TO: Members of the Joint Subcommittee on Natural Resources
FM: John Charles, President, Cascade Policy Institute
RE: HB 3630
DT: June 7, 2023

The advocates of HB 3630 have pointed out in testimony that in 2020, Oregon met less than 9% of its electricity demand with solar, wind and geothermal generated electricity. Coal and natural gas accounted for 48% of in-state electricity consumption.

Legislators should also know that state reliance on fossil fuels has ***actually increased*** since 2012, when it provided 45% of the state's electricity. The numbers are displayed in the chart below.

Major fuel sources for generating electricity used in Oregon
2012-2020

Year	Hydro	Coal	Natural gas	Wind	Nuclear
2012	46.0%	32.6%	12.7%	5.4%	3.1%
2013	41.2%	35.1%	14.2%	5.6%	3.2%
2014	41.4%	34.1%	14.8%	5.6%	3.3%
2015	39.1%	33.5%	16.6%	6.6%	3.0%
2016	41.0%	28.2%	18.5%	7.3%	3.5%
2017	44.8%	26.1%	19.3%	5.0%	3.0%
2018	43.3%	24.8%	21.1%	4.7%	3.8%
2019	37.2%	27.5%	24.8%	4.9%	3.5%
2020	38.9%	26.5%	21.5%	7.0%	3.5%
% change	-15.4%	-18.6%	+76.7%	+30.0%	+12.5%

Source: ODOE

The fact is, legislative mandates for wind and solar will logically result in more natural gas consumption because grid operators need it for reliability. This is true in Oregon and everywhere else.

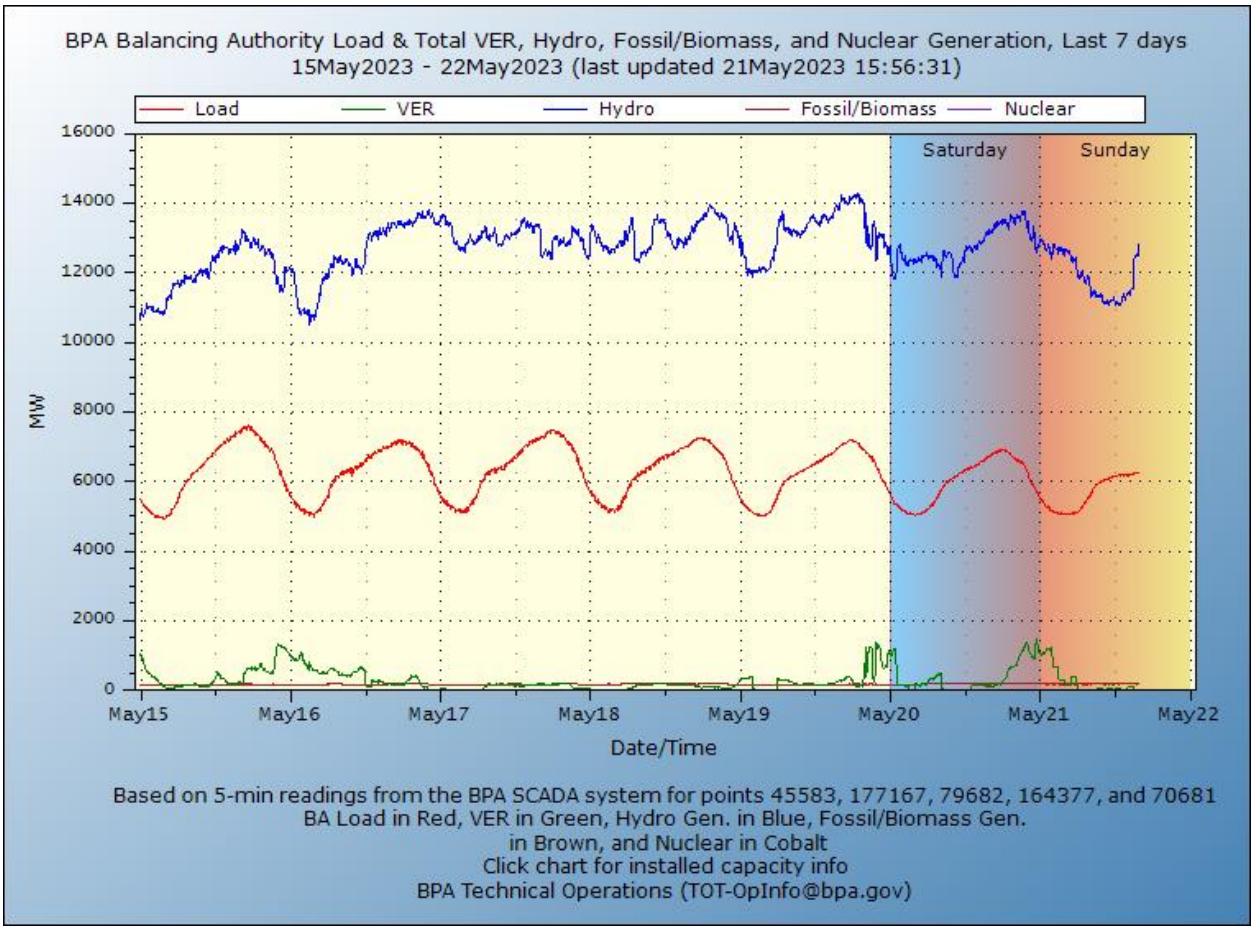
Scholars at the National Bureau of Economic Research found a nearly 1:1 relationship between the rise of intermittent renewable sources and natural gas generation, based on data from 26 countries over more than two decades. As wind and solar capacity grows, so too does the number of natural gas "peaker" plants needed to ensure grid reliability.

This problem can be seen graphically in the chart below. The Bonneville Power Administration (BPA) maintains real-time data on both demand and supply within the BPA territory. During the

week of May 15-22, demand rose and fell rather predictably, with higher consumption earlier in the week due to ambient temperatures above 90.

The coal and nuclear generation ran flat-out during the entire week, providing “baseload” power, and the much larger hydro system was ramped up and down to mirror the changes in demand.

But the performance of wind and solar – referred to as “VER” or Variable Energy Resources – was completely random. For nearly four straight days, output was close to zero. On three occasions, VER generation went up as demand was going down.



If we think of generation fuels as a family, wind and solar are the wild children. They never behave, and never will.

During my entire professional career, the main energy debate has been summarized as “fossil fuels vs. renewables.” I’d suggest that in the context of electricity generation, you change the narrative to “dispatchable vs. intermittent” resources. If you do that, you’ll realize that the chances of Oregon or any other state ever running a grid supported primarily by wind and solar are roughly zero.

Sometime before 2030, the legislature will have to walk back the mandates enacted in HB 2021. The sooner you get on with that task, the better.