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Stem carbon dioxide output through nuclear

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I read a startling article the other day. It was startling because it was about a decision made by Google to exit renewable energy research and development.

The company that invested billions of dollars in renewable energy projects such as wind and solar power announced that its scientists had concluded that it was not possible to power a data center that was to be a public demonstration of the success of its solar energy program. Google discovered what those who had gone before it had previously discovered - that intermittent wind and solar power cannot support high-density energy applications.

GOOGLE STILL supports niche applications of wind and solar, but its R&D program, by its own analysis, was not bold enough and not transformational enough to defend against increasing levels of carbon dioxide in Earth's atmosphere.

After factoring in the most optimistic projections of the growth of renewable energy in Earth's energy supply, Google's models still projected exponential increases in carbon dioxide levels because of the increased use of coal. If that surprises you, consider that there are about 3 billion people of the 7 billion people in the world today without electricity.

By 2050 the world population is projected to be 9 billion. That means the world must produce more than twice the amount of electricity in 2050 as it produces today if everyone is to have access to electricity.

I found this article particularly alarming because it was the first time I had really tumbled to the notion that levels of carbon dioxide were increasing in Earth's atmosphere in an "exponential" fashion. If you are not familiar with the term, it simply means that for a given increase in time the carbon dioxide level increases at more than a proportional, ever-increasing rate. So no matter how much "renewable" energy Google could credibly hypothesize in our energy mix, its models showed continued rapid growth of carbon dioxide in the atmosphere.

Mother Nature has supplied us with natural shock absorbers to help control carbon dioxide concentrations in our atmosphere. First there is photosynthesis. Carbon dioxide is plant food. Healthy, abundant forests and other plant life help remove carbon dioxide from the atmosphere. Unfortunately, during the past century, deforestation all around the world has weakened this control.

Another major control is embodied in the oceans of the world. Natural seawater is slightly alkaline and capable of dissolving huge quantities of carbon dioxide. The more carbon dioxide dissolved in seawater, the more acidic it becomes and the less able to dissolve more carbon dioxide. This not only affects the

carbon dioxide in the atmosphere, but also the dissolution rates of coral reefs, the birthplaces of man's food chain.

So it seems there are dire consequences in store for Earth unless we very quickly adopt energy policies that use high-density, zero-emissions technology. A lot is written about whether that should be new-generation nuclear concepts or fusion or something else. We keep trying to find the perfect answer to difficult technical problems, and we justify inaction based on lack of consensus.

THE TRUTH IS THAT we have new designs for nuclear power plants and small modular reactors that could be built on an expedited basis to meet this climate challenge while we continue to look for even better answers.

Incredibly, opponents of invoking a nuclear solution for these issues cite safety concerns. Nonsense! The choice before us is between emission-free technology that has been used for 60 years in this country without a fatality or continue down our current path that causes 7 million premature deaths a year worldwide and threatens our planet's very existence.

Now which one is a safety concern?

(The writer is executive director for Citizens for Nuclear Technology Awareness in Aiken, S.C.)