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### Advantage One is DERS

#### Runaway warming causes extinction

Sears 21 [Nathan Alexander Sears, PhD Candidate in Political Science at The University of Toronto, Former Professor of International Relations at the Universidad de Las Américas, Trudeau Fellow in Peace, Conflict and Justice at the Munk School of Global Affairs, “Great Powers, Polarity, and Existential Threats to Humanity: An Analysis of the Distribution of the Forces of Total Destruction in International Security”, Conference Paper: International Studies Association, 2021 Annual Conference, March/April 2021, https://tinyurl.com/bfbfspzx]

*Climate Change*

Humanity faces existential risks from the large-scale destruction of Earth’s natural environment making the planet less hospitable for humankind (Wallace-Wells 2019). The decline of some of Earth’s natural systems may already exceed the “planetary boundaries” that represent a “safe operating space for humanity” (Rockstrom et al. 2009). Humanity has become one of the driving forces behind Earth’s climate system (Crutzen 2002). The major anthropogenic drivers of climate change are the burning of fossil fuels (e.g., coal, oil, and gas), combined with the degradation of Earth’s natural systems for absorbing carbon dioxide, such as deforestation for agriculture (e.g., livestock and monocultures) and resource extraction (e.g., mining and oil), and the warming of the oceans (Kump et al. 2003). While humanity has influenced Earth’s climate since at least the Industrial Revolution, the dramatic increase in greenhouse gas emissions since the mid-twentieth century—the “Great Acceleration” (Steffen et al. 2007; 2015; McNeill & Engelke 2016)— is responsible for contemporary climate change, which has reached approximately 1°C above preindustrial levels (IPCC 2018).

Climate change could become an existential threat to humanity if the planet’s climate reaches a “Hothouse Earth” state (Ripple et al. 2020). What are the dangers? There are two mechanisms of climate change that threaten humankind. The direct threat is extreme heat. While human societies possesses some capacity for adaptation and resilience to climate change, the physiological response of humans to heat stress imposes physical limits—with a hard limit at roughly 35°C wet-bulb temperature (Sherwood et al. 2010). A rise in global average temperatures by 3–4°C would increase the risk of heat stress, while 7°C could render some regions uninhabitable, and 11–12°C would leave much of the planet too hot for human habitation (Sherwood et al. 2010). The indirect effects of climate change could include, inter alia, rising sea levels affecting coastal regions (e.g., Miami and Shanghai), or even swallowing entire countries (e.g., Bangladesh and the Maldives); extreme and unpredictable weather and natural disasters (e.g., hurricanes and forest fires); environmental pressures on water and food scarcity (e.g., droughts from less-dispersed rainfall, and lower wheat-yields at higher temperatures); the possible inception of new bacteria and viruses; and, of course, large-scale human migration (World Bank 2012; Wallace-Well 2019; Richards, Lupton & Allywood 2001). While it is difficult to determine the existential implications of extreme environmental conditions, there are historic precedents for the collapse of human societies under environmental pressures (Diamond 2005). Earth’s “big five” mass extinction events have been linked to dramatic shifts in Earth’s climate (Ward 2008; Payne & Clapham 2012; Kolbert 2014; Brannen 2017), and a Hothouse Earth climate would represent terra incognita for humanity.

Thus, the assumption here is that a Hothouse Earth climate could pose an existential threat to the habitability of the planet for humanity (Steffen et al. 2018., 5). At what point could climate change cross the threshold of an existential threat to humankind? The complexity of Earth’s natural systems makes it extremely difficult to give a precise figure (Rockstrom et al. 2009; ). However, much of the concern about climate change is over the danger of crossing “tipping points,” whereby positive feedback loops in Earth’s climate system could lead to potentially irreversible and self-reinforcing “runaway” climate change. For example, the melting of Arctic “permafrost” could produce additional warming, as glacial retreat reduces the refractory effect of the ice and releases huge quantities of methane currently trapped beneath it. A recent study suggests that a “planetary threshold” could exist at global average temperature of 2°C above preindustrial levels (Steffen et al. 2018; also IPCC 2018). Therefore, the analysis here takes the 2°C rise in global average temperatures as representing the lower-boundary of an existential threat to humanity, with higher temperatures increasing the risk of runaway climate change leading to a Hothouse Earth.

The Paris Agreement on Climate Change set the goal of limiting the increase in global average temperatures to “well below” 2°C and to pursue efforts to limit the increase to 1.5°C. If the Paris Agreement goals are met, then nations would likely keep climate change below the threshold of an existential threat to humanity. According to Climate Action Tracker (2020), however, current policies of states are expected to produce global average temperatures of 2.9°C above preindustrial levels by 2100 (range between +2.1 and +3.9°C), while if states succeed in meeting their pledges and targets, global average temperatures are still projected to increase by 2.6°C (range between +2.1 and +3.3°C). Thus, while the Paris Agreements sets a goal 6 that would reduce the existential risk of climate change, the actual policies of states could easily cross the threshold that would constitute an existential threat to humanity (CAT 2020).

#### And, triggers multiple nuclear hotspots in Southeast Asia, Siberia, and the Arctic.

Klare 20 [Michael, The Nation’s defense correspondent, is professor emeritus of peace and world-security studies at Hampshire College and senior visiting fellow at the Arms Control Association in Washington, D.C. “How Rising Temperatures Increase the Likelihood of Nuclear War”. 1/13/20. https://www.thenation.com/article/archive/nuclear-defense-climate-change/]

President Donald Trump may not accept the scientific reality of climate change, but the nation’s senior military leaders recognize that climate disruption is already underway, and they are planning extraordinary measures to prevent it from spiraling into nuclear war. One particularly worrisome scenario is if extreme drought and abnormal monsoon rains devastate agriculture and unleash social chaos in Pakistan, potentially creating an opening for radical Islamists aligned with elements of the armed forces to seize some of the country’s 150 or so nuclear weapons. To avert such a potentially cataclysmic development, the US Joint Special Operations Command has conducted exercises for infiltrating Pakistan and locating the country’s nuclear munitions. Most of the necessary equipment for such raids is already in position at US bases in the region, according to a 2011 report from the nonprofit Nuclear Threat Initiative. “It’s safe to assume that planning for the worst-case scenario regarding Pakistan’s nukes has already taken place inside the US government,” said Roger Cressey, a former deputy director for counterterrorism in Bill Clinton’s and George W. Bush’s administrations in 2011.

Such an attack by the United States would be an act of war and would entail enormous risks of escalation, especially since the Pakistani military—the country’s most powerful institution—views the nation’s nuclear arsenal as its most prized possession and would fiercely resist any US attempt to disable it. “These are assets which are the pride of Pakistan, assets which are…guarded by a corps of 18,000 soldiers,” former Pakistani president Pervez Musharraf told NBC News in 2011. The Pakistani military “is not an army which doesn’t know how to fight. This is an army that has fought three wars. Please understand that.”

A potential US military incursion in nuclear-armed Pakistan is just one example of a crucial but little-​discussed aspect of international politics in the early 21st century: how the acceleration of climate change and nuclear war planning may make those threats to human survival harder to defuse. At present, the intersections between climate change and nuclear war might not seem obvious. But powerful forces are pushing both threats toward their most destructive outcomes.

Harry Reid Understood Power

In the case of climate change, the unbridled emission of carbon dioxide and other greenhouse gases is raising global temperatures to unmistakably dangerous levels. Despite growing worldwide reliance on wind and solar power for energy generation, the global demand for oil and natural gas continues to rise, and carbon emissions are projected to remain on an upward trajectory for the foreseeable future. It is highly unlikely, then, that the increase in average global temperature can be limited to 1.5 degrees Celsius, the aspirational goal adopted by the world’s governments under the Paris Agreement in 2015, or even to 2°C, the actual goal. After that threshold is crossed, scientists agree, it will prove almost impossible to avert catastrophic outcomes, such as the collapse of the Greenland and Antarctic ice sheets and a resulting sea level rise of 6 feet or more.

Climbing world temperatures and rising sea levels will diminish the supply of food and water in many resource-deprived areas, increasing the risk of widespread starvation, social unrest, and human flight. Global corn production, for example, is projected to fall by as much as 14 percent in a 2°C warmer world, according to research cited in a 2018 special report by the UN’s Intergovernmental Panel on Climate Change (IPCC). Food scarcity and crop failures risk pushing hundreds of millions of people into overcrowded cities, where the likelihood of pandemics, ethnic strife, and severe storm damage is bound to increase. All of this will impose an immense burden on human institutions. Some states may collapse or break up into a collection of warring chiefdoms—all fighting over sources of water and other vital resources.

A similar momentum is now evident in the emerging nuclear arms race, with all three major powers—China, Russia, and the United States—rushing to deploy a host of new munitions. This dangerous process commenced a decade ago, when Russian and Chinese leaders sought improvements to their nuclear arsenals and President Barack Obama, in order to secure Senate approval of the New Strategic Arms Reduction Treaty of 2010, agreed to initial funding for the modernization of all three legs of America’s strategic triad, which encompasses submarines, intercontinental ballistic missiles, and bombers. (New START, which mandated significant reductions in US and Russian arsenals, will expire in February 2021 unless renewed by the two countries.) Although Obama initiated the modernization of the nuclear triad, the Trump administration has sought funds to proceed with their full-scale production, at an estimated initial installment of $500 billion over 10 years.

Even during the initial modernization program of the Obama era, Russian and Chinese leaders were sufficiently alarmed to hasten their own nuclear acquisitions. Both countries were already in the process of modernizing their stockpiles—Russia to replace Cold War–era systems that had become unreliable, China to provide its relatively small arsenal with enhanced capabilities. Trump’s decision to acquire a whole new suite of ICBMs, nuclear-armed submarines, and bombers has added momentum to these efforts. And with all three major powers upgrading their arsenals, the other nuclear-weapon states—led by India, Pakistan, and North Korea—have been expanding their stockpiles as well. Moreover, with Trump’s recent decision to abandon the Intermediate-Range Nuclear Forces (INF) Treaty, all major powers are developing missile delivery systems for a regional nuclear war such as might erupt in Europe, South Asia, or the western Pacific.

Runaway warming: Expanses of ice are melting at unprecedented rates, with potentially grim geopolitical repercussions. (David Silverman / Getty Images)

All things being equal, rising temperatures will increase the likelihood of nuclear war, largely because climate change will heighten the risk of social stress, the decay of nation-states, and armed violence in general, as I argue in my new book, All Hell Breaking Loose. As food and water supplies dwindle and governments come under ever-increasing pressure to meet the vital needs of their populations, disputes over critical resources are likely to become more heated and violent, whether the parties involved have nuclear arms or not. But this danger is compounded by the possibility that several nuclear-armed powers—notably India, Pakistan, and China—will break apart as a result of climate change and accompanying battles over disputed supplies of water.

Together, these three countries are projected by the UN Population Division to number approximately 3.4 billion people in 2050, or 34 percent of the world’s population. Yet they possess a much smaller share of the world’s freshwater supplies, and climate change is destined to reduce what they have even further. Warmer temperatures are also expected to diminish crop yields in these countries, adding to the desperation of farmers and very likely resulting in widespread ethnic strife and population displacement. Under these circumstances, climate-related internal turmoil would increase the risk of nuclear war in two ways: by enabling the capture of nuclear arms by rogue elements of the military and their possible use against perceived enemies and by inciting wars between these states over vital supplies of water and other critical resources.

The risk to Pakistan from climate change is thought to be particularly acute. A large part of the population is still engaged in agriculture, and much of the best land—along with access to water—is controlled by wealthy landowners (who also dominate national politics). Water scarcity and mismanagement is a perennial challenge, and climate change is bound to make the problem worse. Climate and Social Stress: Implications for Security Analysis, a 2013 report by the National Research Council for the US intelligence community, highlights the danger of chaos and conflict in that country as global warming advances. Pakistan, the report notes, is expected to suffer from inadequate water supplies during the dry season and severe flooding during the monsoon—outcomes that will devastate its agriculture and amplify the poverty and unrest already afflicting much of the country. “The Pakistan case,” the report reads, “illustrates how a highly stressed environmental system on which a tense society depends can be a source of political instability and how that source can intensify when climate events put increased stress on the system.” Thus, as global temperatures rise and agriculture declines, Pakistan could shatter along ethnic, class, and religious lines, precisely the scenario that might trigger the sort of intervention anticipated by the US Joint Special Operations Command.

Assuming that Pakistan remains intact, another great danger arising from increasing world temperatures is a conflict between it and India or between China and India over access to shared river systems. Whatever their differences, Pakistan and western India are forced by geography to share a single river system, the Indus, for much of their water requirements. Likewise, western China and eastern India also share a river, the Brahmaputra, for their vital water needs. The Indus and the Brahmaputra obtain much of their flow from periods of heavy precipitation; they also depend on meltwater from Himalayan glaciers, and these are at risk of melting because of rising temperatures. According to the IPCC, the Himalayan glaciers could lose as much as 29 percent of their total mass by 2035 and 78 percent by 2100. This would produce periodic flooding as the ice melts but would eventually result in long periods of negligible flow, with calamitous consequences for downstream agriculture. The widespread starvation and chaos that could result would prove daunting to all the governments involved and make any water-related disputes between them a potential flash point for escalation.

As in Pakistan, water supply has always played a pivotal role in the social and economic life of China and India, with both countries highly dependent on a few major river systems for civic and agricultural purposes. Excessive rainfall can lead to catastrophic flooding, and prolonged drought has often led to widespread famine and mass starvation. In such a setting, water management has always been a prime responsibility of government—and a failure to fulfill this function effectively has often resulted in civil unrest. Climate change is bound to increase this danger by causing prolonged water shortages interspersed with severe flooding. This has prompted leaders of both countries to build ever more dams on all key rivers.

India, as the upstream power on several tributaries of the Indus, and China, as the upstream power on the Brahmaputra, have considered damming these rivers and diverting their waters for exclusive national use, thereby diminishing the flow to downstream users. Three of the Indus’s principal tributaries, the Jhelum, Chenab, and Ravi rivers, flow through Indian-controlled Kashmir (now in total lockdown, with government forces suppressing all public functions). It’s possible that India seeks full control of Kashmir in order to dam the tributaries there and divert their waters from Pakistan—a move that could easily trigger a war if it occurs at a time of severe food and water stress and one that would very likely invite the use of nuclear weapons, given Pakistan’s attitude toward them.

The situation regarding the Brahmaputra could prove equally precarious. China has already installed one dam on the river, the Zangmu Dam in Tibet, and has announced plans for several more. Some Chinese hydrologists have proposed the construction of canals linking the Brahmaputra to more northerly rivers in China, allowing the diversion of its waters to drought-stricken areas of the heavily populated northeast. These plans have yet to come to fruition, but as global warming increases water scarcity across northern China, Beijing might proceed with the idea. “If China was determined to move forward with such a scheme,” the US National Intelligence Council warned in 2009, “it could become a major element in pushing China and India towards an adversarial rather than simply a competitive relationship.”

Severe water scarcity in northern China could prompt yet another move with nuclear implications: an attempted annexation by China of largely uninhabited but water-rich areas of Russian Siberia. Thousands of Chinese farmers and merchants have already taken up residence in eastern Siberia, and some commentators have spoken of a time when climate change prompts a formal Chinese takeover of those areas—which would almost certainly prompt fierce Russian resistance and the possible use of nuclear weapons.

In the Arctic, global warming is producing a wholly different sort of peril: geopolitical competition and conflict made possible by the melting of the polar ice cap. Before long, the Arctic ice cap is expected to disappear in summertime and to shrink noticeably in the winter, making the region more attractive for resource extraction. According to the US Geological Survey, an estimated 30 percent of the world’s remaining undiscovered natural gas is above the Arctic Circle; vast reserves of iron ore, uranium, and rare earth minerals are also thought to be buried there. These resources, along with the appeal of faster commercial shipping routes linking Europe and Asia, have induced all the major powers, including China, to establish or expand operations in the region. Russia has rehabilitated numerous Arctic bases abandoned after the Cold War and built others; the United States has done likewise, modernizing its radar installation at Thule in Greenland, reoccupying an airfield at Keflavík in Iceland, and establishing bases in northern Norway.

Increased economic and military competition in the Arctic has significant nuclear implications, as numerous weapons are deployed there and geography lends it a key role in many nuclear scenarios. Most of Russia’s missile-carrying submarines are based near Murmansk, on the Barents Sea (an offshoot of the Arctic Ocean), and many of its nuclear-armed bombers are also at bases in the region to take advantage of the short polar route to North America. As a counterweight, the Pentagon has deployed additional subs and antisubmarine aircraft near the Barents Sea and interceptor aircraft in Alaska, followed by further measures by Moscow. “I do not want to stoke any fears here,” Russian President Vladimir Putin declared in June 2017, “but experts are aware that US nuclear submarines remain on duty in northern Norway…. We must protect [Russia’s] shore accordingly.”

