

From: Graham S. Wright <graham@passivehouse.us>
Sent: Friday, September 27, 2019 7:14 PM
To: DES SBCC <sbcc@des.wa.gov>
Subject: Additional comment 1 of 2 on Proposed 2018 Residential Energy Code

Hello Councillors,

I attended the meeting today in Olympia. Thank you for the opportunity to speak to the council. I hope you remember, I did keep my remarks brief. Other commenters went on longer. I did have more to say but cut myself short. Here is the rest of what I had prepared to say:

"Quoting Greta Thunberg, Facebook post, 11 February 2019.

"There's also some people who say that I oversimplify things. ... Yes the climate crisis is the most complex issue that we have ever faced and it's going to take everything from our part to 'stop it'. But the solution is black and white; we need to stop the emissions of greenhouse gases. ... Either we reach a tipping point where we start a chain reaction with events way beyond human control, or we don't."

Quoting Mark Carney, Governor, Bank of England, and Francois Villeroy de Galhau, Governor, Banque de France, Open letter on climate-related financial risks, 17 April 2019.

"Carbon emissions have to decline by 45% from 2010 levels over the next decade in order to reach net zero by 2050. This requires a massive reallocation of capital. If some companies and industries fail to adjust to this new world, they will fail to exist."

What the bankers are saying there is that this is going to cost a lot of money and a lot of people need to stop what they're working on and start working on something else. That implies some near-term hardship and that is why policies like code stringency increases need to be packaged with things like housing subsidies and job training and unemployment insurance and retirement buyouts. This is what the Green New Deals and Clean Energy Jobs Acts are trying to put together - an equitable transition - and I support these kinds of things as well. There shouldn't be any lack of jobs overall because there is a lot to do.

I think the legislative mandate that these code proposals respond to is being overtaken by events. Climate protests stopped traffic in DC this week and there's an Extinction Rebellion rally going on in Portland *right now*. I'm told young people are giving each other crap for using plastic bottles. It will probably be some time before working on fossil fuel powered stuff reaches the level of stigma of say, abortion doctors or arms manufacturers, but I think that's the trend and you might want to get ahead of it. I used to work for Kodak in commercial printing, which was essentially part of the advertising industry or food chain. This was mostly harmless but not really righteous. If I had been like most of my colleagues at the time - eight years to retirement, kid in college, I might have stuck it out. But I quit to work on energy efficiency and renewable energy for ethical reasons. I didn't get any unemployment and it cost me a lot of money to change up my career but I am better off for it. So, just something to think about."

I would also like to share a piece of information about air-sealing cost, because I think I heard the DR Horton rep say it was going to cost \$16/sf just for air-sealing to 2 ACH50. I have been basing our calculations on the air-sealing cost function that NREL built into BEopt 2.8. This is plotted out in the

attachment. It does go asymptotic - infinite cost at zero leakage, but even at passive house levels of air-tightness its < \$1/sf. This almost surely represents a settled-down post-learning-curve cost, but that seems fair enough.

Another general comment I might make on cost is this: The first-cost concern *never goes away, no matter what the economy has been doing*. I went to Oregon code hearings in 2010 when the economy was down and of course there was concern that business was bad and no one could afford to do anything extra to save energy. Now in 2019 in the midst of a building boom I go to code hearings and hear about how construction costs have gone up so much, so no one can afford to do anything extra to save energy. If I ask myself when does the building industry actually have something to complain about, I would suggest it has to do with the profitability situation. It turns out the Construction Specifiers have a tracker for that.

https://csimarket.com/Industry/industry_Profitability_Ratios.php?ind=205

Thank you and best wishes for your deliberations,

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ACH50	\$/SF air-sealing		2080 sf
0.05	1.264125	\$	2,629
0.1	1.12203	\$	2,334
0.2	0.979935	\$	2,038
0.57	0.765234	\$	1,592
1.14	0.623139	\$	1,296
2	0.507905	\$	1,056
5	0.320065	\$	666
10	0.17797	\$	370

