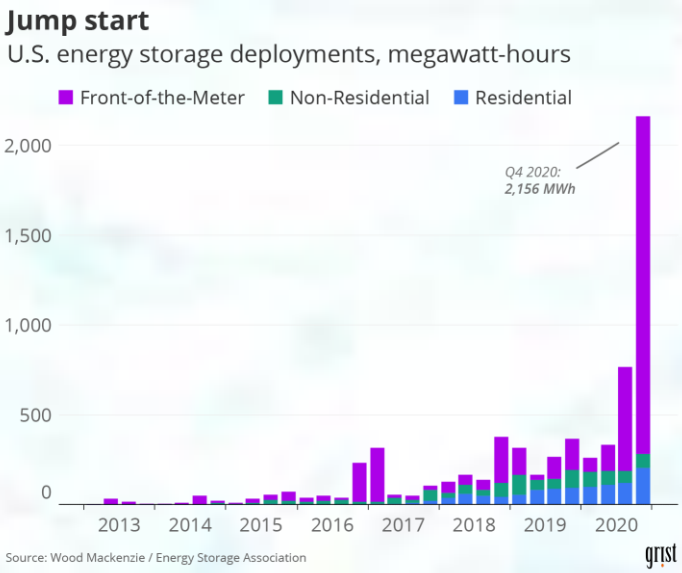
the weekly anthropocene

dispatches from the wild, weird world of humanity and its biosphere

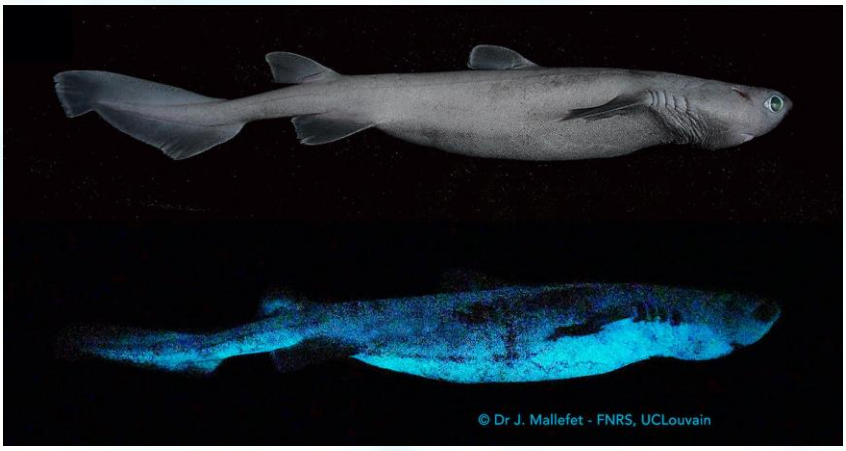
By Sam Matey, March 10, 2021

Battery Storage & EV Commitments. 2020 saw a record surge in the addition of battery storage to the US grid. Grid-scale battery storage is a key part of the renewables revolution, needed to ensure power when the wind isn't blowing or the sun isn't out. And it now looks as though that technology has come of age: amazingly, more grid-scale batteries were powered up in the US in the last three months of 2020 (2,156 megawatt-hours of them) than in 2013 through 2019 *combined*. Most of this was attributable to a multitude of battery projects in California-but due to the rapidly lowering costs of battery technology (batteries now cost 80% less than they did in 2010), this is likely only the start of nationwide development.



Furthermore, after GM's January pledge to sell only zero-emission vehicles by 2035, more car companies are embracing the electric future. Jaguar Land Rover announced that the Jaguar luxury brand will be all-electric by 2035 and 60% of Land Rovers sold will be zero-emission vehicles by 2030. And Ford announced that they were investing $1 billion in an EV factory in Cologne, Germany, and would be selling only electric vehicles in Europe by 2030. Superb news!s

Glowing Sharks. After a 2020 voyage to Chatham Rise off the coast of New Zealand, researchers have discovered that three species of deep-sea shark are bioluminescent. The kitefin shark (*Dalatias licha*), the blackbelly lanternshark (*Etmopterus lucifer*), and the southern lanternshark (*Etmopterus granulosus*) can all emit light-and the kitefin shark (pictured), at six feet long, is the largest known vertebrate to do so. It's unclear exactly how or why these sharks are bioluminescent, as they don't seem to have the common luminous compound luciferin, and the light could be used for anything from camouflage to mating displays. Fascinating news!



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Biden Administration. We can't highlight all the great work the Biden Administration is doing every week-but it's worth while to note that as this newsletter is being written, the Senate has passed and the House is on the verge of finalizing the biggest expansion of the social safety net since FDR's presidency. (Plus, Biden is working to strengthen protections for migratory birds!) The American Rescue Plan stimulus bill (passed with only Democratic votes) provides $350 billion to keep state and local governments afloat, a big expansion of child tax credits, $170 billion for schools, $1,400 stimulus checks to individuals making $75 K or less and couples making $150 K or less, and a whole lot more. Although the votes were sadly not there for a $15 minimum wage, this bill is a titanic achievement even so: it's projected to cut child poverty in America in half, transforming lives. Elections matter, and our 2020 victory is paying off.

Petaluma, California. In a continuation of California's history of leadership on climate and energy issues, the 60,000-person North Bay Area town of Petaluma has become the first municipality in America to ban the construction of new gas stations. The new ordinance, designed to reduce air pollution and climate change, was fairly uncontroversial in Petaluma. The town had already committed to carbon neutrality by 2030, and had 16 existing gas stations, so no one should be left stranded during the dusk of the internal combustion engine. Great news!

Variable Harlequin Toads. The variable harlequin toad, *Atelopus varius* (pictured) lives in the rainforest streams of Costa Rica and Panama-or at least it used to. The species is now critically endangered, weakened by the illegal pet trade and then absolutely devastated by fatal infections from the globe-spanning, amphibian-annihilating chytrid fungus. The species is now critically endangered, with an unknown but likely extremely low number surviving at scattered sites in the wild. However, a new hope for the species has arisen. In partnership with the local government, six variable harlequin toads were brought from Panama to the UK's Manchester Museum in 2018, and now, after three years of work, they have been successfully bred in captivity for the first time. (The trick is to painstakingly recreate their natural environment, right down to the lighting required to sustain the tadpoles' favorite food alga). This is spectacular news, providing both a sustainable back-up population for the species and a potential future nucleus for reintroduction!