#### The plan solves utility emissions---that's sufficient to stop extinction

Murray 18 [Michael, President of Mission:Data, has over fifteen years of experience with building automation, energy management, metering and public utility regulation. “IS IT TIME TO ENFORCE ANTI-TRUST LAWS AGAINST UTILITIES?”. 10/18/18. http://www.missiondata.io/news/2018/10/18/is-it-time-to-enforce-anti-trust-laws-against-utilities]

Since the electric utility industry’s inception over a century ago, utilities have acted in -- or meddled with, depending upon your point of view -- markets adjacent to the traditional power business. APS, in Arizona, sold energy-hogging washing machines and dryers in retail locations as late as the 1970s in order to increase demand for power. The founder of Commonwealth Edison, Samuel Insull, who was once Thomas Edison’s personal secretary, realized that peak demand occurred in the evening due to “illumination,” and so he built and purchased streetcar lines, sold electric irons and stimulated demand from various appliances usable during the daytime in order to improve power plant utilization around the clock. Even the Tennessee Valley Authority, a federal agency, offered substantial rebates for appliances in order to induce demand for electrons.

Despite all the talk of “natural monopoly,” electric utilities have played well outside the poles-and-wires sandbox for decades. Even today, utilities are in the news for building their own electric vehicle charging infrastructure. Some would say these actions, which are outside of the state statutory mandate to provide “safe and reliable” electric service, are sometimes thought to be sensible, or even desirable, evolutions of a maturing industry. But anti-trust enforcement is an often-ignored tool in the toolbox that deserves reexamination for at least three reasons.

First, the pace of climate change is frightening enough that scientists and world leaders are calling for unprecedented, dramatic shifts in American energy systems in the next twelve years. There is a significant possibility that electric utilities aren’t up to the task -- at least on the timescale needed. Looking at the railroads or telecommunication industries throughout history, regulated monopolies have rarely, if ever, adapted to new conditions in any timeframe that scientists now consider reasonable. (We could refer to electric utilities’ pace of change as “glacial,” but the irony is that the world’s glaciers are melting much faster than anticipated.) Can large, bureaucratic utilities compress their clockspeeds in order to rapidly decarbonize? It seems much more likely that the marketplace of distributed energy resources (DERs) could provide precisely the velocity that utilities lack. Connecting DERs to the grid as quickly as possible can likely only be accomplished by harnessing market forces.

Second, electric utilities have long used token gestures toward clean energy or “consumer empowerment” to neutralize opponents in ways that are anti-competitive. For example, one utility argued to us that third party data access was unnecessary because the utility offered its own website and mobile app. The utility has a state-granted monopoly over power distribution, yet where in statute did the state grant the utility a monopoly on websites and smartphone apps that use customer energy data? Similarly, utilities with energy efficiency (EE) programs have long argued that the existence of such programs make wholesale business model changes unnecessary. Gradualism, it is argued, is sufficient, and saving 0.5% to 1.0% of energy demand per year with EE programs is good enough. Unfortunately, however, utilities can stifle competition in the process. Why enable a truly competitive market for EE when you can control it entirely? In the wake of Cambridge Analytica, many see Facebook’s actions to increase user privacy as merely a ploy to delay sweeping new legislation from Congress. DER proponents should similarly view utilities’ token gestures for what they are -- small concessions that prolong the utilities’ dominance at the expense of cheaper, cleaner and more reliable distributed resources from a competitive market.

Third, new energy around anti-trust enforcement has recently entered the national political scene. America’s 40-year low in company formation coupled with the reaction to Facebook’s Cambridge Analytica scandal (which we wrote about before) have caused members of Congress to ask not only whether individuals’ data are adequately protected, but whether market concentration in the hands of a few players is in part responsible for the vulnerability in the first place. As recently as this week, twelve state Attorneys General wrote to the Federal Trade Commission expressing concern over data monopolies’ effects on competition:

“[T]here is concern that the immense advantages certain firms have in consumers’ data...may effectively block new entry or expansion, thereby limiting choice and, in some cases, harming competition.

“Firms that have obtained a disproportionate advantage in one line of business may find it easy to abuse that advantage by applying it to other lines of business in order to keep out competitors – who may be equally or more efficient but for the data advantage carried over from the first market. This could be of concern with new lines of business, and perhaps particularly in the context of new services. For example, firms with an asymmetric advantage in data might be able to identify competitive rivals at a very early stage, and perhaps eliminate competition…”

As data monopolies such as Facebook come under increasing scrutiny by politicians, we can harness the national attention on this topic to ask: Are electric and gas utilities data monopolies, too?

In our recent report, we highlighted the “demarcation point” in telecommunications. This is the point where the public telephone system ends and the customer’s in-home wiring begins. The FCC’s 1968 Carterfone decision defined this electrical interface and limited the telco’s role and responsibility to their side of the fence, thereby allowing market innovations on the customer’s side of the system such as wireless telephony, voice mail and modems. Without the Carterfone decision, we might still be using landline telephones manufactured by AT&T. Ma Bell would sue you for connecting another manufacturer’s telephone to their network.

Similarly, electric utilities will tend to exert their power over anything that touches the electricity system, whether that serves the public interest or not. Anti-trust enforcement by the Federal Trade Commission, Department of Justice and state Attorneys General is worthy of consideration to meet our pro-competition, pro-consumer and pro-environment goals. The DER community could use a fascinating 1976 Supreme Court Case, Cantor v. Detroit Edison Co., as a model: A retailer of lightbulbs sued the utility, Detroit Edison, for using its monopoly power to unfairly restrain the sale of lightbulbs in violation of the Sherman Anti-Trust Act. The Supreme Court agreed that state regulation does not exempt the utility from certain anti-trust laws.

There are limits to the utility’s monopoly. As a strategy for the DER community, settling with utilities for another decade of uninventive EE programs in which utilities pick winners and control the market is not going to meet our objectives. It’s time to look at anti-trust law to enforce limitations on utilities and mandate utility-to-DER interoperability standards. After all, restrictions on “behind-the-meter” activities of utilities are not only necessary to protect competition, but they may be necessary to save the planet.

#### Otherwise utilities turn rate changes into artificial barriers against new DERs entrants

Wara 17 [Michael, Associate Professor and Justin M. Roach, Jr. Faculty Scholar, Stanford Law School. “COMPETITION AT THE GRID EDGE: INNOVATION AND ANTITRUST LAW IN THE ELECTRICITY SECTOR”. 10/25/17. https://www.nyuelj.org/wp-content/uploads/2016/09/Wara\_ready\_for\_printing\_v2.pdf]

Following the release of Disruptive Challenges, utilities around the country, but especially in key solar markets, have responded in two significant ways to the challenge presented by distributed solar energy. First, they have sought to change rate structures to eliminate the incentives their customers may have to adopt the new technology, thereby suppressing the trigger of the death spiral.20 Second, and to a lesser extent, they have entered into direct competition with the companies that seek to provide distributed solar to electricity consumers, thereby positioning themselves to succeed in the new market environment to which the industry is transitioning.

Electric utilities have shareholders whose interests they are legally obligated to protect. And utilities appear to be acting to head off the nascent threat to a business model that has served them well for more than a century. Depending on one’s perspective, and on the details, these regulatory changes amount to either a more accurate allocation of grid costs or the erection of barriers to prevent entry of new, innovative competition. Utilities may be protecting their non-solar customers from the burden of subsidizing those who install solar, or they may be working to ensure that competition with their entrenched monopolies never occurs. Telling the difference has become a key unaddressed policy and legal question for public utility commissions.

Traditionally, utilities have billed their customers with rate structures based on energy sales. A customer’s bill was a function of their total energy consumption, measured in kilowatt hours (kWh) over a billing period, usually a month. In the face of new competition, utilities and their regulators are rapidly reassessing this energy sales-based rate structure and moving to a more complex structure, sometimes for all customers, but more often only for those customers that choose to install distributed energy resources. The new rate structures involve either a large fixed charge, independent of usage; a demand charge, which is set based upon a customer’s maximum rate of consumption during the billing period; or both, in addition to a charge for energy consumption. These rate structures are not novel—they have long been common for large customers such as large commercial or industrial customers, but they have never before been applied to the residential customers whose installation of solar PV poses a competitive threat to utilities.

Normally, when firms with market power move to quash competition, antitrust liability under the Sherman Act, or at least the risk of it, is created. However, because investor owned electric utilities are state-chartered monopolies, they are generally exempt from federal regulation of their anticompetitive conduct. But this exemption from antitrust liability is not unlimited. Moreover, the contours of the exemption are relatively unclear given current U.S. Supreme Court jurisprudence, especially in the face of a radical change in the technological structure of the industry. Thus, moves by utilities to prevent entry or forestall competition create at least a risk of antitrust liability, even if approved by their PUCs.

The division of regulatory authority between the federal and state governments under the Federal Power Act allocates oversight of wholesale electricity sales to the Federal Energy Regulatory Commission and oversight of retail electricity sales to state PUCs. Because the technological and economic challenge to utilities is coming from the retail customers of utilities rather than from, for example, large power plants that wish to sell power across the utilities’ transmission systems, state regulators will make the key decisions governing the competition between solar energy providers and regulated utilities. The Federal Power Act leaves to states the authority to regulate retail and intrastate energy transactions.22 The heart of this jurisdiction is the authority of state public utility commissions to regulate the rates that utilities charge their retail customers for power sales. Thus, public utility commissions are in the position of having to manage a difficult transition from a highly stable monopoly structure to a much more dynamic and competitive one, although one in which grid-supplied electric energy will remain central for many years to come.

Attempts to ensure market competition, or to avoid the social costs that occur when markets are not sufficiently competitive, require taking account of industries’ technological and economic structure. Traditionally, in the United States, competition has been policed in structurally competitive markets using antitrust law.23 However, in markets that are best characterized as natural monopolies, a grant of monopoly power has often been provided to a single firm that is then subject to an obligation to serve all customers and to price regulation via cost-of-service ratemaking.24 While both systems are far from perfect,25 many legal and economic scholars have argued that in their appropriate contexts— a structurally competitive market or a natural monopoly—these approaches fill a similar need.26 The most challenging context in which to apply either, however, is when industries undergo transition, often because of technological change, between a stable, naturally monopolistic structure, and unstable, structurally competitive one.2

In this Article, I detail the utility industry response to the call to action in Disruptive Challenges. I present evidence for the widespread existence of potentially anticompetitive actions by utilities from a survey of rate cases. My survey shows that, from 2013 to 2015, utilities in at least 19 states sought to restructure rates to reduce competition from distributed energy resources. Some utilities are also going into direct competition with solar providers. I explore the legal implications of this response by today’s utility industry to current and anticipated competition from distributed solar generation. I examine the ambiguities that exist in the current doctrine on utility antitrust immunity. I then suggest approaches for public utility commissions that may serve to reduce the anticompetitive aspects of new rate structures and so reduce the risk of antitrust liability for electric utilities as they respond to emerging competition from distributed energy resources. Finally, I argue that in managing responses to competition by electric utilities, public utility commissions must exercise oversight of the competitive impacts of rate cases.

#### Non price barriers ALONE stop DERs adoption

Wara 17 [Michael, Associate Professor and Justin M. Roach, Jr. Faculty Scholar, Stanford Law School. “COMPETITION AT THE GRID EDGE: INNOVATION AND ANTITRUST LAW IN THE ELECTRICITY SECTOR”. 10/25/17. https://www.nyuelj.org/wp-content/uploads/2016/09/Wara\_ready\_for\_printing\_v2.pdf]

Of course, this cannot be the whole story. Regulated utilities recognize the competitive threat, exercise market power, and are likely to respond in anticompetitive ways if permitted to do so. One would expect that regulated utilities, seeking to protect their shareholders’ value, would act to modify rates in ways that would forestall or eliminate new competitive entrants. Rates are just one method of creating barriers to entry for new technologies that may reduce returns for grid-supplied energy.

Other methods include rules that explicitly limit or forbid such competition or rules that erect non-price barriers to entry such as complicated, expensive, or time-consuming processes governing connection of DERs.43 The evidence suggests that utilities can, and to some degree are, engaging in a number of non-price-related practices that would normally raise competition concerns. Utility permission is required to interconnect distributed energy resources with the grid.44 Getting interconnection permission often results in varying time delays.45 Furthermore, it can result in substantial and unpredictable costs because utilities can require mitigation for new distributed energy resources in the form of distribution system investments.46 Utilities also have important informational advantages regarding where on the grid distributed energy may be most valuable.47

Nevertheless, given that most utilities have to routinely submit rate cases to their commissions, attempts to modify rates to forestall or eliminate competition are to be expected given the business incentives facing the utilities. The traditional job of the commission in this context is to evaluate these rates and to protect ratepayers—presumably balancing the interests of customers both with and without DERs against the expectation of utilities for a fair return on their investment. Generally speaking, protecting the interests of other firms that might compete with the utility, or considering the impacts of a rate on innovation, are not part of the process.

#### DERs are a renewable accelerant and solve warming

Roberts 21 [David, Clean Energy Expert with 15 Years of Experience, CE Writer @ Vox, Previously Writer @ Grist. “Rooftop solar and home batteries make a clean grid vastly more affordable”. 5/28/21. https://www.volts.wtf/p/rooftop-solar-and-home-batteries]

Energy nerds love arguing over the value of distributed energy resources (DERs), the rooftop solar panels and customer-owned batteries that are growing more popular by the day. There’s a fight in California right now over the value of energy from rooftop solar, just the latest skirmish in a long war that has ranged over numerous states.

The conventional wisdom in wonk circles is that the value provided by DERs is not sufficient to overcome the fact that the energy they produce is, on a per-kWh basis, much more expensive than that produced by utility-scale solar, wind, and batteries (residential solar is roughly 2.5 times as expensive as utility-scale solar, according to NREL).

For that reason, many wonks view DERs as a kind of boutique energy and argue that public funds are better spent on utility-scale energy.

Turns out: no, that’s wrong. Some groundbreaking new modeling demonstrates that the value of DERs to the overall electricity system is far greater than has typically been appreciated.

The work didn’t get the attention it deserved when it came out in late December, so I want to spend some time with it. First, though, let’s get clear on what we’re talking about.

The misguided battle between centralized and distributed energy

To understand the difference between centralized and distributed energy, it’s important to understand the distinction between transmission grids, the high-voltage power lines that carry electricity over longer distances, and distribution grids, the nests of low-voltage power lines (strung from the familiar brown poles) that carry electricity to local consumers. If the transmission grid is the interstate highway system of electricity, distribution grids are the local road systems that branch off those main trunks.

Centralized energy generally refers to utility-scale power generators (or energy storage) hooked up directly to the transmission grid: coal or natural gas plants, wind farms, solar fields, grid-scale battery stacks, what have you. The big stuff.

Distributed energy consists of anything that generates, stores, or manages electricity on distribution grids: rooftop solar panels, ground-mounted “community solar” arrays, consumer batteries, electric vehicles, building energy management software, and the like. (And then there’s truly distributed energy, in the form of off-grid installations that don’t connect to any larger grid. We won’t be getting into that today.)

Some distributed solar covering a parking lot. (Photo: Getty Images)

Some distributed solar covering a parking lot. (Photo: Getty Images)

To paint in broad and somewhat crude strokes, advocates for centralized renewable energy tend to view advocates for distributed energy as crunchy pastoral proto-hippies who can’t handle modernity. They note that utility-scale energy is cheaper and capable of powering highly energy-dense modern economies, whereas distributed energy is expensive and diffuse.

Advocates for distributed energy tend to view advocates for centralized energy as corporate capitalists in thrall to perpetual growth. They note that distributed energy brings a range of benefits, from resilience and independence to savings on avoided infrastructure, whereas utility-scale energy tends to do greater damage to landscapes and concentrate economic power.

Like many disputes in the energy world, this one has hardened into an identity battle, which is annoying and unproductive, since the answer, like with so many other disputes, is both-and.

Nonetheless, it’s worth noting that advocates for distributed energy have been at something of a disadvantage to date. It can be devilishly difficult to quantify the benefits of DERs, so a lot of the discussion gets into hand-wavey intangibles.

It can be especially difficult to quantify the benefits of DERs to larger grid systems, because energy modeling to date has effectively ignored distribution grids (which represent about a third of US spending on electricity). It has treated them purely as load, as demand to be satisfied, rather than as active, flexible participants in grid management.

Until now!

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Or, until a few months ago anyway. In December, energy modeler Christopher Clack (a familiar name to Volts readers) and his team at Vibrant Clean Energy (VCE) debuted a new way to model the energy system that takes into account DERs and the services they provide. They used it to study the effect of DERs on the electricity system and the results are summarized in “A New Roadmap for the Lowest Cost Grid.” (Full technical report here; slideshow presentation here.)

Spoiler: the cheapest possible carbon-free US grid involves vastly more centralized renewable energy, but it also involves vastly more distributed energy. What’s more, far from being alternatives, they are complements: the more DERs you put in place, the more centralized renewables you can put on the system. DERs are a utility-scale renewable accelerant.

The practical implication is that going all out on DERs is to everyone’s benefit, up and down the electricity supply chain, from utilities to consumers.

It is difficult to exaggerate just what a revolutionary change this represents in energy modeling and how much it turns conventional wisdom on its head. By making distribution grids visible to their model and co-optimizing those grids with the transmission system, the team at VCE uncovered a source of grid flexibility that could save a decarbonizing electricity system some half a trillion dollars through 2050. That’s real money.

