A conversation with Allan Marks

with Drew Campbell

Allan Marks

Drew Campbell, *senior editor of* Institutional Investing in Infrastructure, *recently discussed energy infrastructure, investments in resilience and sustainability, and the impact of recent storms, as well as aspects of the U.S. infrastructure bill, with* **Allan Marks,** *partner with Milbank and member of the firm's global project, energy and infrastructure finance group.*

What has been Hurricane Ida's overall impact on energy infrastructure?

Hurricane Ida came ashore at the end of August 2021 as a Category 4 storm with 150-miles-per-hour (241 kph) winds, 16 years to the day after Hurricane Katrina hit the same part of Louisiana and caused record damage. Ida caused widespread power outages, forced more than 90 percent of the state's offshore oil and gas installations off line, and damaged power lines and other energy infrastructure across several states. By the time the storm's remnants crossed the U.S. Southeast and headed out to the Atlantic over New York City's Tri-State region, massive flooding, high winds and record rainfall had severely disrupted much of the nation's electric grid, power plants, pipelines and refineries. The storm knocked out power to millions of homes and businesses, some for over a week. Fortunately, hardened infrastructure built to withstand severe storms and flooding — including levies in New Orleans newly refurbished after Hurricane Katrina — held up better than more vulnerable facilities. Investments in resilience paid off. Nonetheless, society depends on interconnected networks for power, transport, services and communications. Just as with the severe winter storm that crippled Texas' gas and electric systems in February 2021, even the most resilient power plant or refinery becomes useless if the links in its supply chain — power lines, substations, gas pipelines and compressors, storage facilities, roads — cannot operate. These storms highlight the need for broadly coordinated planning and investment across multiple sectors to make regional infrastructure networks — not just individual facilities or cities — more resilient in the face of extreme weather.

What is at risk to governments and their communities by being underinvested in infrastructure resilience and clean energy as extreme weather events persist?

Extreme weather events are expected to increase in both frequency and intensity due to a changing climate. Resilience is not free; someone has to pay for it. That said, many governments are discovering that the cost of failing to invest in resilient infrastructure may be higher than the cost of making our energy systems stronger, nimbler and more adaptable.

How do clean-infrastructure projects promote resilience and preparedness for severe weather?

Clean-infrastructure projects are mainly meant to serve sustainability goals, such as reducing greenhouse-gas emissions (GHGs) or replacing costly large generation and transmission assets with distributed generation, microgrids and storage. Sustainability and resilience are not the same thing. Sustainability in this context seeks to slow the rate of anthropogenic climate change by removing factors that contribute to it. Resilience, in contrast, seeks to protect us from climate impacts. Some clean-energy sources, such as smaller distributed generation — especially from renewable sources such as wind and solar that do not depend on fossil fuels — may be both sustainable and resilient by reducing dependence on

vulnerable regional networks. Of course, robust regional networks to distribute electricity, liquid fuels and so forth may also boost resiliency, since they provide diversity of supply and redundancy when local facilities fail. In other sectors — especially transportation and heating/cooling of buildings — the cleanest projects are those that change how energy is used by increasing energy efficiency, decreasing per capita energy use, and managing demand so that variable load and supply can be more quickly and predictably aligned. This is not just a technology question, but also a question of regulation, rates and market design, price signals versus subsidies, and economic policy, to the extent that costs and benefits are often borne in ways that are inefficient, inequitable or invisible.

How prepared are most governments to manage and operate their energy infrastructure through severe weather events? For starters, do most governments have an inventory of their critical infrastructure assets?

Some state and local governments maintain reliable inventories of their infrastructure assets and have a sophisticated understanding of how climate impacts may threaten the availability and reliability of those assets. Other states lag behind. The U.S. government mandates that agencies compile lists of critical infrastructure and potential threats. The federal Cybersecurity and Infrastructure Security Agency has identified 16 "critical infrastructure sectors whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof," based on 2013's Presidential Policy Directive 21 (PPD-21): Critical Infrastructure Security and Resilience. Many states have taken coordinated steps to protect critical water, energy and transportation networks and the associated essential workforce needed to keep them running. For instance, California has undertaken four multi-agency Comprehensive Climate Change Assessments since 2006, each designed to assess the impacts and risks from climate change in light of the latest science and socio-economic developments, and to identify potential policies, integrated plans and programs to safeguard the state from climate change.

