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Can the power grid go green in time?

Scientists say mankind needs to cut its greenhouse gas emissions to zero by 2050, to avoid the worst consequences of climate change. But is such a massive overhaul of a world economy that still largely runs on oil, natural gas and coal even possible?

Earlier this week, House Democrats called a hearing in which they asked leaders from the power industry whether they could realistically cut emissions to net-zero within a little more than three decades. With wind turbines, solar panels and nuclear reactors making up 36 percent of U.S. power generation last year, that sector is further along the decarbonization path than most. And with the total greening of the American economy likely requiring the electrification of everything from cars to leaf blowers, power companies would have plenty to gain in a such a scenario.

But even they are reluctant to commit to such a goal, which might require doing away with coal and natural gas power plants, some of which are only years old and were built to run for decades. A study by the federal government's National Renewable Energy Laboratory found that existing technology was adequate to get the U.S. power grid to 80 percent renewable energy by 2050 - getting the additional 20 percent would require technological advances in batteries and carbon capture, equipment that engineers are still struggling to make commercially viable. Power companies are already on their way, with wind and solar power representing the majority of new generation installed in recent years. But it's not fast enough to get to net-zero by 2050.