(If you want to take a deep dive into the material, check out this interview with Clack on Chris Nelder’s Energy Transition Show. It is gleefully nerdy; I cannot recommend it highly enough.)

The cheapest energy scenario is clean and distributed

At the heart of VCE’s work is Clack’s state-of-the-art modeling tool: Weather-Informed energy Systems: for design, operations and markets planning (WIS:dom). It allows resolution down to two-mile square areas and makes dispatch decisions every five minutes. It takes into account granular weather data stretching over decades, climate impacts, policy, all forms of generation, storage, transmission, and on and on. VCE boasts that it “leverages 10,000 times more data points than traditional models.”

For this study, WIS:dom was augmented to better understand and represent distribution grids, so that it could bring transmission and distribution systems together in one system and co-optimize them. It was given better information about the costs and capabilities of DERs and more options; for example, instead of spinning up a new generator to meet peak demand, it could draw on distributed solar and batteries.

The transmission/distribution interface. (VCE)

The transmission/distribution interface. (VCE)

No one to Clack’s knowledge has done this before, so there was a lot of experimenting to get it right. “I had to spend a lot of money and time and resources upgrading the model to include this, with a lot of failures along the way,” says Clack. “That's why I'm confident that we did it first, because I spent a lot of time trying to find someone else that had done it, so I didn’t have to do the hard work.”

The modeling question was: if a high-resolution optimization tool is given DERs as an option, will it choose to deploy them? If so, how much?

The broader social question was: can DERs help lower the overall costs of a clean electricity system? If so, by how much?

The paper presents four core scenarios (which were run across a range of geographies):

BAU (business as usual), which includes existing policies and mandates but otherwise lets economics drive dispatch decisions; it deploys WIS:dom in a way that mimics traditional models;

BAU-DER, which does the same but uses the augmented form of WIS:dom, with greater visibility into distribution systems;

CE (clean energy), which models a system that reduces power sector carbon emissions 95 percent from 1990 levels by 2050; WIS:dom mimics traditional models;

CE-DER, which models a 95 percent reduction but uses the augmented form of WIS:dom.

To skip straight to the results: if you make DERs an option for the model, it deploys an absolute boatload of them (spending about $10 billion extra over the first 10 years), and by doing so substantially reduces overall system costs.

(VCE)

(VCE)

BAU-DER is $301 billion cheaper than BAU (the blue line above), which means we would save money from day one by deploying more DERs even if we didn’t care about climate change.

CE-DER is $473 billion cheaper than CE (the green line), which means DERs will make the decarbonization of electricity much less expensive than doing it all with centralized renewables and storage.

And here’s the kicker: CE-DER is $88 billion cheaper than BAU (the red line), which means, economically speaking, we’d be better off reducing electricity emissions by 95 percent using DERs than continuing with the status quo.

(And this is all just the pure economics — it leaves out the enormous health savings and environmental justice benefits of reduced point-source pollution.)

Whether you’re concerned about climate change or not, whether you want to reduce emissions or not, whether you care about the health and resilience of local communities or not, deploying DERs brings down system costs. It’s the fiscally responsible thing to do.

Now, note the shape of the red line above (and to a lesser extent, the green line). Scenarios that decarbonize using DERs are a smidgen more expensive for the first 10 years or so because they use those early years to deploy an enormous quantity of DERs.

The US currently has about 98 gigawatts of rooftop solar and less than a gigawatt of distributed energy storage installed. Through 2025, CE-DER deploys an additional 75 gigawatts of distributed solar and 27 gigawatts of distributed storage; by 2035, it is 200 and 90, respectively. (By 2050, it is 247 and 160.)

That is an absolute DER building binge, starting now.

(VCE)

(VCE)

After that early period of heightened investment, though, savings begin to skyrocket as DERs pay off in system benefits.

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DERs make everything else on the grid work better

For the entire history of electricity up until about five minutes ago, grid operators viewed electricity demand as an exogenous variable, a set figure they had to meet with supply, not something they had much control over.

The key to the value of DERs is that they make electricity demand more controllable. With energy generation and storage scattered throughout distribution grids, grid operators have a way to move energy around, both geographically and temporally, without firing up more power plants. They can absorb extra energy if there’s a dip in demand or produce extra energy if there’s a spike. The overall effect is to smooth out the “demand curve.”

Look at the thick black line on the top right graph below — that’s the distribution demand curve throughout a representative year:

Look at the demand curve on the top right and then on the bottom right: flatter! (VCE)

Look at the demand curve on the top right and then on the bottom right: flatter! (VCE)

Now note the same black line on the bottom right graph. By satisfying the little demand peaks with distributed solar and storage, the demand for utility-scale energy is leveled off.

Here’s a graph that shows a “load duration curve,” which reveals how high demand is, for how often in the year, and how DERs affect it:

(VCE)

(VCE)

As you can see by the sharp spike on the left, there are relatively rare periods of extremely high demand (peaks). The problem is that the current electricity system has to be sized to meet those peaks, even if that means many power plants end up idle most of the time. Clack says that today, roughly 20 to 25 percent of generation capacity on the grid — some 300-350 gigawatts — covers around 3 percent of the energy load each year. (This, in a nutshell, is why electricity systems everywhere are so overbuilt.)

The light blue-shaded area on the curve shows the reduction in demand that DERs can provide (the dark blue on the right is the increase in demand). Not only can DERs “shave the peak” by an average of 17 percent nationwide, they can reduce the demand for utility-scale energy for 80 percent of the hours of the year. They make the load duration curve more level as well.

These demand-leveling effects bring four big benefits:

First, if you don’t have those big peaks in demand for utility-scale energy, then you don’t need that 20 to 25 percent of capacity that only runs during peaks. Not building those plants, or shutting them down early, saves lots of money.

Second, a more level demand curve means that all generators on the system will run more consistently, with fewer ramps up and down, at closer to their full capacity, helping to maximize their value.

Third, a more level demand curve means that transmission congestion will be reduced and transmission assets will be more efficiently utilized. (In one of my Transmission Month posts, I discussed “energy storage as a transmission asset.” This is the same idea, on a broader scale.)

Fourth, DERs offer the system the option to shift demand to meet variable supply, rather than always forcing it to shift supply to meet demand. Shifting demand is often much cheaper.

These benefits explain why CE-DER is so much cheaper than CE, and even than BAU. They explain why, even though rooftop solar may cost more than centralized solar on a per-kWh basis, its value is greater.

Infusing distribution systems with DERs allows grid operators more stability and more options — including more renewables.

DERs enable more utility-scale renewables

Wind and solar are cheap, but they are variable. They come and go on their own schedule, outside of our control. There will be times — seconds, minutes, hours, sometimes weeks and months — when wind and solar dip and something else is needed to fill the gaps.

Conventionally, this role is played by dispatchable generators that can be turned up and down at will — these days, mostly natural gas plants. Given that most natural gas plants, at least those without carbon capture, will have to be phased out in a decarbonized system, there’s a hunt on for “firm” zero-carbon alternatives — think nuclear, hydro, natural gas or biomass with carbon capture, or geothermal.

But VCE’s modeling shows that a big chunk of that role can be played by DERs, which Clack calls a “firming agent on the load.”

By bringing demand more under grid operators’ control, DERs virtually eliminate curtailment, or discarding of renewable energy due to temporary oversupply, through 2045. Just as they allow transmission to be used more effectively, they allow us to consume more of the energy generated by existing utility-scale renewables.

They also prevent the familiar problem of “value deflation” — more wind and solar energy at particular times and places competes with existing wind and solar energy from the same times and places — by giving grid operators a whole series of time- and location-specific demand knobs that they can turn up or down at will to better accommodate renewables.

By preventing value deflation, DERs will allow for more new renewables on the system (and the retirement of more thermal and fossil generation). That’s why the CE-DER scenario builds more utility-scale wind and solar than the CE scenario. CE-DER builds 800 gigawatts of utility wind, 800 of utility solar, and 200 of utility storage, whereas CE builds 60 gigawatts less wind and 50 less solar (though slightly more batteries).

By enabling renewable energy to be moved around, DERs unlock more of it — with, again, enormous public health benefits that are not captured in the model.

Put technically, as Clack told Nelder, “the model says that distributed [solar] and storage in some combination ends up being higher value than the differential in the [levelized] cost of utility-scale solar and distributed solar.”

Put more colloquially, though it will require enormous upfront investment in the coming decade, laying a quilt of DERs over the nation’s distribution systems is the best thing we can possibly do to enable the rapid emission reductions we will need in the decade after.

DERs are not a boutique version of, or a distraction from, utility-scale renewables; they are a necessary complement, an enabler and accelerator.

(VCE)

(VCE)

DERs will mean more jobs

VCE did some analysis estimating that the DER-enhanced scenarios would add an additional million jobs per year relative to conventional scenarios.

It stands to reason that a huge deployment of DERs would create lots of jobs. These are very hands-on, labor-intensive projects. And since distribution systems are ubiquitous in the US, it would create jobs in every part of the country (though not uniformly).

I’m generally suspicious of employment projections, so I don’t know how much stake to put in the particular figure, but we can be confident that more DERs = more jobs.

DERs could hasten the collapse of existing power markets

VCE’s modeling shows that current electricity markets, if they are not reformed, basically collapse in the next 10 to 20 years. DERs will hasten that collapse in two ways.

First, they will reduce demand peaks, which produce a great deal of value in current markets. Lots of peaker plants will get cancelled or shut down and peaker money will dry up.

Second, DERs will enable more utility-scale wind and solar, which have zero marginal costs. They are all upfront capital costs; once a solar panel is in place, it doesn’t cost it anything more to produce the next kW. It can bid into markets at $0. Pretty soon, so much of the market’s power will come from zero-marginal-cost sources that prices will be $0 most of the year, and $0 means zero profit for participating generators.

Electricity markets were built for fossil fuel generators. They need reform — but that’s a topic for a different post. (This is a good start.)

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Clean electrification boosts the value of DERs

An intriguing note: Clack says that if WIS:dom is told not just to decarbonize electricity but to decarbonize the whole economy (i.e., electrify everything), the value of DERs to the grid effectively doubles.

An economy-wide decarbonization scenario that makes use of DERs saves a trillion dollars relative to one that doesn’t. VCE will have a new report on economy-wide decarbonization coming out soon.

DERs also provide a range of co-benefits

VCE’s modeling only captures DERs’ contribution to overall grid performance and cost. It does not capture many of the benefits that have long attracted customers to them: resilience against brownouts and blackouts, the capacity to go off-grid temporarily (or permanently), independence from the whims of utilities and state regulators, reduced personal greenhouse gas emissions, and most of all, lower electricity bills.

All of those benefits will help drive early adoption of DERs as their value to the grid ramps up (though they should be boosted by utility, state, and federal incentives).

The value of DERs should be visible in all models and states

Clack says that it’s just four paragraphs of code that open WIS:dom up to distribution grids — other models, including the models that utilities use in planning, could easily replicate this.

“One of the reasons I was so keen on having it be relatively simplistic is, it should be able to be adopted by other models,” he says. “Maybe they wouldn't show as much savings as we do, because of different model logic, but I'm pretty confident they will show similar trajectories.”

Today, we have released our full technical report on the "Why Local Solar and Storage Costs Less". Two weeks ago, we released the main findings: savings of $473 billion when co-optimizing distribution. This released provides more details!

Image

December 14th 2020

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This is just one more area where outdated utility models and practices are keeping costs too high and the clean-energy transition too slow. Utilities have traditionally been hostile to DERs, viewing them as competitors or net costs, but VCE’s modeling demonstrates what should have been obvious: having flexible generation and storage infused throughout distribution grids offers a fantastic tool to help stabilize a grid with growing renewables and increasing electric loads and bring costs down for all ratepayers.

#### Integration in the US is modeled globally.

Shen 21 [Bo Shen, Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory, Fredrich Kahrl, 3rdRail Inc., and Andrew J. Satchwell, Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory, "Facilitating Power Grid Decarbonization with Distributed Energy Resources: Lessons from the United States", Annual Review of Environment and Resources, vol. 46, no. 1, 7/2/21, https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-111320-071618]

Globally, renewable energy is already playing a significant and growing role in electricity systems. The world's renewable energy power generation capacity more than doubled from 1,223 GW in 2010 to 2,532 GW in 2019 (9). Wind and solar account for most of the recent growth in renewable generation. The installed capacity of wind energy increased from 181 GW in 2010 to 622 GW in 2019 while the installed solar photovoltaic capacity increased significantly from 40 GW in 2010 to 579 GW in 2019 (9).

The United States is among the world's fastest-growing countries in terms of both renewable installed capacity and power generation (10). Renewable electricity generation in the United States doubled from 2008 to 2018, with wind and solar generation accounting for the majority of growth (11). As a result of rapid growth, the share of nonhydro renewable generation rose from 3% of US electricity generation in 2008 to 10% in 2018 (11, 12). The share of renewable generation is expected to continue to grow in order to meet state-level renewable energy targets and state and federal climate goals.

Approximately half of the growth in renewable energy deployment in the United States can be attributed to state-level renewable energy targets (13). As of 2019, 13 states as well as Washington, DC, and Puerto Rico had either enacted legislation or issued executive orders with a commitment to achieving either 100% renewable energy or 100% clean energy goals (14).1 Figure 1 shows state-level renewable energy targets adopted across the United States by the end of 2019.

[FIGURE 1 OMITTED]

Despite ambitious renewable energy targets, major obstacles must be overcome to enable future energy systems to economically and reliably operate with high penetration of variable renewable energy (VRE). As the US Department of Energy points out, “[o]ne of the greatest challenges to integrating VRE lies in managing its effects (variability, uncertainty, location specificity, nonsynchronous generation, and low capacity factor) on grid operations and planning” (15, p. 61). With the large-scale deployment of wind and solar generation on both the grid side and customer side, transmission system operators and distribution utilities face new operational challenges. Distributed energy resources (DERs) are emerging as a potential solution alongside traditional generation, transmission, and distribution infrastructure for addressing these challenges.

As the US Federal Energy Regulatory Commission (FERC) points out, there is no uniform definition of DERs, and the definition keeps changing (16). The US National Association of Regulatory Utility Commissioners (17, p. 45) broadly defines DERs to reflect their diversity:

A DER is a resource sited close to customers that can provide all or some of their immediate electric and power needs and can also be used by the system to either reduce demand (such as energy efficiency) or provide supply to satisfy the energy, capacity, or ancillary service needs of the distribution grid. The resources, if providing electricity or thermal energy, are small in scale, connected to the distribution system, and close to load. Examples of different types of DER include solar photovoltaic (PV), wind, combined heat and power (CHP), energy storage, demand response (DR), electric vehicles (EVs), microgrids, and energy efficiency (EE).

DERs have seen rapid growth in the United States. Distributed PV installations grew from 0.4 GW in 2010 to 10.5 GW in 2017 (18). According to data from the US Energy Information Administration (19, 20), the total existing small-scale storage power capacity connected to the US distribution network increased from 66 MW in 2016 to 234 MW in 2018. Among the capacity in 2018, 97% were behind-the-meter installations, and the share in the commercial, residential, and industrial sectors were slightly higher than 50%, 31%, and 15%, respectively. Demand response (DR), which is a program aimed at adjusting electricity demand “in response to price, monetary incentives, or utility directives so as to maintain reliable electric service or avoid high electricity prices (21, p. i),” has been active in the United States over the past five years. Between 2015 and 2019, the number of customers enrolled in DR programs increased from 9 million in 2015 to almost 11 million in 2019. At the same time, the actual peak demand savings averaged 12.2 GW per year, and the average annual power savings was 1357.4 GWh (22). Advanced metering infrastructure (AMI) is the foundation for the expansion of distributed energy systems. AMI is “an integrated system of smart meters, communications networks, and data management systems that enables two-way communication between utilities and customers” (23, p. 4). The number of advanced meters increased from 58.5 million in 2014 to 86.8 million in 2018. Its penetration rate (the proportion of advanced meters in the total number of meters deployed in the United States) jumped from 38.8% to 56.4% in the same period (24).

The role of DERs as an electricity system resource has evolved over time. Historically, most DERs in the United States were demand-side management programs funded and administrated by utilities with the goals of cost-effectively reducing demand and enhancing utilities’ interactions with their customers. These traditional programs focused primarily on energy efficiency and interruptible load management programs oriented around peak reliability needs.

Advanced DER applications go beyond traditional power system reliability needs to serve customers’ growing interests in new, customer-sited applications such as distributed generation (DG), energy storage, load response, and managing electric vehicles while helping address emerging power system challenges. These challenges include the need to balance a large amount of solar and wind energy output that is neither constant nor fully predictable and the need to more actively operate distribution systems that have growing penetrations of customer-sited resources. Through bidirectional power flow, advanced system control, and real-time information flow, DERs are well suited to provide flexible resources to enable dynamic load adjustments to real-time operational conditions, thus improving the stability of the grid and enhancing grid flexibility for integrating VRE (25).

