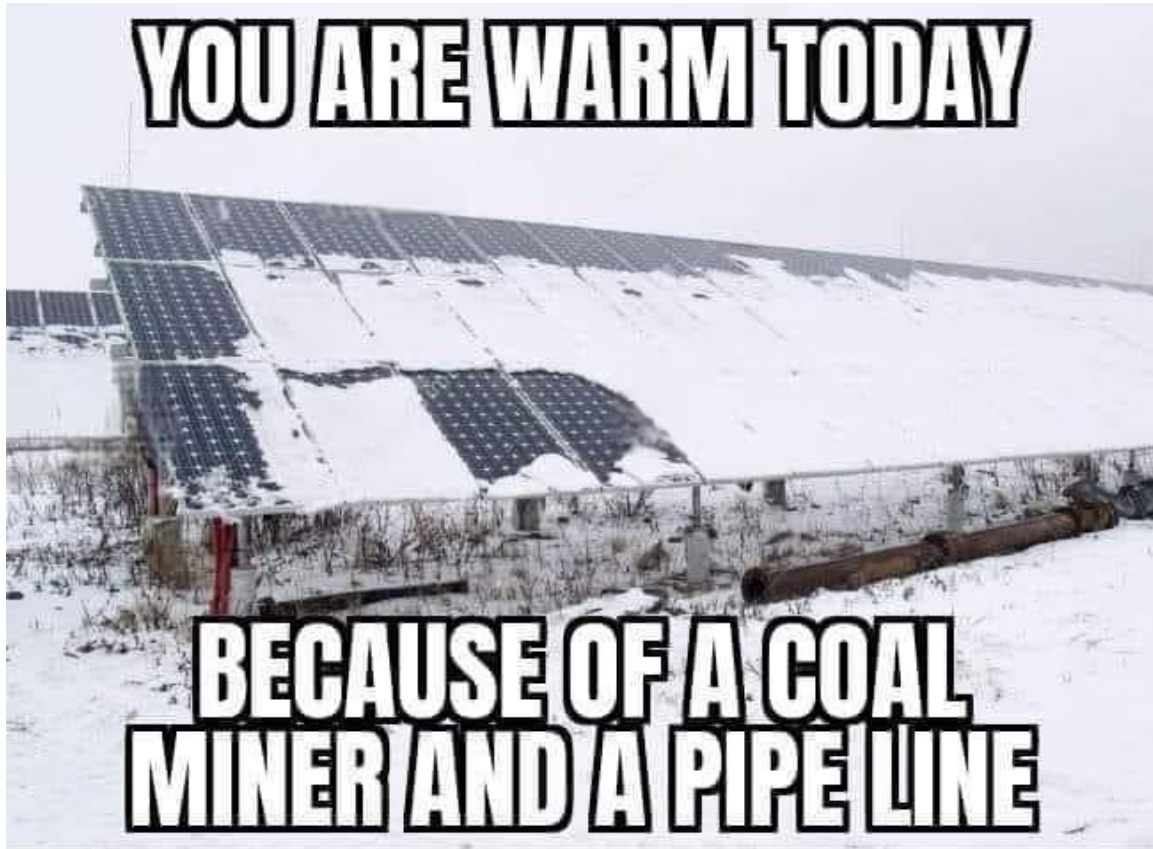


The "Clean Energy" Fraud: The Little Reported Problem With Battery Storage Which the ESG Agenda Depends Upon

The closure and demolition of the J.H. Campbell Generating Plant, like so many other coal plants, rests upon the long term premise that solar and wind will replace coal. It is obvious that solar and wind will not be able to replace coal unless large scale battery storage can safely and affordably accommodate it, because solar and wind are by their nature obviously intermittent:



There are huge risks and problems with the sort of battery storage necessary for significant reliance on solar and wind for electric generation:

“Worldwide, utilities are on the hunt for reliable clean energy solutions flexible enough to meet their customers’ fluctuating needs. Many have pinned their hopes on huge battery energy storage systems that can capture excess solar and wind energy from the power grid and save it for when demand is high. But in the decade since these technologies arrived, a deep look finds dozens of fires at the facilities all over the world have left some hobbled, including two in Moss Landing...But stringing so many battery cells together requires careful management to avoid cascading failure. BESS facilities use software that monitors the temperature of each cell. “If one cell is overcharging a bit, its temperature starts increasing,” said Gustavo Vianna Cezar, a staff engineer in the U.S. Department of

Energy’s SLAC National Accelerator Lab in Menlo Park. “If it catches on fire, the heat can spread and then a bunch of them catch on fire. It just becomes a hard thing to contain.” The worst-case scenario is a situation called “thermal runaway,” in which a lithium-ion battery gets trapped in an uncontrolled self-heating cycle. Thermal runaway can cause smoke, fires and even explosive venting of gases from inside the battery. That’s what happened at a 10-megawatt lithium-ion grid storage facility in Chandler, Arizona, this April, according to the local utility Salt River Project. Chandler firefighters used a robot to vent the batteries and avoid any injuries to first responders. But these incidents aren’t always without casualties: An explosion injured several firefighters who were responding to a similar fire at another Arizona BESS in 2019. The risk of thermal runaway lurks even in smaller lithium-ion batteries.”^[1]

“Energy storage and rechargeable batteries are key to unlocking the potential of renewable energy. Lithium-ion batteries are already facilitating the integration of renewable energy supplies into the grid. This is a rapidly evolving field, and as with all developing technologies, some trends and pitfalls are beginning to emerge...BESS are batteries deployed on a much larger scale, with enough power and capacity to provide meaningful storage for electric grids... Whenever a large amount of energy is stored — whether in traditional liquid/gas forms or in batteries — there is a risk that an uncontrolled release of the energy could result in a fire or explosion. In batteries, thermal runaway describes a chain reaction in which a damaged battery begins to release energy in the form of heat, leading to further damage and a feedback loop that results in rapid heating. Left unchecked, the heat generated can cause a fire. The only way to stop thermal runaway is rapid cooling of the affected cell(s). Alternatively, the affected battery module can potentially be separated, so that the reaction is allowed to reach its destructive conclusion in a safe location... Large-scale battery fires have occurred in almost every jurisdiction with BESS deployments over the last few years. For example, South Korea suffered multiple destructive fire events between 2017 and 2019, which led to a government investigation and orders to shut down some units and limit the charge rates of other BESS installations nationwide. Despite these changes, other fire events have occurred in South Korea. Additional fires in Europe and North America have highlighted that this failure mode is not unique to a particular manufacturer or design — it’s inherent in the technology.”^[2]

Battery technology is not ready for what ESG advocates want to happen with solar and wind. There is nothing “clean” about this overall picture. It is filthy rotten; Americans have been misled.

[1] <https://www.montereyherald.com/2022/06/12/energy-storage-in-moss-landing-a-smoky-challenge-to-a-new-chapter/>

[2] <https://www.marshmcclennan.com/insights/publications/2022/november/recharging-the-transition-the-role-of-battery-energy-storage-systems.html>