Ida impacted rural, suburban and urban communities and energy infrastructure that often spans these locations. Would coordinated action and investment among communities help achieve better resilience?

In some areas, existing infrastructure delivery systems are either too fragmented (such as water infrastructure) or too scarce (such as broadband digital infrastructure). These challenges are particularly felt in areas that are burdened by low density or low income or both. Rural communities and urban neighborhoods — especially communities of color and other historically underserved groups — suffer disproportionately. Coordinated action by investors supported by sympathetic public policies could close this infrastructure gap by creating economies of scale and operating efficiencies. If so, retail utility service would become more affordable, reliable and universal. Given that vulnerable populations are, by definition, least resilient, investments in these areas could have truly significant positive impacts. If you live in substandard housing, lack reliable water or power, and have no internet connection, imagine how much more livable, connected and resilient your community could become if we directed public and private investments to your area to make those services more resilient. The external benefits from improved public health, labor-force development and participation, education, and more resilient housing could well justify public policies that create opportunities for private investment and innovation in historically neglected areas.

What do industry and investors need from government to help make energy-infrastructure resilience investments?

Private investors are willing to take risks if those risks can be identified, priced and allocated to the persons best positioned to manage them. Government energy subsidies may not always be transparent, but they have often been successful. Tax

credits have spurred massive capacity additions of wind, solar and geothermal power. Access to federal lands under long-term leases and exemptions from some environmental regulations have historically benefited oil and gas extraction, including fracking. Nuclear power has long benefited from a liability shield under federal law, coupled with licensing safeguards. At the subnational level, renewable portfolio standards in some states (such as California) have forced regulated utilities to diversify their sources of supply to include more renewable energy, while other states (such as Texas) have subsidized the essential long-distance transmission lines on which remote wind farms and many utility-scale solar power plants depend. Ideally, new policies, programs and regulations will reward investments in sustainability and resilience, such as by value sharing the added energy storage from integrating EVs into urban distributions systems, by monetizing renewable attributes of clean power more creatively, and by incentivizing demand-side management and smarter grids to make energy usage more efficient.

How can energy transition and clean-energy investment help mitigate the worst-case scenarios in future storms?

The energy transition seeks to accelerate decarbonization of power production in order to reduce the worst-case scenarios for climate change impacts. The latest UN IPCC science panel report unambiguously assesses the need for rapid replacement of hydrocarbons in energy production to reduce global emissions of GHGs, such as CO2 and methane. Established renewable technologies, together with newer technologies such as green hydrogen, long-duration energy storage and advanced biofuels, are all part of the solution. Absent substantial and sustained changes in the ways we produce, transport, store and use energy, adverse climate impacts will become more dire under any model. There are very real policy debates and regional differences, globally, in managing the tradeoffs, costs and priorities of various technological paths and related socioeconomic choices, but the science on the scale and nature of the problem is pretty consistent.

What investment vehicles and strategies can investors use to make energy transition and clean-energy investments?

Investments require some degree of confidence in the probabilities of diverse outcomes and resilience to exogenous shocks. Regardless of the complexity of financial instruments, derivative solutions, insurance products, or managed funds and other investment vehicles, sound investment decisions in the clean-energy space will be supported by better information and transparency in two areas. First, how resilient is an investment to low-probability, high-magnitude climate impacts — such as extreme weather events, wider systemic failures of infrastructure networks, or unpredictable social and political reactions to climate impacts? That is a challenging question when both the probabilities and magnitudes of climate risk seem to be escalating. Second, how are ESG and sustainability metrics measured, and how do those metrics correlate, if at all, with financial performance? Some investors in this sector are driven by risk reduction. Other investors hope to capture the upside of technologies that are innovative or will be favored by public policy. Some investors are genuinely driven by core values to be "clean and green" and not solely by economic returns. Some investors, sadly, may be content with "greenwashing." There is no one-size-fits-all approach to clean-energy investing.

Will severe climate projections increasingly push government to invest and promote investment in clean-energy transitions?

Yes. Unavoidably. Severe climate projections will increasingly push governments to invest and promote investment in clean-energy transitions, as those projections, over time, become actual experiences. One key concern of mine is that — in the face of limited public budgets and progressively more severe climate impacts — investments in resilience and restoration may displace investments in sustainability. That sort of shift could have the unfortunate effect of increasing long-term risks. More sustainable energy infrastructure today would lessen the need for greater resilience in the future. ❖