DERs offer numerous services and provide value to three different power system perspectives—regional system operators, utilities, and customers (see Table 1). Many of these services are critical for operating a stable and flexible electricity system powered by VRE (26). In addition to the benefit of grid flexibility, DERs could also play an increasingly critical role in improving power system resilience to deal with significant disruptions resulting from severe weather, deadly wildfires, and other extreme events (27).

[TABLE 1 OMITTED]

This article examines US regulatory policy and implementation experience in deploying DERs to offer insights for the design of energy and climate policies and the potential role and challenges of DERs in decarbonization and improved power system resilience, in both the United States and other countries. The remainder of the article is organized as follows. Section 2 presents the framework through which this article reviews the US experience and lessons learned in adopting enabling policies and creating effective markets and business models for DER. Section 3 focuses on the role of specific federal and state policy measures in the United States in driving DER deployment. Section 4 discusses various market strategies and business models adopted in the United States in facilitating DER expansion. Section 5 describes major challenges and lessons learned thus far that may inform possible solutions in both the United States and elsewhere. Section 6 concludes the article with insights for other countries.

#### Only antitrust solves—provides vital private deterrence and regs fail

Vaheesan 19 [Sandeep Vaheesan is legal director at the Open Markets Institute. Vaheesan previously served as a regulations counsel at the Consumer Financial Protection Bureau, where he helped develop and draft the first comprehensive federal rule on payday, vehicle title, and high-cost installment loans. Paula Bliss, of counsel, Bernheim Kelley Battista & Bliss, MARK A. GOTTLIEB Counsel of Record PUBLIC HEALTH ADVOCACY INSTITUTE, PNE Energy Supply LLC, On Behalf Of Themselves And Others Similarly Situated V. Eversource Energy And Avangrid, Inc. Motion Of Open Markets Institute For Leave To File Amicus Curiae Brief In Support Of Plaintiff-Appellant. 10/25/19, https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5eaa1d9d2790182e187cc171/1588207017816/19-1678\_Documents-as-filed.pdf]

Since Congress and FERC have committed to market-based pricing in wellhead gas, resales of gas, and wholesale electricity, the full application of the antitrust laws is critical for ensuring the success of this legislative and regulatory market creation. Even as FERC maintains oversight of the electricity and natural gas markets, this regulatory supervision has important limitations and cannot be expected to root out all anticompetitive conduct. Antitrust enforcement complements FERC oversight and provides vital deterrence against anticompetitive practices in gas and electricity markets. Specifically, antitrust suits brought by injured consumers and businesses provide strong deterrence of anticompetitive conduct as well as compensation. In dismissing the plaintiff-appellant’s suit, the district court severely weakened the effectiveness of the antitrust laws and empowered sellers of gas and electricity to profit through anticompetitive market conduct. FERC oversight is not adequate to prevent anticompetitive conduct and ensure that markets in natural gas and electricity are free from collusive, exclusionary, and other unfair market conduct. Although FERC has an obligation to maintain “just and reasonable rates” under the Natural Gas and Federal Power Acts, 15 U.S.C. § 717c, it has only very limited tools to police specific anticompetitive conduct in the gas and electricity markets and to provide any remedy for anticompetitive market conduct it discovers after the fact.

Even assuming FERC acts against anticompetitive and other unfair conduct, 5 its remedies provide inadequate deterrence and cannot be counted on to compensate injured parties. FERC can impose monetary penalties of up to a fixed maximum amount per day on parties over whom it has jurisdiction and who have violated FERC rules in gas or electricity markets. 15 U.S.C. 717t-1; 16 U.S.C. 825o-1(b). All such penalties, however, go to the United States Treasury, not to the injured customers, absent agreement by the defendant. FERC can also order disgorgement of ill-gotten profits as a result of market manipulation. Revised Policy Statement on Enforcement, 123 FERC ¶ 61,156 (2008). Both remedies are, at best, an imperfect approximation of market-wide injury to purchasers and, at worst, a small fraction of market harm and woefully inadequate to deter market misconduct. And they offer no guarantee of full compensation for injured parties.

Given FERC’s limited market oversight powers, antitrust enforcement plays an important role in gas and electricity markets. Antitrust lawsuits help identify and stop anticompetitive practices and ensure that market-based pricing serves the public. When sellers engage in collusion, exclusion and mergers, they can enhance and maintain their market power and profit at the expense of purchasers and rivals. See, e.g., Keyspan, 763 F.Supp. at 636 (describing alleged effects of anticompetitive swap agreement involving rival generators in New York City). As federal regulators have renounced or been deprived by Congress of direct price setting authorities, the full effectiveness of the antitrust laws is essential. Jim Rossi, Lowering the Filed Tariff Shield: Judicial Enforcement for a Deregulatory Era, 56 Vand. L. Rev. 1591, 1648 (2003). See also Alfred E. Kahn, Deregulatory Schizophrenia, 75 Calif. L. Rev. 1059, 1059 (1987) (“While prepared to defend enthusiastically the deregulations with which I have been involved, I feel equally strongly that they have greatly accentuated the importance of antitrust enforcement.”).

The filed rate doctrine’s limitation on private antitrust enforcement subverts the effectiveness of the antitrust laws. The ability of injured consumers and businesses to bring antitrust suits is a pillar of the American antitrust enforcement regime. Under the Clayton Act, “[a]ny person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue . . ., and shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee.” 15 U.S.C. § 15. See, e.g., Blue Shield of Va. v. McCready, 457 U.S. 465, 472 (1982) (quoting Mandeville Island Farms, Inc. v. Am. Crystal Sugar Co., 334 U.S. 219, 236 (1948)) (“Congress sought to create a private enforcement mechanism that would deter violators and deprive them of the fruits of their illegal actions, and would provide ample compensation to the victims of antitrust violations. . . . As we have recognized, ‘[t]he statute does not confine its protection to consumers, or to purchasers, or to competitors, or to sellers. . . . The Act is comprehensive in its terms and coverage, protecting all who are made victims of the forbidden practices by whomever they may be perpetrated.’”).

Empirical research shows the public importance of “private attorneys general” and the value of having more enforcers on the beat against corporate collusion, consolidation, and monopolization. A study of 60 private antitrust lawsuits between 1990 and 2011 found that these actions generated more deterrence than the federal government’s entire criminal antitrust enforcement activity over the same period. Joshua P. Davis & Robert H. Lande, Defying Conventional Wisdom: The Case for Private Antitrust Enforcement, 48 Ga. L. Rev 1, 26 (2013). And these lawsuits compensated injured parties, whereas public enforcement generally did not.

#### Extinction level warming is reversible

Bendix 21 [Aria Bendix , Senior Reporter at Insider, covering science and health citing IPCC Aug 2021 Climate Report. Aylin Woodward , and Morgan McFall-Johnsen. “Climate scientists want you to know it's not too late”. 8/10/21. https://www.businessinsider.com/still-time-to-address-climate-change-ipcc-scientists-report-2021-8]

At first glance, Monday's long-awaited report from the Intergovernmental Panel on Climate Change was bleak. It found that some consequences of human-driven emissions are irreversible for centuries to millennia, and that warming will continue to some extent over the next two to three decades, regardless of how much emissions drop.

But the assessment also emphasizes that the worst-case climate disasters aren't inevitable: Every half-degree of warming that can be averted makes a huge difference — including in the intensity and frequency of extreme heat, rainfall, and drought. Even incremental reductions in emissions today would stave off more catastrophic events in the coming decades.

The IPCC report comes from a working group of hundreds of scientists whose last assessment was in 2013. This new report shows that human-caused emissions have led the planet to warm by 1.1 degrees Celsius in the last 170 years. Some glacial melting and sea-level rise will continue for millennia, no matter what happens next.

But Youba Sokona, vice-chair of the IPCC, highlighted a more optimistic takeaway: "We are in the right moment to completely change the direction we are taking," he told Insider.

In the IPCC's worst-case scenario, global emissions would double by 2050, causing temperatures to rise an average of 2.4 degrees Celsius between 2041 and 2060. But in the best-case scenario, the global temperature would rise just 1.5 degrees between now and 2040, then dip back down by the end of the century.

That means there's still time to act.

"It is virtually certain that global surface temperature rise and associated changes can be limited through rapid and substantial reductions in global greenhouse-gas emissions," the IPCC authors wrote.

The world has some time to lower emissions

paris climate agreement

A woman walks past a map at the World Climate Change Conference 2015 (COP21) at Le Bourget, near Paris, France, on December 11, 2015. Reuters/Stephane Mahe

In the Paris agreement, world leaders pledged to cut greenhouse-gas emissions enough to keep global temperatures from rising more than 1.5 degrees Celsius above pre-industrial levels. Now, Earth's temperature is very likely to blow past that mark in the next 20 years, according to the IPCC report.

But the Paris agreement's larger goal was to avoid a 2-degree rise at all costs. That's still possible, scientists say.

"It's very likely that we'll exceed 1.5 degrees," Greg Flato, a climate scientist from the Canadian Center for Climate Modeling and one of the new report's co-authors, told Insider. "It's possible to exceed slightly and stabilize if we follow a pathway of deep emissions cuts by midcentury."

Already, the world cut carbon emissions by 2.5 billion tons in 2020, since pandemic-related lockdowns meant fewer vehicles on the road, planes in the sky, and less collective electricity use at peak times. That's a roughly 6% decline from the year prior, following decades of rising global emissions.

"The lesson we can learn from that is that we can change our behavior drastically in the short term," Sokona said.

The IPCC found that every trillion tons of carbon emitted leads the world's temperature to rise roughly 0.45 degrees. To stay under the 2-degree threshold, we have about 900 billion tons of carbon left in the budget. In 2019, emissions reached about 37 billion tons — so if that rate continues and no carbon gets removed from the atmosphere, we'd have about 25 years remaining.

There's still time to mitigate extreme heatwaves, drought, and floods

Drought Brazil

A Brazilian worker surveys the cracked ground of Jaguary dam in Braganca Paulista on January 31, 2014. Nacho Doce/Reuters

A difference of half a degree may sound minor, but avoiding that increase would make the difference between extreme and deadly heatwaves, droughts, and floods and milder, less frequent versions of these events.

At 2 degrees of warming, extreme temperature changes could be twice as pronounced as they would be at 1.5 degrees, the IPCC report found. Globally, the chance of at least three months of drought per year would rise from about 20% at a 1.5-degree temperature rise to 35% at 2 degrees.

The Atlantic Meridional Overturning Circulation (AMOC), meanwhile, could lose nearly 30% of its pre-industrial strength if global temperatures rise anywhere between 1.5 and 2 degrees Celsius. This system of ocean currents moves warm water from the equatorial tropics up to Europe and the north Atlantic. The influx of warmer water contributes to western Europe's mild, temperate climate, so if the current gets weaker, it could result in more intense winters in some places and more frequent heatwaves and droughts in others.

Higher temperatures will also shrink the planet's ice sheets, snow cover, glaciers, and permafrost — a layer of soil that used to stay frozen year-round. As permafrost thaws, it releases carbon, which traps heat and contributes to additional warming. With each degree of warming, the top 3 meters of permafrost could lose 20-30% of its volume, the IPCC found.

Even if humanity doesn't wind up avoiding all of these disasters, the report at least tells policymakers what's in store.

"Having that information today allows us to begin the actions that will make us ready a decade from now, mid-century, and at the end of the century," Alex Ruane, one of the report's lead authors, told Insider.

"This provides a kind of roadmap, or at least a forewarning, of the types of changes that we have to be prepared for," Ruane said, adding, "This is where my optimism lies."

#### The United States federal government should substantially increase its prohibitions on anticompetitive business practices by private electricity and gas corporations by reducing application of regulatory antitrust immunities.

### Advantage Two is Prices

#### Filed rate causes predatory pricing and blackouts

Vaheesan 19 [Sandeep Vaheesan is legal director at the Open Markets Institute. Vaheesan previously served as a regulations counsel at the Consumer Financial Protection Bureau, where he helped develop and draft the first comprehensive federal rule on payday, vehicle title, and high-cost installment loans. Paula Bliss, of counsel, Bernheim Kelley Battista & Bliss, MARK A. GOTTLIEB Counsel of Record PUBLIC HEALTH ADVOCACY INSTITUTE, PNE Energy Supply LLC, On Behalf Of Themselves And Others Similarly Situated V. Eversource Energy And Avangrid, Inc. Motion Of Open Markets Institute For Leave To File Amicus Curiae Brief In Support Of Plaintiff-Appellant. 10/25/19, https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5eaa1d9d2790182e187cc171/1588207017816/19-1678\_Documents-as-filed.pdf]

\*italics from original document

Under a system of market-based pricing, full and robust antitrust enforcement is vital to protect the public from the collusive, exclusionary, and other unfair practices of producers and traders of electricity and natural gas. See Alfred E. Kahn, Deregulatory Schizophrenia, 75 Calif. L. Rev. 1059, 1059 (1987) (“While prepared to defend enthusiastically the deregulations with which I have been involved, I feel equally strongly that they have greatly accentuated the importance of antitrust enforcement.”). In this case, however, the court expanded the filed rate doctrine, which was created to protect the integrity of *regulator-approved rates*, to immunize Eversource Energy and Avangrid’s manipulation of *market prices* for electricity and gas from a private antitrust lawsuit. In broadening the filed rate doctrine to dismiss the plaintiff-appellant’s lawsuit, the district court granted a *de facto* license for sellers of gas and electricity to use their market power to transfer millions or even billions of dollars from the public into their own coffers.

Plaintiff-appellant accuses Eversource Energy and Avangrid (two vertically integrated utilities that distribute gas and electricity to end-use customers and own power generation assets) of misusing their market power at the natural gas resale level and engineering a chain of events that inflicted substantial harm on New England residents. The defendants-appellees abused their gas pipeline use rights to create an artificial shortage of resale gas, a key input for generating electricity in New England. By limiting the supply of gas in New England and raising the price of natural gas, the defendants-appellees increased the costs of generating electricity. And by raising the costs of generating electricity, they increased wholesale electricity prices and ultimately retail electricity costs for New Englanders by more than $3 billion.

Over the past four decades, legislators and regulators have limited and even withdrawn public utility regulation over the production and sale of natural gas and the generation of electricity and introduced market-based pricing in these areas. In lieu of cost-of-service regulation, market-based pricing now governs the sale of gas at the wellhead where gas is produced, the resale of surplus gas to purchasers like electricity generators, and the sale of electricity at the wholesale level. In contrast to the previous regulated environment, the conduct of sellers in these markets is today “governed in the first instance by business judgment, and not regulatory coercion.” Otter Tail Power Co. v. United States, 410 U.S. 366, 374 (1973).

As these legislative and regulatory decisions have lifted traditional price controls, participants in the wellhead gas, gas resale, and wholesale electricity markets exercise discretion that they previously did not have. Competition in wellstructured markets constrains this private discretion and can ensure the availability of plentiful and affordable gas and electricity. When markets are concentrated or when market participants engage in collusive, exclusionary, or other unfair practices, however, this private discretion becomes private power. Under these circumstances, sellers can use their unilateral or collective market power to profit at the expense of purchasers of gas and electricity.

As the plaintiff-appellant alleges, the risk of misconduct in these markets is real. And the alleged misconduct is not an aberration. In electricity markets, generators have engaged in market power abuse on a recurring basis. This abuse was most powerfully illustrated in the California electricity crisis in 2000. In-state generators with market power created artificial shortages of electricity and caused price spikes and rolling blackouts in the state, extracting billions of dollars in private taxes from the public. Severin Borenstein, James B. Bushnell & Frank A. Wolak, Measuring Market Inefficiencies in California’s Restructured Wholesale Electricity Market, 92 Am. Econ. Rev. 1376 (2002).

#### Low prices draw crypto miners from Central Asia to the US

Pan 21 [David, “Banished Chinese Bitcoin Miners Look to the West, and Far Beyond”. 8/2/21. https://www.coindesk.com/business/2021/08/02/banished-chinese-bitcoin-miners-look-to-the-west-and-far-beyond/]

China’s crackdown on crypto mining has sent local miners on a global hunt for places to host their machines. Despite reports of North America luring miners, so far there is no clear winner.

Factors like lead times to build out hosting sites, energy and labor costs, tax regimes, climate and political and business environments are among many local issues that make it difficult for miners to map out a specific route of migration, industry pros said.

While North America is one major destination, Central Asia, Latin America and Europe may be even more serious contenders in the future. Some in the crypto industry will likely welcome this development because it indicates a more decentralized distribution of hash power around the world and potentially assuages fears of Chinese miners having an outsized influence on the Bitcoin network.

Around 25% of the hashrate that came offline because of China’s crackdown since March will eventually end up in North America, with another 25% going to central Asian countries such as Kazakhstan, Mongolia and parts of Russia, according to estimates by Nick Hansen, CEO of Seattle-based crypto mining firm Luxor.

Another 15% of hashrate would go to Latin America, 10% could migrate to European Union countries and the rest might never come back online because some of the older mining machines are stranded in China, Hasen said.

The exact route of the Chinese miners’ migration is still not clear. Hansen’s estimates are in part based on his conversations with miners and a data-based analysis on who has access to suitable power sources and infrastructure to get the miners online in the next six to 12 months.

