

Comments of Peter Erickson, SEI

August 24, 2018

Panel: Examining Options to Limit Production of Petroleum for Additional GHG Reductions

Several comments made by other panelists in response to my presentation and [our related study](#) from February, "How limiting oil production could help California meet its climate goals", were misleading or incorrect. I am submitting these remarks to address some of those comments.

On our use and reliance on economic oil models.

Amy Meyers Jaffe implied that our study was based on a "computer simulation" that was "decid[ing] arbitrarily what Saudi Arabi would do", and therefore "unrealistic". This is highly misleading, because our study used a very simple model that can be written as a simple ratio of the elasticity of demand of oil to the difference between the elasticities of demand and supply. This is not a "computer simulation" but a bedrock principle of microeconomics, here parameterized based on empirical elasticities derived from real world experience that already takes into account the behavior of other producers, including Saudi Arabia. Further, this model has been published in two peer-reviewed journal publications ([Erickson and Lazarus 2014](#), [Erickson and Lazarus 2018](#)), both of which also provide broader literature review on this topic as Ms. Jaffe suggested.

Ms. Jaffe further suggested that oil market models cannot be trusted for policy development, bringing up a single study that, in her telling, incorrectly predicted closing of refineries. This is not a relevant comparison, because is a single study describing a very specific situation and predicting a very specific outcome. By contrast, as stated above, the fundamentals of oil supply and demand, though uncertain (a point she also emphasized), are unambiguous in that reducing oil supply does reduce oil consumption. Further, Ms. Jaffe describes the importance of constraining pollution "directly". Limiting production of fossil fuels, the source of many types of pollutants, is indeed a direct and strong means of addressing such pollution.

On the increased costs to developing countries implied by our modeling of limiting California oil production.

Severin Borenstein suggests that limiting oil production as modeled in our study has global costs (namely, raising the world price of oil) and that, "politically it is a problem...it would not be acceptable in much of the country or the world", and "ethically it is an issue." He insinuates that this is also the "view" of developing countries and is "not going to be popular with the poor countries".

It is unclear on what basis he is making this claim. It contradicts statements made by the world's 47 least developed countries, who have argued in the international climate negotiations for a "phase out of fossil fuels" ([Republic of Ethiopia, 2017](#)) It also ignores calls from several developing countries in the Pacific region for a "moratorium on the development and expansion of fossil fuel extracting industries" ([Pacific Island Development Forum, 2015](#)). Further, Borenstein's statement of these costs ignores the fact that

developing countries are likely to bear the brunt of climate damages -- [including on their economic development, food security, and health](#) -- and therefore have the most to gain by a swift decarbonization and the more stable climate that could help ensure.

On our estimate of future oil prices under a low-carbon economy. Dr. Borenstein, claiming that our statement that oil prices may be ~\$60/barrel in a low-carbon economy consistent with the Paris Agreement is “unrealistic”, states that “if we take a significant share out of oil consumption, the price of oil would crash. \$20 per barrel is much more reasonable number when we start really putting downward pressure on the demand for oilFor that reason, I think it is just not realistic to think that we are going to get there by restricting California supply or by some sort of club of supply restriction, we are going to have to do it by developing technologies that can beat oil and that can beat cheap oil.”

But this argument is circular. This argument is circular because Dr. Borenstein is already assuming the very outcome he is trying to prove. The price of oil would only be \$20 per barrel if the world was *already* successful in developing the very types of technologies (EV or otherwise) he is calling for. In that case, oil consumption may have already been reduced enough to meet global climate goals (i.e. those in the Paris Agreement) of netting out global CO₂ emissions by mid-century, and so *further* cuts to oil supply or demand may not be needed as badly. But, the world is not yet on that trajectory, and by California’s own assessment, new measures are very much needed. Limiting supply, and by extension increasing prices, can help spur innovation in technologies such as EVs because it makes those technologies more competitive, and as a result limits oil consumption. Moreover, setting limits on supply sends important signals about the timing of the low-carbon transition, which can provide greater certainty that the transition is underway and in so doing help avoid stranding workers and assets in carbon-intensive industries.