

To: Brandy Chambers  
cc: Meredith Hatfield, Ben Barrington  
Date: July 25, 2014

Subject: SB-191 comments: Additional explanation for some of my May 1 comments.

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In my May 1, 2014 comments I proposed that various sources of energy be ranked using a list of attributes such as safety, reliability, intermittency, cost, fuel use, emissions, etc. At the end I included the following:

Intermittent sources of power can improve their ranking with:

Associated energy storage 'partner' for 'balancing', reliability, dispatchability

Associated energy source 'partner' for 'balancing', reliability, dispatchability

The intermittent energy source and 'partner' are then ranked as a pair for above valuations

This combining of intermittent sources with a 'partner' should probably have included a brief explanation:

For example, taken by itself, an intermittent and therefore unreliable and non-dispatchable source of power like wind should result in a very low ranking when compared with most other sources of power. When wind power is added to the electrical grid, it usually replaces a more reliable, dispatchable source of power, usually fossil fueled, with the intent of using less fossil fuel and generating lower emissions.

But some reliable, dispatchable power source must always be available as 'backup' to quickly replace wind power when the wind drops at least some of the time daily to produce no power at all, especially in the summer when power demands are highest. Cycling these 'backup' conventional power sources to operate in cooperation with wind power reduces their efficiency, causing them to use more fossil fuel and increase their emissions more than if they were allowed to run more evenly, as they did before the intermittent wind power was introduced.

So intermittent, unreliable sources of power like wind have been encouraged and promoted for the clean power they generate, rather than more accurately evaluated for the combination of their clean power and the necessary back up power plants running less efficiently. It was the intent of my May 1 proposal to improve their ranking by combining the two, as necessary for reliable operation on the electrical grid, so the now-reliable pair are compared more fairly with other reliable energy sources.

Alternatively, and preferably, if some cost-effective energy storage devices were available, and paired with intermittent energy sources like wind, that pairing could also be compared more fairly with other reliable sources of power for the electrical grid.

I hope this longer explanation helps the reader understand the concepts intended in my May 1 comments for SB-191.

Thank you,

Joe Wilkas  
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