“I know the U.S. right now has a lot of energy available, which can be capitalized on, and some of the biggest energy production innovators would want to soak up the capacity,” Hansen said. “But the fact of the matter is they may just not be able to get enough power online to take up as much as they would like, and that’s going to lead these Chinese miners to end up in other places.”

Central Asia

Lower costs of energy, labor, transportation, tariffs and taxation in central Asia and certain eastern European countries are the main reasons some Chinese miners would choose these regions over North America, said Arthur Lee, CEO of Beijing-based clean-energy mining firm SAI.

“We think Asia has great potential and it is very strategically important to us,” Lee said. The Bitmain-backed firm plans to reach a fairly big scope in Asia, or even become the first or second largest in the region for the second half of this year, according to Lee.

The electricity price in central Asia averages at $0.05 per kWh (kilowatt hour) including taxes and other related costs. While mining farms in Texas are within a similar range, other states in the U.S. could have higher prices, said Franky Hu, chief business development officer at MYRIG, a leading mining infrastructure provider in Kazakhstan and Russia.

Lower energy cost is one of the major factors in determining a miner’s profit margin and how long they can take before covering the cost of their mining machines. An energy cost of $0.05 per kWh can give miners a fairly wide margin given bitcoin’s recent market prices.

Besides generally cheaper energy, low maintenance cost is another advantage for miners in central Asia.

“Specialized workers are more expensive in the U.S than Russia and Kazakhstan,” Hu said. “Due to the high labor cost to maintain and repair the machines, many miners in the U.S. would just leave the broken machines.”

According to Hu, the depreciation rate of mining rigs ranges from 1% to 5% on a monthly basis depending on local weather conditions. Texas generally has a hot and humid climate, which could cause more issues for mining machines.

The U.S. comes with other costs as well. The 25% tariffs on Chinese imports, including electronic components, from the Donald Trump era remain intact under Joe Biden’s administration. The Internal Revenue Service (IRS) taxes crypto generated through mining the same way it taxes income, which ranges from 10% to 37% depending on the state, according to the agency’s guidance on crypto mining taxes.

More expensive building materials and a stricter electrical code, the standard for the safe installation of electric wiring and equipment, for the hosting sites in North America could also make crypto mining more costly in the region, said Kevin Zhang, vice president of mining firm Foundry. (Foundry is a subsidiary of Digital Currency Group, which is also CoinDesk’s parent company.)

Cost can still be an issue even in crypto mining-friendly states with rich energy sources.

“We have looked at both Kentucky and Wyoming and, unfortunately, we have not seen the power and the energy cost at the point where we feel comfortable about it,” said Dave Perrill, CEO and founder of Minneapolis-based miner hosting services provider Compute North.

“I think we are one of the low-cost providers in the industry. We are very thoughtful and strategic and very picky in regards to where we source and how we source our energy. Just the tax ramifications alone wouldn’t foot the calculus in its favor,” Perrill said.

While Kazakhstan, one of the largest bitcoin (BTC, -1.26%) mining hubs in central Asia, recently ended financial incentives meant to attract bitcoin miners and imposed a tax on electricity used by mining operations, Lee said it is very unlikely miners can reduce their cost in North America to be as low as it is in central Asia.

#### Mining destroys Central Asian and European energy security and triggers uprisings

McMahon 1/16 [Liv, Search and Trends Writer working for The Scotsman and the Edinburgh Evening News. “How the great migration of cryptocurrency mining is playing a rising role in the global energy crisis”. 1/16/22. https://www.scotsman.com/lifestyle/tech/how-the-great-migration-of-cryptocurrency-mining-is-playing-a-rising-role-in-the-global-energy-crisis-3529127]

As the country’s central bank and state authorities followed through on pledges to effectively wipe out crypto mining operations in China, the Cambridge Centre for Alternative Finance (CCAF) estimated the country’s average monthly share of the Bitcoin network hashrate had fallen from near 70 per cent in September 2020 to 0 per cent by August 2021.

Meanwhile, the neighbouring republic of Kazakhstan had become an obvious destination for many cryptocurrency miners forced to flee China, with an abundance of cheap electricity awaiting miners and foreign mining farm owners searching for new pastures in which to build their fortunes.

According to estimates behind the Cambridge Bitcoin Electricity Consumption Index, based on geolocational data collected from a set of cryptocurrency mining pools, Kazakhstan’s average monthly share of the Bitcoin network hashrate rose as China’s vanished – increasing by almost 10 per cent in two months as it jumped from 8.8 per cent in June to 18.1 per cent in August 2021.

“The Bitcoin protocol – per se – has no preference for geography," says Professor Aggelos Kiayias FRSE, chair in cybersecurity and privacy at the University of Edinburgh.

“However it rewards miners with a digital asset that is traded globally and in this way it incentivises them to find the cheapest possible electricity so they maximise their profit.”

Professor Kiayias adds: “For this reason, countries that offer subsides for electricity, have lax regulation and/or have cheap electricity due to natural resources can be very attractive as places to set up mining operations.

"This can lead to over reliance of Bitcoin to such countries and over exploitation of preferential electricity rates and resources which, in turn, can lead to the withdrawal of subsidies and the unavailability of resources.”

Indeed, as quickly as Kazakhstan became the world’s second largest home to crypto mining behind the US, the proliferation of mining ‘hotels’, allowing people to rent space in data centres for their mining rigs, and ‘grey’ unregistered miners guzzling gigawatts of electricity per year illegally across the country were blamed for a buckling national grid.

"The thing is, China was the world’s largest cryptocurrency producer,” says Alex de Vries, a data scientist and cryptocurrency researcher who created his own landmark consumption indexes for Bitcoin and Ethereum at his site, Digiconomist.

ADVERTISING

"So when all the miners have to migrate, you're effectively relocating the energy consumption of a country like Argentina to somewhere else – to a grid that is a lot smaller than what China is capable of offering.”

The Kazakhstan Electricity Grid Operating Company (KEGOC) stated in late October that power consumption was exceeding generation “due to the sharp increase in consumption by the digital mining consumers (over 1,000 MW) and higher number of emergencies at power plants”.

Dr Luca Anceschi, Professor of Eurasian Studies at the University of Glasgow

Dr Luca Anceschi, Professor of Eurasian Studies at the University of Glasgow

“My guess is that the government wanted to make a quick buck [off cryptocurrency mining],” says Dr Luca Anceschi, Professor of Eurasian Studies at the University of Glasgow, “then they discovered they couldn't manage it because they haven't got an infrastructure big enough”.

For Dr Anceschi, Kazakhstan, as an energy rich nation, is facing a situation it should never have been in in the first place.

"A country like Kazakhstan does not have to be in the position it is in with its energy,” he says.

"It’s like if Scotland ran out of water, with all the rain we get.”

Riot police prepare to block protesters in the center of Almaty, Kazakhstan, Jan. 5, 2022. At demonstrations in the largest city of Almaty, protesters say groups of armed men reportedly joined the peaceful rallies and urged them to storm police stations and government buildings. (Image credit: Vladimir Tretyakov/NUR.KZ via AP File)

When Kazakstan’s Bitcoin mining operations ramped up in late 2021, even some of the country’s largest, oldest data centres found themselves in a different landscape to the one they enjoyed previously.

Electricity supply grew patchier by the day amid electricity rationing for crypto mining farms, with these issues compounded further when the Kazakh government turned to internet shutdowns to try dispel uprisings and riots.

On Wednesday, 5 January, anger over government corruption, inequality across social classes, doubled Liquefied Petroleum Gas costs and complex, historic problems in Kazakhstan erupted on the streets of Almaty in a demand for change, with 164 people killed in protests across the country.

And when the Kazakh government shut down the internet, limiting online freedom of speech, access to social media and web services in Kazakhstan, Bitcoin’s hashrate also appeared to take a hit across several major mining pools as the country’s miners were unable to access the network – initiating a flash cryptocurrency crash in which already dulled prices of Bitcoin, Ethereum and more sank even lower.

With many other miners now looking to the US for greater geopolitical, economic and energy stability for large-scale mining farms, the great cryptocurrency mining migration looks only to continue apace in states like Kentucky and Texas, thanks to their cheap energy and minimal regulation.

The Electric Reliability Council of Texas (ERCOT) says it expects energy loads to increase five-fold by 2023, with demands of crypto mining and its data centres requiring up to 5,000 megawatts of further electricity.

Alex de Vries is the cryptocurrency researcher and data scientist behind blog Digiconomist, which explores the impact of cryptocurrencies on energy and the environment

Alex de Vries is the cryptocurrency researcher and data scientist behind blog Digiconomist, which explores the impact of cryptocurrencies on energy and the environment

"Once Kazakhstan is done with this industry and its government tries to kick out Bitcoin miners, they will probably go elsewhere,” says Mr de Vries.

"But then the next country will have the same problem.”

Mr de Vries and Dr Pete Howson, Senior Lecturer in International Development at Northumbria University, recently explored the impact of cryptocurrency miners relocating from country to country and that of mining itself on vulnerable communities in countries with poor energy infrastructure and inexpensive, fossil fuel-powered electricity in a joint paper.

It brought Dr Howson to the conclusion the energy-intensive process of mining Proof-of-Work cryptocurrencies such as Bitcoin and Ethereum “can be seen as parasitic, in the sense that it sort of plugs itself in to local resources”.

“It takes and takes until the host has to try to eliminate it through regulation, banning or violent uprising, or it kills the host because it's taken too much of the resources that it needs,” Dr Howson continues.

"I think there's this idea amongst some crypto proponents that, especially with Bitcoin, mining is coming to the rescue in providing a source of income for so-called stranded energy resources that states can't find a buyer for.

“But the reason that crypto and Bitcoin miners move to these locations is because they have vulnerable, poor populations, rusty infrastructure and weak regulatory regimes.

“That's the reason they go there – to exploit them, not help them.”

Kosovo began the new year by banning cryptocurrency mining, with police seizing hundreds of expensive graphic processing units (GPUs) and application-specific integrated circuits (ASICs) in nationwide raids as the country’s Minister of Economy Artane Rizvanolli cited the potential for blackouts, while Iran introduced a second four month suspension of cryptocurrency mining operations in the country in late 2021.

Such moves are echoed throughout Central Asia and Europe – where countries such as Abkhazia, Georgia and Uzbekistan have turned to crypto mining bans and suspensions to contend with increased demand for cheap electricity, while popular Scandinavian mining countries Norway and Iceland look to back Sweden’s push for an EU-wide ban on cryptocurrency mining.

"What it is inevitable is not that mining will be banned,” says Professor Kiayias, “but the fact that Bitcoin miners will seek the cheapest possible electricity and, if they are unencumbered by regulation, they will not stop at utilising any source, at any country, no matter the environmental impact.”

#### Rebellions cascade across Central Asia, Eastern Europe, and Russia – energy security is key

Fesenko 22 [Volodymyr, political analyst, Director at Centre for political studies “Penta”. 1/6/22. <https://www.kyivpost.com/ukraine-politics/the-revolt-in-kazakhstan-why-is-it-important-for-ukraine.html>]

We do not know yet how the political situation in Kazakhstan is going to develop. There could be different scenarios. But it is apparent that the political processes in Ukraine and Kazakhstan have had very little to do with each other in the past, and it is unlikely for such a correlation to arise now all of a sudden.

The chain effect of protests, if any, is likely to take place in the neighboring countries that are historically and culturally connected to Kazakhstan. However, even the countries of Central Asia differ among themselves significantly.

In this context, attention should be paid to something else. The protests in Kazakhstan were provoked by a sharp surge in energy prices. This topic is currently relevant for many countries around the globe, including ours.

It is obvious that if energy prices and utility tariffs are set free into the waters of the “free market” – especially when the majority of the population lives on a low income – there will inevitably be a sharp rise in social tensions and, therefore, higher risks of political destabilization.

However, another problem arises here – at what expense and how exactly one can compensate for restraining utility tariffs and energy prices for power-producing companies?

The paradox of the situation is that economically speaking it is inexpedient to restrain prices and tariffs; however, without taking such actions there might be greater political risks (if not social protests, then the dip in popularity of the political forces in power).

This contradiction between the political and the economic expediency remains relevant for us as well – especially since the tariff problem (high utility tariffs combined with low incomes) is one of the main social challenges for the average Ukrainian.

Last autumn, the Ukrainian authorities took certain actions to hold back the increase in energy prices (by restraining the price for gas and electricity tariffs for Ukrainian households). But the Ukrainian economy continues to be pressured by the energy price fever, and the lack of natural gas on the global market, along with the global inflationary trends.

Therefore, ensuring at least relative social and economic stability will be one of the key tasks for the Ukrainian government in 2022.

The Eye of Putin

The second important aspect of the events in Kazakhstan is that they will – at least to some degree – distract Russia’s attention from our country. It is not going to remove the risks of Russian aggression for us, but the Kremlin will have to keep its eyes on the ball of the difficult political processes in Kazakhstan, just in case. After all, this particular Central Asian country is one of the key links in the Eurasian Economic Union.

Besides, Moscow is also afraid that the West – or, even worse, China and Turkey – may increase their influence on Kazakhstan. And on top of that, the “rebellion disease” could also spread to Russia.

The third problem comes with the risks of the transit of power. For the Russian leadership, this topic has been relevant for quite some time now. The situation in Kazakhstan discredits the “Nazarbayev scenario of the transit of power”, so it can only aggravate Putin's paranoia and tendency to preserve his direct rule indefinitely.

Green men in Almaty?

There is a risk that in case of a severe political crisis in Kazakhstan, the Kremlin could do in the northern part of the country the same thing it did in Crimea in 2014 or apply the Donbas scenario.

Some Russian politicians already raised this issue during the elections to the State Duma last year. In this case, yet another acute conflict situation may arise in the post-Soviet area. Even the limited use of the “CSTO peacekeepers” in Kazakhstan (as it has been officially announced) will have ambivalent consequences and may set an extremely dangerous precedent.

We wait to see what will happen in Kazakhstan. The trajectory of the political situation in this Central Asian country may influence certain important geopolitical processes in the entire post-Soviet area.

#### Goes nuclear.

Stephen Blank 12, PhD, Senior Fellow @ Strategic Studies Institute - US Army War College, "Making Sense of Moscow’s Syrian Gambit," 6/27/12, <https://sldinfo.com/2012/06/making-sense-of-moscows-syrian-gambit/>

Beyond that Moscow was and still may be equally anxious that the “Arab Spring” or some analogue of it might erupt in Central Asia where it even publicly voiced its apprehensions about that in April 2011.[xi] Any such uprising might spread throughout Central Asia and trigger an explosion on a scale resembling or even surpassing Syria’s current travails. And there are analysts who have publicly warned that such a revolution could occur under the inspiration of Arab events.[xii]

Moreover, Russian perceptions of disaster were quickly confirmed as Libya fell into civil war and as it became clear that Islamist factions might actually take power in one or more of the affected Arab states.

Russian discussions of the Arab Spring regularly complain that these revolutions’ likely outcome is an Islamist takeover leading to a protracted civil war or at least civil strife as those forces seek to impose their vision of a just society on their countries if not neighbors as well.[xiii]

Since Moscow is currently fighting an Islamic insurgency in the North Caucasus and fears for one in Central Asia the prospect of other Islamist victories or civil wars engendered by attempted Islamist takeovers in regions where Moscow still perceives as its strategic perimeter might evoke profound nervousness if not anxiety in Moscow.

(For a look at a video showing Russian attack helicopters of the sort being sent to aide the Assad regime see <http://www.youtube.com/watch?v=bKr_eOk8mNk>

II Strategic and Geopolitical Goals

Beyond these compelling domestic reasons for resisting the Arab Spring, Russia has equally profound strategic objections to Western interventions in the Middle East.

These include but go beyond the belief that the West deceived Moscow regarding Libya and used the UN resolutions on Libya to create a precedent as in Kosovo for a war on behalf of democracy promotion, or, more cynically, for French access to Libyan oil and gas. If the democracy virus could easily spread to Moscow’s restive Muslim south or Central Asia, democracy promotion on the wings of NATO aircraft threatens Russia’s fundamental domestic system and great power interests.

Since 1991 Russia has professed that any regional strife in and around its (i.e. Soviet) perimeter not only exposes it to war or at least significant threat, it might also escalate beyond anyone’s control as in Iraq and trigger a protracted war that could escalate vertically even to the nuclear level if Russia is drawn in.[xiv] Alternatively it could escalate horizontally if it spreads throughout the Middle East, which Moscow still claims as its strategic perimeter.

