AMERICA, IN THE DARK

KITE & KEY MEDIA

[VIDEO TRANSCRIPT]

We stand on the cusp of a bold new era for energy: a future of clean, abundant fuel sources that will power our economy while simultaneously protecting our environment.

It's an accomplishment that could reshape the very contours of human history. Of course, no great civilizational advancement comes without difficulties. So it's worth noting that there is one small catch [lights flicker and then go out]. Ok … maybe not that small.

[OPENING SEQUENCE]

Imagine taking someone from 100 years ago and plopping them down in present-day America. What do you think would surprise them the most? The fact that we all walk around with little rectangles in our pockets that can tell us anything we want to know?

The fact that we can now edit our genes?

Or the fact that the society behind those innovations … also struggles to keep the lights on?

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That's right: Despite our progress on other fronts, America's actually seen its number of **power outages** increase dramatically in recent years.[1] Which is inconvenient, if you're lucky — and dangerous if you're not.

While blackouts are getting more common, the country has yet to experience another one as bad as the August 2003 outage that affected the Northeast, parts of the Upper Midwest and Ontario, Canada. Power was lost for 50 million people over the course of two days and New York City was plunged into darkness.

Given that danger, you'd think we'd be doing everything in our power to keep the lights on. But in reality, we're actually doing things that **increase** the risk. Although we're doing it with the best of intentions, if that's any consolation.

Here's the issue: Because of concerns about carbon emissions, there's been a widespread push to get more of America's energy from renewable sources like wind and solar. So much so that politicians throughout the nation have passed laws **requiring** their use.

Twenty-seven states now have such laws on the books,[2] with 19 of them required to eventually get 100% of their energy from renewables.[3]

Like many issues in American politics, the use of alternative energy varies by region. Every state in the Northeastern U.S., for example, has renewable mandates, while only three Southern states – North Carolina, Texas, and Virginia – do.

The impulse is understandable: Who wouldn't want cleaner energy? But of course we've got to ask some follow-up questions — like, "How much will it cost?" and "Will it actually work?" The issue, after all, isn't what we want out of those energy sources, but what they can **actually provide**.

Here's the good news: Solar and wind power have gotten significantly better in recent years. Here's the bad news: Today, they've just about reached the ceiling of their potential … and they still can't give us nearly enough power.

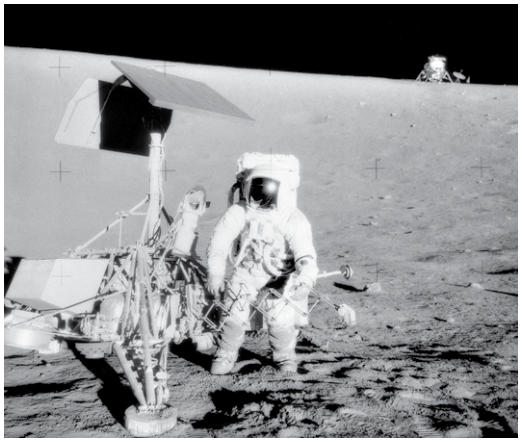
From 2011 to 2018, there were nearly $2 trillion spent around the world on wind and solar energy. And at the end of that process — they covered about 3% of the world's energy needs.[4] In the U.S., it was about 4.5% in 2020.[5]

What are America's leading power sources? More than 2/3 of the country's energy comes from petroleum and natural gas. Coal is a distant third, providing 10% of America's power.

And, despite that huge investment, wind and solar aren't even our leading source of carbon-free energy. That'd be nuclear, which gives Americans almost double the energy of wind and solar combined.

Despite nuclear's greater contribution to decarbonizing the economy, nuclear plants are being shuttered at the same time that wind and solar are expanding. As of December 2020, the U.S. had 56 nuclear plants. Recent estimates suggest about half of the country's nuclear facilities could close within a decade.

So what's going on here? Why do we have so little to show for all this effort? After all, if we can put a man on the moon, certainly we can do something like changing around our energy sources, right?



Well, as one energy scholar puts it, "Transforming the energy economy is not like putting a few people on the moon a few times. It is like putting all of humanity on the moon … permanently."[6]

Why is it so complicated? Start with this: Renewables are sources of energy that are replenished by nature. Which sounds great, right? But here's the problem: That means we have no control over when they're available.

The wind doesn't blow everywhere or all the time. And the sun has an annoying habit of disappearing for hours on end. So, when they go away … so does the power.

While wind and solar get most of the attention for problems related to intermittency, it's also true of hydroelectric power. Western droughts have meant that the Hoover Dam supplies power to 100,000 fewer households than it did two decades ago.

How do you get around this problem? Well, so far you can't. Right now, we have to rely on other, more dependable power sources to pick up the slack when renewables falter. So while a state like California can brag about how much renewable energy it's generating, it actually has to import more than 1/4 of its energy from other states.[7] And in 2020, more than 2/3 of that energy came from non-renewable sources.[8]

In other words: **renewable energy – non-renewable energy = blackouts.**

One long-term proposal to get around this problem is to use batteries to store extra energy that can be used when renewables aren't running.

The only problem? You guessed it: Turns out that's super hard too.

How hard? Tesla's $5 billion Nevada "Gigafactory" is the country's largest battery manufacturing facility. And the total amount of batteries it produces in a **year** … would only be enough to store about **three minutes** worth of America's electricity needs.[9]

And that's not the only logistical difficulty attached to going all in on renewables. Wind turbines and solar panels require vastly more space than other power sources. It's estimated that getting the U.S. to 100% renewable energy would require somewhere between 25-50% of ***all the land in the country.***[10]

The problem here isn't wind and solar power themselves. There are plenty of times and places where they work well. The problem is trying to use them as the power source for the entire country, 24/7, despite the fact that we know they can't shoulder that burden.

Ironically, wind and solar get most of the attention despite the fact that they produce less energy than other renewable sources. America's leading renewable fuel source is biomass (nuclear is not technically considered a renewable). And hydroelectric power supplies twice as much of America's energy as solar.

That's one of the reasons that a 2020 survey of the very people responsible for maintaining the grid declared that changing our energy sources is the single biggest threat to the reliability of America's electricity — more dangerous even than cyberattacks.[11]

Overhauling America's energy economy will depend on having power sources that are clean, and reliable and affordable all at the same time. And that's a pretty tall order.

So tall in fact that when Google put together a team of geniuses to figure out how to do it, they reported back that not only would renewables not be up to the task but that, in fact, "We don't have the answers. Those technologies haven't been invented yet."[12]

The folks at Google weren't the only braniacs to come to this conclusion. In 2020, Microsoft pledged to get to net zero emissions, but conceded that doing so would require "new technology that doesn't exist today."

Which doesn't mean that it's impossible — just that we've still got a lot more work to do. But c'mon, we're America. We'll figure it out! We created the little all-knowing rectangle box! And that was pretty good, right?

...I mean, apart from the whole causing society to lose its mind thing.

[END OF SCRIPT]

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