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Pass The Salt, Please

It is common knowledge that one of the big challenges for committing to renewable energy sources is reliability. Hard to make the lights go on with solar when the sun goes down. Or how about those calm, beautiful days when there is no wind. Our homes and factories just keeping pulling at the outlets to be fed electrons. How do we store the energy when we can capture it so that it is available for use when we need it? There is a lot of research and development taking place across the world to solve this dilemma.

As I was contemplating this topic, energy storage, I stumbled across an intriguing approach to the energy storage challenge. Interesting for many reasons. First, the 'who' that is working on this research-Google! I admit I am not an expert on many things, but I was completely unaware that Google is a part of a collection of companies that make up Alphabet, Inc., a relatively new investment firm founded in 2015 by the original founders of Google, Larry Page and Sergey Brin.

According to Larry, the idea to form this investment firm was driven by the desire to keep re-inventing and remaining relevant:

"We've long believed that over time companies tend to get comfortable doing the same thing, just making incremental changes. But in the technology industry, where revolutionary ideas drive the next big growth areas, you need to be a bit uncomfortable to stay relevant."

What is Alphabet? Alphabet is mostly a collection of companies. The largest of which, of course, is Google. This newer Google is a bit slimmed down, with the companies that are pretty far afield of our main internet products contained in Alphabet instead. What do we mean by far afield? Good

examples are our health efforts: Life Sciences (that works on the glucose-sensing contact lens), and Calico (focused on longevity). Fundamentally, we believe this allows us more management scale, as we can run things independently that aren't very related."

It is through this investment in technology that Google came to be engaged in the energy storage business, the second item I found to be of interest. Now enter Alphabet's secretive X skunkworks lab who is working on solving the energy storage problem with salt and antifreeze, a project code named Malta.

Bloomberg Technology's Mark Bergen reported:

"The research lab, which hatched Google's driverless car almost a decade ago, is developing a system for storing renewable energy that would otherwise be wasted. It can be located almost anywhere, has the potential to last longer than lithium-ion batteries and compete on price with new hydroelectric plants and other existing clean energy storage methods, according to X executives and researchers."

Two tanks are filled with salt, and two are filled with antifreeze or a hydrocarbon liquid. The system takes in energy in the form of electricity and turns it into separate streams of hot and cold air. The hot air heats up the salt, while the cold air cools the antifreeze, a bit like a refrigerator. The jet engine part: Flip a switch and the process reverses. Hot and cold air rush toward each other, creating powerful gusts that spin a turbine and spit out electricity when the grid needs it. Salt maintains its temperature well, so the system can store energy for many hours, and even days, depending on how much you insulate the tanks."

Perhaps the Salt City will become the center of energy storage, making Governor Cuomo's ambitious REV goals (50% electricity from renewables by 2030) an easier lift!