Given Moscow’s lack of confidence in Western judgments and suspicions of its inveterate hostility to Russia, it is hardly surprising that Russian spokesmen from Putin and Medvedev down have repeatedly threatened that intervention in Arab revolutions could escalate all the way up to nuclear war.[xv]

#### Triggers immediate Russian invasions

Bordachev 1/17 [Timofey, PhD in Political Science, Programme Director of the Valdai Discussion Club; Academic supervisor of the Center for Comprehensive European and International Studies, HSE University, RIAC Member. “Neighbours and Crises: New Challenges for Russia”. 1/17/22. https://moderndiplomacy.eu/2022/01/17/neighbours-and-crises-new-challenges-for-russia/]

Through all the discussions that accompanied the preparation of the Valdai Club report “Space Without Borders: Russia and Its Neighbours”, the most clear question was whether Russia should or should not avoid repeating the historical experience of relations with its near abroad. This experience, in the most general terms, is that after Russia pacifies its western border with its foreign policy, the Russian state inevitably must turn to issues related to the existence of its immediate neighbourhood. With a high degree of probability, it will be forced to turn to its centuries-old method for solving problems that arise there: expansion for the sake of ensuring security.

Now Russia’s near abroad consists of a community of independent states that cannot ensure their own security and survival by relying only on their own forces; we cannot be completely sure of their stability. From Estonia in the west to Kyrgyzstan in the east, the existence of these countries in a competitive international environment is ensured by their link with one of the nuclear superpowers. Moreover, such connections can only complement each other with great difficulty. As the recent developments in Kazakhstan have demonstrated, they are not limited to the threat of an external invasion; even internal circumstances can become deadly.

The dramatic events in that country were intensified by external interference from the geostrategic opponents of Russia, as well as international terrorists, but it would be disingenuous to argue that their most important causes are not exclusively internal and man-made. We cannot and should not judge whether the internal arrangements of our neighbours are good or bad, since we ourselves do not have ideal recipes or examples. However, when dealing with the consequences, it is rational to fear that their statehood will either be unable to survive, or that their existence will take place in forms that create dangers which Russia cannot ignore.

In turn, the events experienced now in relations between Russia and the West, if we resort to historical analogies, look like a redux of the Northern War. The Great Northern War arose at the beginning of the 18th century as the result of the restoration of Russia’s power capabilities; the West had made great progress in approaching the heart of its territory. Within the framework of this logic, victory, even tactical victory, in the most important (Western) direction will inevitably force Russia to turn to its borders. Moreover, the reasons for paying more attention to them are obvious. This will present Russia with the need to decide on how much it is willing to participate in the development of its neighbours.

The developments in Kazakhstan in early January 2022 showed the objective limits of the possibilities of building a European-style sovereign state amid new, historical, and completely different geopolitical circumstances. More or less all the countries of the space that surrounds Russia, from the Baltic to the Pamir, are unique experiments that arose amid the truly phenomenal orderliness of conditions after the end of the Cold War. In that historical era, the world really developed under conditions where a general confidence prevailed that the absolute dominance of one power and a group of its allies creates conditions for the survival of small and medium-sized states, even in the absence of objective reasons for this.

The idea of the “end of history” was so convincing that we could accept it as a structural factor, so powerful that it would allow us to overcome even the most severe objective circumstances.

The Cold War era created the experience of the emergence and development of new countries, which until quite recently had been European colonies. Despite the fact that there are a few “success stories” among the countries that emerged after 1945, few have been able to get out of the catch-up development paradigm. However, it was precisely 30 years ago that there really was a possibility that a unipolar world would be so stable that it would allow the experiment to come to fruition. The visible recipes of the new states being built were ideal from an abstract point of view, just as Victor Frankenstein was guided by a desire for the ideal.

Let us recall that the main idea of our report was that Russia needs to preserve the independence of the states surrounding it and direct all its efforts to ensure that they become effective powers, eager to survive. This desire for survival is seen as the main condition for rational behaviour, i.e. creating a foreign policy, which takes into account the geopolitical conditions and the power composition of Eurasia. In other words, we believe that Russia is interested in the experiment that emerged within the framework of the Liberal World Order taking place under new conditions, since its own development goals dictate that it avoid repeating its past experience of full control over its neighbours, with which it shares a single geopolitical space.

This idea, let’s not hide it, prompted quite convincing criticism, based on the belief that the modern world does not create conditions for the emergence of states where such an experience is absent in more or less convincing forms. For Russia, the challenge is that even if it is technically capable of ensuring the immediate security of its national territory, the spread of the “grey zone” around its borders will inevitably bring problems that the neighbours themselves are not able to solve.

The striking analogy proposed by one colleague was the “hallway of hell” that Russia may soon face on its southern borders, making us raise the question that the absence of topographic boundaries within this space makes it necessary to create artificial political or even civilisational lines, the protection of which in any case will be entrusted to the Russian soldier. This January we had the opportunity to look into this “hallway of hell”. There is no certainty that the instant collapse of a state close to Russia in the darkest periods of its political history should be viewed as a failure in development, rather than a systemic breakdown of the entire trajectory, inevitable because it took shape amid completely different conditions.

Therefore, now Russia should not try to understand what its further strategy might be; in any case, particular behaviour will be determined by circumstances. Our task is to explore the surrounding space in order to understand where Russia can stop if it does not want to resort to the historical paradigm of its behaviour. The developments in Kazakhstan, in their modern form, do not create any grounds for optimism or hopes for a return to an inertial path of development. Other states may follow Ukraine and Kazakhstan even if they now look quite confident. There are no guarantees — and it would be too great a luxury for Russia to accept such a fate.

This is primarily because the Russian state will inevitably face a choice between being ready for several decades of interaction with a huge “grey zone” along the perimeter of its borders and more energetic efforts to prevent its emergence. It is unlikely that Moscow would simply observe the processes taking place on its immediate periphery. This is not a hypothetical invasion of third forces — that does not pose any significant threat to Russia. The real challenge may be that in a few decades, or sooner, Moscow will have to take on an even greater responsibility, which Russia got rid of in 1991. Even now, there seems to be a reason to believe that thirty years of independence have made it possible to create elements of statehood that can be preserved and developed with the help of Russia.

#### Makes every other scenario more likely

Jackson 1/14 [Lauren, Writer @ NYT. “The Return of Superpower Conflict”. 1/14/22. https://www.nytimes.com/2022/01/14/podcasts/daily-newsletter-russia-superpower-conflict.html]

With this aggression, President Putin is hoping to reassert control over the states that once formed the Soviet Union. It is part of a broader campaign throughout the region to expand the Russian sphere of influence, a concept American diplomats have rejected.

But the buildup of troops and the threat of physical invasion are a distinctly 20th-century form of conquest in a world where the currency of power has grown increasingly digital, not just material. That’s what makes this moment different from 30 years ago, some experts say.

“We need to think about spheres of influence as remits in which a state can exercise disproportionate influence that’s not only territorial,” said Graham Allison, a political scientist at Harvard, adding that now states could wield “military power, economic power and cyberpower.”

Cyberattacks are a favored tactic of Mr. Putin in the Kremlin’s efforts to influence elections and steal foreign data. But some say the American threat of counter-cyberattack, alongside its decades of soft-power influence in former Soviet states now agitating for regime change, will make it difficult for Russia to turn back the clock to a previous era of influence.

Referencing the recent protests in Kazakhstan, Sir Andrew Wood, the former British ambassador to Russia, said there was “a degree of liberal yearning” among younger generations in the former Soviet republics that Mr. Putin would find difficult to quell, even if he succeeded in a campaign of territorial expansion.

“It’s a big mistake,” he said of invasion. “Being a successful bully lasts for a time, perhaps, but it doesn’t make you love somebody.”

An American test

If Russia chooses to invade, the United States and its allies will face the challenge of how to respond: weighing the prospects of sanctions that could anger Russian citizens (who are accustomed to American products like iPhones), a counter-cyberattack or support for a Ukrainian insurgency.

The choice the Biden administration makes will have implications for America’s reputation. “China will be watching carefully” to see which move the United States makes, Mr. Wood said, adding that Russian success in invasion without meaningful deterrence would “prove that the U.S. is not a formidable enemy.”

It could also affect the likelihood of further territorial aggression from Russia and China. “It’s the return of history, where great powers go at it and things get really bad sometimes,” Mr. Pavel said. “Expect a very tumultuous decade.”

#### Causes China-Russia war

Pravin R. Jethwa 19, consultant on defense and international security in London, “Expect a War Between Russia and China in the 2020s,” Begin-Sadat Center for Strategic Studies, 7-18-2019, https://besacenter.org/perspectives-papers/expect-war-russia-china/

Notwithstanding the seeming friendship between Chinese president Xi Jinping and Russian president Vladimir Putin, and the growing congruence of both countries’ interests in undermining the US-led international order, relations between Russia and China remain at their core as brittle and prone to mutual suspicion and distrust as they have in the past. It is not unreasonable to expect that that underlying animosity will erupt into violence in the relatively near future.

During his state visit to Russia earlier this month, President Xi Jinping of China effusively hailed President Vladimir Putin of Russia as his “best friend and colleague.” Putin, not to be outdone, replied by affirming his personal respect for Xi, and suggested that Sino-Russian relations have progressed not only to an “unprecedentedly high level” in recent years, but are now increasingly based on a “truly comprehensive partnership and strategic interaction.”

But whatever Putin means by “strategic interaction,” and despite the undeniable progress in Sino-Russian relations over the past decade, it is easy to fall into the trap of exaggerating what some fear is an emerging Sino-Russian “axis” in world politics. Notwithstanding the Xi-Putin friendship and the growing congruence of both countries’ interests in undermining the US-led international order, relations between Russia and China remain at their core as brittle and prone to mutual suspicion and distrust as they have in the past.

It is, after all, only 50 years since the two Eurasian giants nearly stumbled into a cataclysmic war following a series of unprovoked Chinese attacks on Soviet troops garrisoned along the then-contested river boundaries in Russia’s Far East. Although Moscow stayed its hand from an all-out military assault on China, the border clashes of 1969 continue to rankle historical memories and military thinking in Russia to this day.

Such territorial jostling along the vast expanses of Eurasia has, in fact, defined Russo-Chinese relations historically, and will continue to do so in the future.

And therein lies the existential rub, especially for Russia. From the perspective of a strategic planner in Moscow, China – which contains a billion-and-a-half people – not only dwarfs Mother Russia in population, national power, and economic might. It has also – much more worryingly – become a near military equal, prone to intimidation and throwing its weight around its periphery at will. Witness, for example, Beijing’s swift and brazen conquest of the South China Sea, the unrelenting probing into Vietnamese, Philippine, and Japanese maritime spaces, and to its west, the frequent incursions, stand-offs, and aggressive territorial claims against India.

None of these acts of Chinese belligerence will have escaped the notice of Russian planners who, despite the paradox of Moscow’s shared strategic interests with Beijing to counter America’s power and influence in world affairs, are nonetheless bound to view China’s rapid and inexorable rise to the front rank of global powers with acute concern.

But despite any apprehensions Moscow may quietly harbor, Russo-Chinese relations in the short term – over the next four or five years – are likely to remain largely in harmony. This is mainly because Putin’s carefully tended relationship with Xi enables him, among other things, to maintain the pretense of Russia as a great power, attract Chinese investment, and, more generally, project an image of himself as a world-class statesman.

And Xi, though leading an immeasurably more powerful country than Russia except in terms of offensive nuclear firepower, tactfully grants Putin the appearance and status of an equal through elaborately choreographed summit meetings, the bestowing of high level state and friendship awards, and personal respect, in order to secure at least tacit deference by Moscow to the Sino-centric Eurasian geopolitical order currently being planned in Beijing.

Yet beyond the apparent bonhomie and geopolitical dalliance between Xi and Putin, the historic and atavistic tensions deeply rooted between the Slavic and Han civilizations represented by Russia and China are bound to emerge again, probably in violent form, in the next decade.

In fact, signs already abound of Russian nervousness as China relentlessly pushes its Silk Road initiatives, coercive economic practices, and diplomatic blandishments deep into the entire former Soviet space in Central Asia. Although the Chinese have so far refrained from asserting strategic-security rights in the geopolitical arc along Russia’s southern periphery, it is only a matter of time before some hyper-nationalist general in Beijing does so. The Russians can be relied upon to react with unrestrained fury.

But what will likely drive Russia to a defensive war with China before the next decade is out is the growing probability of Chinese territorial encroachment into Russia’s sparsely populated far eastern region bordering the Pacific. The Russian territories north of the Amur and east of the Ussuri Rivers in eastern-Central Asia, which currently demarcate the agreed boundaries between the two countries, are historically and insistently claimed by China. Chinese military maps even show these areas as Chinese territories.

These territorial claims, combined with the sheer population disparities – over 130 million people live in three Chinese provinces bordering Russia’s Far East, where the population is estimated at less than 8 million – and the need to secure long-term access to living space and natural resources almost preordains that Beijing will sooner or later demand revisions to what it calls “unequal” border treaties with Czarist Russia dating back to the mid-19th century. And although the Russians are equally bound to resist, it is not inconceivable that China at some point will demand access or land-lease rights to parts of Russia’s Far East, or, failing that, that the Chinese army will simply march across the border into Vladivostok, Russia’s only warm water access to the Pacific, to stamp China’s historic claim and rights to the region.

#### Goes nuclear fast

Kyle **Mizokami 18**, writer based in San Francisco who has appeared in The Diplomat, Foreign Policy, War is Boring and The Daily Beast, "Russia-China War: 5 Weapons China Would Strike With," 11-9-2018, National Interest, https://nationalinterest.org/blog/buzz/russia-china-war-5-weapons-china-would-strike-35657

Both Russia and China would be in tremendous peril were the other an adversary. Large conventional forces, a long shared frontier, economic disruption and nuclear arsenals on both sides make a war between Asia’s juggernauts a nightmare scenario. If relations between the two countries suddenly went south, here are five Chinese weapons of war Russia should fear.

WU-14 Hypersonic Weapon System

China has been aggressively pursuing research into so-called hypersonic weapons. Hypersonics travel much faster than conventional weapons, cutting enemy reaction times and imparting tremendous kinetic energy on their target. Such weapons would allow China to quickly cover the vastness of Russia; a hypersonic weapon launched from western China could strike Moscow within twenty minutes.

On June 7th, China tested its WU-14 hypersonic weapon for the fourth time in eighteen months. Boosted by a repurposed DF-21 intermediate-range missile to speeds of up to Mach 10, the unpowered weapon then glides to target. The high speed and flight profile of boost-glide weapons makes them difficult to intercept by conventional surface-to air-missiles and anti-ballistic missiles.

Although not a deployable weapon, the WU-14 will be instrumental in developing real hypersonic weapons systems in the near future. Future hypersonic weapons could be launched from aircraft, ships and land-based launchers, providing a fast, accurate, conventional or nuclear, first-strike weapon.

#### And, high prices undermine growth—addressing anticompetitive conduct solves

Moss 13 [Diana Moss is Vice President and Director, American Antitrust Institute (AAI), and Sandeep Vaheesan is Special Counsel, AAI, "Collusive Agreements in the Energy Industry: Insights into U.S. Antitrust Enforcement", 1/10/13, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=2198539&download=yes]

The importance of the energy sector in the U.S. economy needs little explanation. According to the Energy Information Administration (EIA), Americans spent over $1 trillion, or roughly eight percent of U.S. gross domestic product, on energy in 2009.4 Energy expenditures comprise a major fraction of household budgets in the U.S. EIA estimates show that U.S. households spent an average of $2,024 on energy for heating in 20095 and $2,832 on gasoline in 2011.6

Because energy is the lifeblood of the modern economy, energy prices play a critical role in economic growth. Although the U.S. economy is not as energy intensive as it was several decades ago,7 rising energy prices can still slow economic growth. As an important input for industry and transportation, higher energy prices increase costs and lower profits. Moreover, consumers’ ability to modify their energy use and transportation arrangements in the short run is limited8 and only mildly responsive to short run changes in prices.9 Higher energy prices can take a particularly large toll on low-income households that spend a larger fraction of their budgets on energy than middle- and upper-income households.10

Because of the important macroeconomic and microeconomic role of energy prices, anticompetitive conduct in energy markets can be particularly harmful. Petroleum markets are vulnerable to collusive agreements, and the incidence of anticompetitive behavior at multiple levels in the supply chain compounds the adverse effects on consumers. Cartelization of the global crude oil market by the Organization of Petroleum Exporting Countries (OPEC) is one of the most well known examples. OPEC’s decision to restrict crude oil production in the early 1970s plunged much of the world economy into recession.11 Anticompetitive agreements also extend to price fixing at the retail level for products such as diesel and gasoline. Agreements to fix and raise prices between local competing retailers of refined petroleum products directly harm consumers by extracting supracompetitive prices on an essential commodity for which consumers cannot easily adjust consumption in the short run. More recently, collusion has surfaced in auctions for oil and gas exploration leases on federal and private land. Agreements between bidders not to compete against each other depress prices and reduce an important revenue stream for the government.12

The pernicious effects of collusive schemes in energy are not limited to petroleum markets. On a more local level, anticompetitive agreements between sellers in regional wholesale electricity markets have forced consumers to pay hundreds of millions of dollars more for electricity than they would have in the absence of such conduct. In these markets, which are structurally vulnerable to the exercise of market power, anticompetitive agreements spanning even a short time can result in large wealth transfers from consumers to suppliers.13

Collectively, these examples illustrate the serious harm to consumers and to the economy that flow from collusive agreements, making the case for rigorous Section 1 enforcement. A key component of Section 1 enforcement, however, is the choice of enforcement approach (e.g., criminal vs. civil) and remedy, the effectiveness of which is gauged by how well it deters future collusive behavior.consumers cannot easily adjust consumption in the short run. More recently, collusion has surfaced in auctions for oil and gas exploration leases on federal and private land. Agreements between bidders not to compete against each other depress prices and reduce an important revenue stream for the government.12 The pernicious effects of collusive schemes in energy are not limited to petroleum markets. On a more local level, anticompetitive agreements between sellers in regional wholesale electricity markets have forced consumers to pay hundreds of millions of dollars more for electricity than they would have in the absence of such conduct. In these markets, which are structurally vulnerable to the exercise of market power, anticompetitive agreements spanning even a short time can result in large wealth transfers from consumers to suppliers.13 Collectively, these examples illustrate the serious harm to consumers and to the economy that flow from collusive agreements, making the case for rigorous Section 1 enforcement. A key component of Section 1 enforcement, however, is the choice of enforcement approach (e.g., criminal vs. civil) and remedy, the effectiveness of which is gauged by how well it deters future collusive behavior.

