

Climate Change and LENR

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Projected climate change will drive more frequent and damaging storms, wildfires, droughts and affect farming, movements of fish, and increase disease and sea level. Sea level rise is especially worrisome since 60% of the world population may eventually be displaced, resulting in devastating migrations and loss of property and livelihoods, and international competition for resources and survival.

Climate change is coming much sooner and more destructively than most realize because countries have delayed acting. Present solutions are not up to the job. The political will necessary to drive timely and effective solutions does not exist, and is not likely to appear soon enough. LENR could make a substantial difference, but only if actual products can replace most power sources starting at the latest in 2030.

The current temperature change from the 1995 reference is about 0.9°C. Climate experts believe that a temperature rise of 1.5 is the maximum that can be tolerated based on Paleolithic examinations, which show vast ocean rises with even lower temperatures. Today, the Intergovernmental Panel on Climate Change is proposing strategies that allow temperatures to rise over 2 degrees C, with plans to eventually remove CO₂ from the atmosphere to get back to a 1.5 degree rise. Those plans are inconsistent with present global Nationally Determined Commitments (NDC's), which will result in temperatures rising 3.7°C. Generally speaking, even these NDC's are not being met.

Planned solutions are complex, interrelated, politically sensitive, and technically implausible, leading to a low probability of delivering the desired ΔT profile on the required schedule, even with the best of intentions. Two of the central parts of the default plan are moving entirely to wind and solar to replace hydrocarbon generation, and direct air removal of CO₂ after it is in the atmosphere. Both have problems that could, conceivably be solved by adequate LENR generation.

Wind and Solar require some “dispatchable”, (meaning reliable, on short notice) power to deal with their significant fluctuations. (Batteries and smart grids are not sufficient as the grid nears 100% green. 50% of maximum capacity will have to be reliably available.) The present plan involves massive biomass energy generation to feed boilers equipped with Carbon Capture and Storage, and huge tracts (in the millions of square miles) of new biomass growth. The only presently conceived alternative is Gen 4 nuclear, which has not been built or tested, and which may not be suited for third world countries, or for local power applications, and may not be politically acceptable even if available.

Similarly, direct air capture requires vast amounts of energy, and places to put the resultant carbon. Requiring as much energy as it does increases the overall clean energy problem.

LENR power generation appears to be the only solution that resolves the overall problem, avoiding very complicated strategies and interacting issues, and avoiding the delay caused by huge infrastructure rollovers—but only if LENR can be commercialized soon enough to affect policy in many countries.