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Nuclear energy as a true climate savior in terms of risk (Fukushima), waste, sustainability and greenhouse gas emissions. ROBERT HAYES, North Carolina State University, RDNA TEAM — Research has shown that all radiation doses from Fukushima were too low to generate any statistically significant medical effects. The evacuation did kill almost 2000 people and radiophobia has since been creating serious stress related medical outcomes (e.g., hypertension, weight gain). Shielding and transportation of radioactive sources such as high level waste has been well understood and implemented for many decades. With the overwhelming scientific evidence for the safe geological disposal of spent nuclear fuel being blocked only by politics, the lack of greenhouse gas emissions from this baseload providing and dispatchable nuclear energy source is extremely compelling. With new research showing that ocean extraction of naturally dissolved primordial actinides supplied by river water is being replenished (via erosion and plate technonic renewal) at around 10x the current US energy usage annual rate now makes nuclear energy renewable. Recycling technology can burn all long lived fission products and utilize depleted uranium from prior fuel manufacture allowing fuel cycles which are truly sustainable. All of this begs the question as to whether nuclear energy is truly the climate savior we are seeking.

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