#### New energy inflation triggers US recession

Falath 1/7 [Jujaj Falath, senior analyst at the National Bank of Slovakia and a visiting lecturer in economics at the Comenius University in Bratislava, Martin Pažický, economist at the Institute for Financial Policy at the Ministry of Finance of the Slovak Republic and a visiting lecturer at the Faculty of Management, Comenius University in Bratislava. “The big risk now for the US is not hyperinflation, but long-term elevated inflation rates”. 1/7/22. https://blogs.lse.ac.uk/usappblog/2022/01/07/the-big-risk-now-for-the-us-is-not-hyperinflation-but-long-term-elevated-inflation-rates/]

Although some price increases were expected, US inflation figures have now consistently exceeded economists’ expectations. Seven of the last ten CPI inflation readings surprised analysts on the upside, while none of them surprised on the downside. Risks include new, more transmissible COVID mutations, slower vaccine rollouts (causing supply bottlenecks in emerging countries), and lower vaccine efficacy, supply chain disruptions, climate threats, and rising property and energy prices.

Sustained high inflation is mixed news for debts. A moderate amount of inflation above target could help wipe out some of the record government debt burden and allow countries to consolidate. However, if inflation gets out of control and central banks have to slam on the brakes by sharply raising rates, those record debt levels will hurt much more. Furthermore, suppressing economic activity too sharply could spur another recession.

Inflation soared because of COVID

To understand whether we should panic about inflation, we need a deeper discussion of the current sources of inflationary pressures. In principle, the only source of inflation that should spur a contractionary macroeconomic policy response (either monetary by higher interest rates, or fiscal by smaller budget deficits) is inflation driven by the labour market. When workers have enough bargaining power to secure a pay rise that outpaces the long-term potential of the economy, there is a risk of “overheating”. Only this situation, where wage growth runs ahead of productivity growth, should lead to macroeconomic policy intervention. Other supply-related sources of inflation (for example, commodity prices) are volatile and driven primarily by global markets. These inflationary pressures are not the result of overheating and are far more likely to be temporary.

At the beginning of 2021, the main factors driving the rise in inflation were energy prices and factors associated with the reopening of the US economy. Both are usually temporary. Since the second quarter of 2021, however, the rise in CPI inflation has been increasingly driven by rises in the prices of core goods not related to reopening (Figure 1, green columns). This might indicate that inflation is growing more persistent.

The world is currently facing the most severe energy shock in recent decades. The prices of gas and electricity have reached record highs. Partly, this can be seen as compensation for exceptional price falls in 2020, when many factories were forced to halt production. Lifting restrictions boosted demand for commodities, which has resulted in rising energy prices. More expensive emission allowances, representing a form of green tax, have also contributed. As winter sets in, the demand for natural gas and oil is rising. Since stocks are limited, the severity of the situation will depend on how low temperatures drop.

#### Econ decline causes great power war

Liu 11-13, [Qian Liu is an economist based in China, The next economic crisis could cause a global conflict. Here's why, https://www.weforum.org/agenda/2018/11/the-next-economic-crisis-could-cause-a-global-conflict-heres-why/]

The response to the 2008 economic crisis has relied far too much on monetary stimulus, in the form of quantitative easing and near-zero (or even negative) interest rates, and included far too little structural reform. This means that the next crisis could come soon – and pave the way for a large-scale military conflict.

The next economic crisis is closer than you think. But what you should really worry about is what comes after: in the current social, political, and technological landscape, a prolonged economic crisis, combined with rising income inequality, could well escalate into a major global military conflict.

The 2008-09 global financial crisis almost bankrupted governments and caused systemic collapse. Policymakers managed to pull the global economy back from the brink, using massive monetary stimulus, including quantitative easing and near-zero (or even negative) interest rates.

But monetary stimulus is like an adrenaline shot to jump-start an arrested heart; it can revive the patient, but it does nothing to cure the disease. Treating a sick economy requires structural reforms, which can cover everything from financial and labor markets to tax systems, fertility patterns, and education policies.

Policymakers have utterly failed to pursue such reforms, despite promising to do so. Instead, they have remained preoccupied with politics. From Italy to Germany, forming and sustaining governments now seems to take more time than actual governing. And Greece, for example, has relied on money from international creditors to keep its head (barely) above water, rather than genuinely reforming its pension system or improving its business environment.

The lack of structural reform has meant that the unprecedented excess liquidity that central banks injected into their economies was not allocated to its most efficient uses. Instead, it raised global asset prices to levels even higher than those prevailing before 2008.

In the United States, housing prices are now 8% higher than they were at the peak of the property bubble in 2006, according to the property website Zillow. The price-to-earnings (CAPE) ratio, which measures whether stock-market prices are within a reasonable range, is now higher than it was both in 2008 and at the start of the Great Depression in 1929.

As monetary tightening reveals the vulnerabilities in the real economy, the collapse of asset-price bubbles will trigger another economic crisis – one that could be even more severe than the last, because we have built up a tolerance to our strongest macroeconomic medications. A decade of regular adrenaline shots, in the form of ultra-low interest rates and unconventional monetary policies, has severely depleted their power to stabilize and stimulate the economy.

If history is any guide, the consequences of this mistake could extend far beyond the economy. According to Harvard’s Benjamin Friedman, prolonged periods of economic distress have been characterized also by public antipathy toward minority groups or foreign countries – attitudes that can help to fuel unrest, terrorism, or even war.

For example, during the Great Depression, US President Herbert Hoover signed the 1930 Smoot-Hawley Tariff Act, intended to protect American workers and farmers from foreign competition. In the subsequent five years, global trade shrank by two-thirds. Within a decade, World War II had begun.

To be sure, WWII, like World War I, was caused by a multitude of factors; there is no standard path to war. But there is reason to believe that high levels of inequality can play a significant role in stoking conflict.

According to research by the economist Thomas Piketty, a spike in income inequality is often followed by a great crisis. Income inequality then declines for a while, before rising again, until a new peak – and a new disaster. Though causality has yet to be proven, given the limited number of data points, this correlation should not be taken lightly, especially with wealth and income inequality at historically high levels.

This is all the more worrying in view of the numerous other factors stoking social unrest and diplomatic tension, including technological disruption, a record-breaking migration crisis, anxiety over globalization, political polarization, and rising nationalism. All are symptoms of failed policies that could turn out to be trigger points for a future crisis.

Voters have good reason to be frustrated, but the emotionally appealing populists to whom they are increasingly giving their support are offering ill-advised solutions that will only make matters worse. For example, despite the world’s unprecedented interconnectedness, multilateralism is increasingly being eschewed, as countries – most notably, Donald Trump’s US – pursue unilateral, isolationist policies. Meanwhile, proxy wars are raging in Syria and Yemen.

Against this background, we must take seriously the possibility that the next economic crisis could lead to a large-scale military confrontation. By the logic of the political scientist Samuel Huntington , considering such a scenario could help us avoid it, because it would force us to take action. In this case, the key will be for policymakers to pursue the structural reforms that they have long promised, while replacing finger-pointing and antagonism with a sensible and respectful global dialogue. The alternative may well be global conflagration.

#### Only antitrust can solve surging energy prices

Reich 11/11/21 [Robert, a former US secretary of labor, is professor of public policy at the University of California at Berkeley (been to a few of his lectures, good speaker), 11/11/21. https://www.theguardian.com/commentisfree/2021/nov/11/us-inflation-market-power-america-antitrust-robert-reich]

You can see a similar pattern in energy prices. If energy markets were competitive, producers would have quickly ramped up production to create more supply, once it became clear that demand was growing. But they didn’t.

Why not? Industry experts say oil and gas companies saw bigger money in letting prices run higher before producing more supply. They can get away with this because big oil and gas producers don’t operate in a competitive market. They can manipulate supply by coordinating among themselves.

Since the 1980s, two-thirds of all American industries have become more concentrated

In sum, inflation isn’t driving most of these price increases. Corporate power is driving them.

#### Filed rate preempts state/agency regulations AND creates incentives for corporate capture broadly---causes flagrant non compliance

Rossi 10 [Jim Rossi, Harry M. Walborsky Professor and Associate Dean for Research, Florida State University College of Law . Edited by Daniel A. Farber and Anne Joseph O’Connell. “Research Handbook on Public Choice and Public Law”, Ch 13 ‘Public choice, energy regulation and deregulation’. 7/30/10. https://www.e-elgar.com/shop/usd/research-handbook-on-public-choice-and-public-law-9781847206749.html]

One of the cases that illustrates the broad scope – and potential cost – of the filed rate doctrine for the operation of deregulated energy markets involved a price squeeze claim by a municipal utility in Massachusetts against New England Power Company, alleging, among other claims, that the defendant offered the city’s affiliates preferential treatment as customers over Norwood.32 FERC had purportedly approved these terms as ‘just and reasonable’ as a part of New England Power Company’s restructuring plan, which included approval of market-based tariffs; since both tariff s were on file with the FERC, the US Court of Appeals for the First Circuit invoked the filed rate doctrine as a complete bar to the price squeeze claim. The court reasoned that, ‘[i]t is the filing of the tariffs, and not any affirmative approval or scrutiny by the agency, that triggers the filed rate doctrine’.33 Because ‘the rationale for the filed rate doctrine is to protect the exclusive authority of the agency to accept or challenge such tariff s’,34 in the view of the First Circuit, ‘this is not a case that calls out for revisiting the fi led rate doctrine or for strenuous efforts to carve out exceptions . . . ’35

Federal courts continue to vigorously endorse the filed tariff shield, keeping competitor and consumer claims almost completely out of the hands of both state regulators and federal courts (Rossi 2003). For example, the US Court of Appeals for the Ninth Circuit applied the fi led tariff doctrine to imply federal pre-emption of the California Governor’s eff ort to protect consumers against strategic manipulation of its deregulated power market.36 In the court’s view, ‘interstate power rates fi led with FERC must be given binding effect’ by state regulators, even when regulating in areas subject to state jurisdiction. Thus, the court stated with a sweeping confidence, ‘FERC-approved rates preempt conflicting regulations adopted by the states’.37

Public choice themes reveal how the filed tariff doctrine not only influences the course of litigation after a tariff has been filed with regulators; it also creates incentives that can influence the private behavior of regulated firms in interacting with regulators before litigation commences. Specifically, by encouraging strategic filing of tariffs with regulators to pre-empt litigation, the fi led rate doctrine may encourage a type of forum-shopping behavior by private fi rms in the regulatory process before actual litigation commences (Rossi 2003). Institutionally, agencies and courts have never been very effective at monitoring the process of filing rates and other tariff s as a private forum-shopping strategy. Although many question the effectiveness of rate regulation, this may have been a moderately stable state of aff airs with cost-of-service regulation, given routine regulatory proceedings that served as some safeguard for public values. However, with the introduction of competition to formerly regulated industries and other regulatory transitions, market norms are emerging to expose a gap in regulatory agency ability to deter wrongdoing by private firms. To the extent the filed tariff doctrine encourages strategic manipulation of the tariffing process to foreclose judicial enforcement, it widens this gap and may even result in more radical deregulation than either Congress or agencies intend – essential firms may be able to elect to operate in markets without any antitrust, contract and tort protections.

Political scientists and economists have begun to analyze how interest groups, including regulated firms, decide to allocate their resources between various types of regulation, congressional, agency, or judicial (de Figueiredo and de Figueiredo 2002; Rubin 2001). Since it has unique implications for the behavior of regulated firms, the filed rate doctrine is a worthy candidate for similar analysis. Since the doctrine is only available on a widespread basis if a utility has fi led its tariff with federal regulators, the doctrine creates a strong ex ante incentive for private fi rms, such as regulated utilities, to invest more heavily than otherwise in lobbying regulators to accept or approve tariffs. By engaging in such conduct ex ante, private firms can avoid the uncertainty of an ex post judicial proceeding in which courts enforce antitrust, tort, or contract law. The doctrine thus encourages a type of forum shopping, triggered primarily by private decisions to provide information in the regulatory process. If a private fi rm desires the protection of the fi led tariff shield – immunity from antitrust and state common law suits for its market behavior – it has a strong incentive to divulge information (especially ambiguous information) to regulators ex ante, in anticipation that this information will be included in published tariffs and will minimize unpredictable, ex post judicial meddling (Rossi 2003). Where there is no check on the accuracy, clarity and relevance of the information fi rms are submitting in the regulatory process with tariff fi lings, opportunities for manipulation of regulation – and in particular institutional choice – are presented.38 To the extent regulated firms engage in strategic conduct ex ante, an institutional bias in favor of regulatory agencies, and away from courts and markets, is likely to result.

In the context of asymmetric information disclosure of non-verifiable information in contractual bargaining, Eric Talley has observed a need for judicial monitoring or verifi - cation (Talley 2001, 192–3). Typically, the balance between disclosure, on the one hand, and institutional decisions to regulate, on the other is monitored by the oversight of a third party who has the ability to protect the public interest. For example, in the context of tort litigation, securities regulation, and witness immunity from criminal prosecution, each of which use information disclosure to influence regulatory choices, third party oversight plays an important role in monitoring the divulgence of information to ensure that the choice is welfare-enhancing. In the context of many price-regulated industries, however, third-party monitoring of strategic disclosure is ineffective. Third-party monitoring of information disclosure in the utility regulation would depend on the actions of either regulators, as in the context of the SEC, or courts, as in the context of criminal immunity. To the extent that the filed rate doctrine applies, however, both regulators and courts have been ineffective at policing this balance ex ante to ensure that the application of the shield is not harmful to social welfare ex post in the utility regulation context.

As regulators have moved towards restructured markets, and away from cost-of service regulation, agencies have tended to acquiesce in, rather than seriously scrutinize or refuse, tariff filings. In fact, often filed tariff s become effective by operation of law after the passage of time, with little or no scrutiny by agencies. So the filed tariff bar curiously aligns the incentives of both private fi rms and regulators to include as many terms and conditions as possible in tariff s – even when these terms and conditions are a sham, in the sense that agencies often lack the power to seriously enforce them. This is not as much of a problem with cost-of-service regulation, since tariff s are subject to potential adjudication in a hearing; with restructuring, however, tariff s are frequently accepted without such scrutiny, presenting the potential for a new kind of private manipulation of the regulatory process.39 Given the principles of deference courts have provided to regulators in the late twentieth century (Kearney and Merrill 1998, 1396; Pierce 1989, 1046; Goldsmith 1989, 243), the judiciary has played very little role in policing private behavior in the tariffing process and its relationship to the fi led tariff shield.

### 1AC – Thumpers

#### NEW 9th circuit decision thumps da’s but doesn’t solve the aff

Hale 2/2 [Zach, Author @ S&P Global Market Intelligence. “9th Circuit ruling a 'game changer' in rooftop solar charge battle”. https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/9th-circuit-ruling-a-game-changer-in-rooftop-solar-charge-battle-68685918]

In a Jan. 31 ruling, a federal appeals court reversed a lower court's ruling and determined that a Salt River Project rooftop solar customer demonstrated that he suffered antitrust injury when the utility dramatically hiked the rates for its solar customers.

A three-judge panel for the U.S. Court of Appeals for the 9th Circuit determined that rather than increasing competition among power suppliers — a state policy preference — the rate hike decreased competition and, therefore, was exclusionary.

Jean Su, a senior attorney and energy justice director with the Center for Biological Diversity, tweeted that the ruling "is a game changer in the struggle to defend rooftop solar" as utilities across the U.S. seek to charge rooftop solar owners more for systems that effectively run billing meters in reverse. However, SRP's status as a federal utility that sets its own rates without oversight complicated the ruling.

At issue was a new pricing scheme introduced by SRP in 2015 that established separate rates for rooftop solar customers, allowing the utility to charge solar customers up to 65% more than earlier net-metering plans.

William Ellis, a rooftop solar customer, was joined by several other plaintiffs in suing SRP over the rate hikes. The plaintiffs alleged that the new program was designed to discriminate against customers who wish to use rooftop solar generation and stifle competition in the electricity market.

