but it doesn't generate long-term prosperity. We have systematically starved a lot of our infrastructure investments. We're talking about cost of re-locating significant amounts of infrastructure. For example, sections of the Oregon Coast Highway, are going to have to be moved inland by up to 5 miles at some point because it's too vulnerable to the kinds of sea-level, wave-height, and storm activity that they've started to document coastally. I don't want to create a list of horribles and take it out there because then the focus shifts from trying to create some good and affirmative things to trying to prevent some bad and destructive things. People just aren't as energized by trying to prevent bad things from happening. People are fundamentally optimists. It's easier to get them to move when you appeal to their optimism, I think. It's harder to get them to move if they're looking at a lot of bad news. M