A district court dismissed the complaint on multiple grounds, including finding that the plaintiffs failed to comply with state statutory requirements and to show that the rate hike violated federal antitrust laws.

The 9th Circuit's Jan. 31 ruling upheld several of the lower court's findings, including the dismissal of Ellis's state-law claims. However, it reversed the lower court's ruling barring the antitrust claims, citing the court's "uncontested conclusion" that SRP's rate hikes were designed to discourage more rooftop solar installations by making them too expensive.

"By the district court's own logic, solar-energy systems are uneconomical, at least in part, because of SRP's exclusionary conduct," Judge Eric Miller wrote for the court. Ellis was "'directly and economically hurt by' SRP's exclusionary pricing scheme, which is aimed at suppressing competition by discouraging customers from installing solar-energy systems."

The court also shot down SRP's argument that the rate at issue cannot be challenged due to the filed-rate doctrine, which bars federal antitrust challenges to rates approved by federal and state agencies.

"The problem for SRP ... is that it does not file its rates with anyone other than itself," Miller noted. SRP's board sets the utility's rates, which are not reviewed by the Federal Energy Regulatory Commission or any state body.

"We have never extended the filed-rate doctrine to unilateral, unsupervised rate-setting by a market participant," Miller continued. "In that context, there is no reason to presume that 'rates are just and reasonable as a matter of law' and should be immune from collateral challenge."

The court similarly dismissed SRP's assertion that the displacement of competition "is a natural consequence" of its authority to set just and reasonable rates. Noting that Arizona has "clearly" stated the need for the state's power generation and supply to be competitive, the court found SRP's action is not entitled to so-called state action immunity because that action is inconsistent with state policy.

However, the court also concluded that the Local Government Antitrust Act, which precludes the recovery of antitrust damages "from any local government, or official or employee thereof acting in an official capacity," shields SRP from federal antitrust damages.

But because Ellis also sought declarative and injunctive relief, which is not barred by the Local Government Antitrust Act, the court remanded the case to the U.S. District Court for the District of Arizona for further proceedings.

#### Tons of antitrust now

Lina Saigol,1-18-22. reporter for Barron's in London, spent 16 years at the Financial Times Reuters. "M&A Is Booming. Gear Up for an Antitrust Crackdown.". Barrons. 1-18-2022. https://www.barrons.com/articles/mergers-booming-us-regulators-crackdown-51642534456?tesla=y

Aggressive antitrust enforcement is back. That is the stark message that President Joe Biden has sent the business community, and regulators have already kicked into action, threatening to rein in a [record-setting merger boom](https://www.wsj.com/articles/m-a-likely-to-remain-strong-in-2022-as-covid-19-looms-over-business-plans-11640255406?mod=Searchresults_pos9&page=1). Those charged with delivering Biden’s message are two Big Tech critics: Lina Khan, chair of the Federal Trade Commission, and Jonathan Kanter, head of the Justice Department’s antitrust division. On Tuesday, they outlined a plan to [revise how the agencies will review mergers](https://www.ftc.gov/news-events/press-releases/2022/01/ftc-and-justice-department-seek-to-strengthen-enforcement-against-illegal-mergers). They want public comment on how to update federal guidelines “to better detect and prevent illegal, anticompetitive deals,” they said in a statement. “Our country depends on competition to drive progress, innovation, and prosperity,” Kanter said. “We need to understand why so many industries have too few competitors, and to think carefully about how to ensure our merger enforcement tools are fit for purpose in the modern economy.” Earlier on Tuesday, [Microsoft](https://www.barrons.com/market-data/stocks/msft) (ticker: MSFT) said it would acquire gaming company [Activision Blizzard](https://www.barrons.com/market-data/stocks/atvi) (ATVI) in [an all-cash transaction valued at nearly $70 billion](https://www.barrons.com/articles/microsoft-buys-activision-blizzard-stock-acquisition-51642513147?mod=hp_LEAD_1&mod=article_inline). The acquisition needs regulatory and shareholder approval. Wedbush analyst Dan Ives wrote that there may be regulatory hurdles because of [the acquisition’s size](https://www.barrons.com/articles/microsoft-stock-activision-blizzard-deal-metaverse-51642522838?mod=hp_LEAD_1_B_1&mod=article_inline). But he expects the deal to close because Microsoft isn’t under the same scrutiny as some of its tech rivals. Earlier this month, a federal judge ruled the [FTC can move forward with its revised antitrust lawsuit](https://www.wsj.com/articles/federal-judge-rejects-facebooks-request-to-dismiss-ftcs-latest-antitrust-lawsuit-11641932982?mod=Searchresults_pos5&page=1) against [Meta Platform](https://www.barrons.com/market-data/stocks/fb) ‘s (FB) Facebook that alleges the social media platform is unlawfully suppressing competition. Many bankers and lawyers say they aren’t too worried, contending that tighter enforcement might slow the mergers and acquisitions market rather than derail it. That is due in part because the FTC is constrained by limited manpower and budget. Also, regulators don’t have authority on their own to block a merger—federal judges can issue orders blocking it. “Of course there has been an increased level of scrutiny and managements and boards have raised the bar on what they will consider, but we will continue to see large deals with compelling strategic imperative,” Bruce Evans, global co-head of M&A at [Deutsche Bank](https://www.barrons.com/market-data/stocks/db) , told Barron’s. In December, the FTC [sued to block](https://www.barrons.com/articles/ftc-sues-to-block-nvidias-40b-acquisition-of-arm-51638481709?mod=article_inline) computer-chip powerhouse [Nvidia](https://www.barrons.com/market-data/stocks/nvda) (ticker: NVDA) from spending [$40 billion](https://www.ftc.gov/news-events/press-releases/2021/12/ftc-sues-block-40-billion-semiconductor-chip-merger) for British technology provider Arm, saying the blockbuster deal would unfairly stifle competition. Just weeks earlier, the Justice Department [sued to halt](https://www.barrons.com/articles/justice-department-penguin-random-house-simon-schuster-merger-51635873536?mod=article_inline) a proposed [$2.2 billion](https://www.justice.gov/opa/press-release/file/1445916/download) tie-up between publishers Penguin Random House and Simon & Schuster, which would create a mega-publisher in the books market. The agency argues that consolidation would hurt authors and readers. The lawsuits come after Biden signed a sweeping [executive order](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/) in July aimed at curbing the power of big business by cracking down on anticompetitive practices in sectors ranging from agriculture to pharmaceuticals to labor. Consolidation in industries over the past several decades has denied Americans the benefits of an open economy and widened racial, income, and wealth inequality, the executive order stated. The administration sees less corporate competition as one of the causes of inflation. “Higher prices and lower wages caused by lack of competition are now estimated to cost the median American household [$5,000](https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/) a year,” according to the order. Rising equity markets and widespread stimulus measures helped spur companies worldwide to clinch more than 62,000 deals worth [$5.8 trillion](https://www.barrons.com/articles/global-deal-making-record-high-2021-51640960224?mod=article_inline) last year, up 64% from the previous year, according to data provider Refinitiv. [Big pharmaceutical companies](https://www.barrons.com/articles/drug-companies-cash-product-buys-research-51641423117?tesla=y&mod=article_inline) could be one of the biggest sectors at risk of regulatory scrutiny. The FTC put the industry on alert in July when it said it would review more deals amid skyrocketing drug prices and ongoing concerns about anticompetitive conduct. The industry still has record levels of cash to spend and needs to merge to innovate. By the end of this year, 18 large-cap U.S. and European biopharmas will have more than $500 billion in cash on hand, according to estimates by SVB Leerink analyst Geoffrey Porges. Deal makers will be closely watching [Pfizer](https://www.barrons.com/market-data/stocks/pfe) ‘s (PFE) [$6.7 billion takeover](https://www.barrons.com/articles/pfizer-arena-pharmaceuticals-acquisition-51639396154?mod=article_inline) of [Arena Pharmaceuticals](https://www.barrons.com/market-data/stocks/arna) , announced in December, which could become a test case for the FTC’s view of pharma M&A. Citi analyst Andrew Baum said the deal was “highly attractive” for Pfizer, but the key issue would be whether the “newly muscular” FTC would fight it and allow it to proceed given the significant overlap between important drugs. The two companies might need to sell parts of the business to push the deal through. Some companies are calling off their planned mergers as soon as they receive feedback. In December, outdoor sporting goods retailer [Sportsman’s Warehouse Holdings](https://www.barrons.com/market-data/stocks/spwh) (SPWH) and Great Outdoors Group, owner of the Bass Pro Shops chain, [canned](https://www.marketwatch.com/story/sportsman-s-warehouse-shares-fall-19-after-takeover-deal-terminated-271638556601) their deal in the belief that it wouldn’t be approved, according to a regulatory filing. Months earlier, insurance brokers [Aon](https://www.barrons.com/market-data/stocks/aon) (AON) and [Willis Towers Watson](https://www.barrons.com/market-data/stocks/wtw) (WTW) pulled their merger after the DOJ sued to stop the [$30 billion](https://www.barrons.com/articles/aon-willis-towers-scrap-30-billion-merger-amid-antitrust-impasse-51627328024?mod=article_inline) tie-up. The brokers said regulators’ objections created “unacceptable delay and uncertainty.”

# 2AC

## A2

### 2AC - Walt

#### Walt goes aff

Walt 20. [Stephen, Robert and Renée Belfer professor of international relations at Harvard University and a columnist for Foreign Policy. Will a Global Depression Trigger Another World War?. Foreign Policy. 5-13-2020. <https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/>]

If one takes a longer-term perspective, however, a sustained economic depression could make war more likely by strengthening fascist or xenophobic political movements, fueling protectionism and hypernationalism, and making it more difficult for countries to reach mutually acceptable bargains with each other. The history of the 1930s shows where such trends can lead, although the economic effects of the Depression are hardly the only reason world politics took such a deadly turn in the 1930s. Nationalism, xenophobia, and authoritarian rule were making a comeback well before COVID-19 struck, but the economic misery now occurring in every corner of the world could intensify these trends and leave us in a more war-prone condition when fear of the virus has diminished.

[THEIR CARD STARTS]

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”

Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term

## T Prohibit

### 2AC – Prohibit Filed Rate

#### Prohibit means hinder or preclude – prefer court interps

Prelogar 20 [Elizabeth, Acting Solicitor General of United States. “ZIMMIAN TABB, PETITIONER v. UNITED STATES OF AMERICA”. https://www.supremecourt.gov/DocketPDF/20/20-579/169149/20210216195252075\_20-579%20Tabb.pdf]

Application Note 1’s interpretation of the career offender guideline as including drug conspiracies is firmly grounded in the guideline’s text. The key term is “prohibits.” Unlike an adjacent provision stating that a “crime of violence \* \* \* is murder” or a list of other specified offenses, Sentencing Guidelines § 4B1.2(a)(2) (emphasis added), the definition of “controlled substance offense” extends to any felony offense that “prohibits the manufacture, import, export, distribution, or dispensing of a controlled substance,” id. § 4B1.2(b) (emphasis added). Although the term “prohibit” can mean “forbid by authority or command,” it can also mean “prevent from doing or accomplishing something.” Webster’s Third New International Dictionary of the English Language Unabridged 1813 (1986). In that sense, the term is synonymous with “hinder” or “preclude.” See, e.g., Black’s Law Dictionary 1465 (11th ed. 2019) (defining “prohibit” to mean “forbid by xlaw” or “prevent, preclude, or severely hinder”). Application Note 1 confirms that Section 4B1.2(b) uses the term “prohibit” in the latter sense. As the Eleventh Circuit recognized in United States v. Lange, 11 862 F.3d 1290, cert. denied, 138 S. Ct. 488 (2017), after reviewing the two accepted senses of “prohibit” noted above, see id. at 1295, Application Note 1 indicates that “‘[c]ontrolled substance offense’ cannot mean only offenses that forbid conduct outright, but must also include related inchoate offenses that aim toward that conduct.” Ibid. The court observed that “a ban on conspiring to manufacture drugs hinders manufacture even though it will ban conduct that is not itself manufacturing.” Ibid.; cf. United States v. Vea-Gonzales, 999 F.2d 1326, 1330 (9th Cir. 1993) (“The guideline refers to violations of laws prohibiting the manufacture, import, export, distribution, or dispensing of drugs. Aiding and abetting, conspiracy, and attempt are all violations of those laws.”).

#### Business practices are actions to complete business objectives

JGD ND [Just Great Database, “Business Practice”. https://jgdb.com/dictionary/business-practice]

Definition: is a specific method, action, regulation, operation or rule introduced or followed by an organization in order to meet or surpass its business objectives. Additionally, this term can refer to a group of related methods or processes. The introduction of basic business practices is essential for the company’s maintenance of a correct accountability structure. The most popular business practice types include a) developing business plans and strategies, b) defining the boundaries of accountability for each employee, c) determining company-wide and individual performance objectives, d) implementing open-ended communication channels, and e) providing the company’s employees with regular and relevant training.

## FERC Conditions

### 2AC – FERC Conditions

#### Legal certainty is key to DERs– potential changes destroy investment

Moroni et al. 16, Stefano Moroni is with the Polytechnic University of Milano; Valentina Antoniucci Department of Civil, Environmental and Architectural Engineering, University of Padova; Adriano Bisello is with EURAC Research, Institute for Renawable Energy, “Energy Sprawl, Land Taking and Distributed Generation: Towards a Multi-Layered Density,” Energy Policy, vol. 98, 11/01/2016, pp. 270-271

In addition to establishing appropriate rules and incentives,16 the institutional framework must grant legal certainty over time for both private users and investors. In Italy, the above-mentioned feed-in tariff was changed five times in eight years, and often in unexpected ways. It was the European Renewable Energy Fed-eration (EREF, 2013: 17) that made the point that, “One of the main principles in policy making should be to avoid retrospective changes all together...They destroy investment security and in-crease the cost of capital thus leading to an artificially higher cost of renewable energy technologies and therefore making the transition towards green energy more expensive”.

#### No authority

FERC 20 [“Frequently Asked Questions (FAQs) About FERC”. 8/7/20. https://www.ferc.gov/about/what-ferc/frequently-asked-questions-faqs/frequently-asked-questions-faqs-about-ferc#:~:text=FERC%20does%20not%20have%20the,propose%20and%20build%20transmission%20lines.]

FERC does not have the authority to regulate transmission line construction. This authority rests with the individual States or State Public Utility Commissions.

#### Filed rate prohibits the CP – it remains limited to prospective rate setting

Spence 12 [David B. Spence, Rex G. Baker Centennial Chair in Natural Resources Law at the University of Texas School of Law, and Professor of Business Government & Society. Robert Prentice, Professor and Department Chair, Business, Government and Society, McCombs School of Business, UT Austin. The Transformation of American Energy Markets and the Problem of Market Power.” 1/1/12. https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=3184&context=bclr]

The California crisis revealed that while FERC had anticipated some of the forms of unfair competition that emerged after restructuring (such as discrimination by owners of gas and electric transmission lines in favor of their affiliates), it apparently had not foreseen some of the ways in which sellers on competitive wholesale markets were able to capture and abuse market power, or to influence prices in the spot and derivatives markets. Exercising its continuing responsibility to regulate competition and ensure that wholesale rates (including market-based rates) were “just and reasonable,”149 the agency’s initial response to the crisis focused on preventing and deterring wholesale sellers from acquiring and abusing market power. FERC’s previous grants of authority to charge market prices for energy had always been conditioned on the sellers’ lack of market power; however, long-standing precedent under both the FPA and the NGA—the so-called “filed rate doctrine”150— prohibited FERC from retroactively penalizing sellers who charged market rates that had been “filed” with FERC.151 In the wake of the California crisis, courts affirmed the agency’s conclusion that the market rates charged by FERC-authorized sellers in the California spot markets were “filed rates” for purposes of the filed rate doctrine.152 Therefore, in the event a seller authorized to charge market-based rates acquires market power—the power to capture scarcity rents by influencing price—the only remedy available to FERC at the time was to revoke that seller’s authority to charge market-based rates prospectively. FERC can do this in either of two ways: (1) by reimposing cost-based rates for that seller, or (2) by imposing rate caps for that seller in the relevant market (what it calls “mitigation”).

#### FERC and state regulators are captured – guts the CP – latest evidence

Agarwal 21 [Aakshi, HARVEY M. APPLEBAUM ’59 AWARD Winning Paper in the Yale University Digital Platform for Scholarly Publishing, B.S. Yale University, Advisor: Professor Michael Fotos. “Regulatory Agency Capture: How the Federal Energy Regulatory Commission Approved the Mountain Valley Pipeline.” 4/30/21. https://elischolar.library.yale.edu/cgi/viewcontent.cgi?article=1083&context=applebaum\_award]

To illustrate, agencies are prime targets for capture by the industries they regulate. The agencies the FERC works with, like the USACE and BLM, were criticized for their permitting errors and inadequate analyses by the courts, which could suggest they have already been captured. Like these agencies, the state agencies that the FERC works with such as the West Virginia Department of Environmental Protection and Virginia Department of Environmental Quality can become captured by pro-industry ideology from the industry. These state agencies are also uniquely vulnerable to “electorally sanctioned pro-business governance,” because the revenues and jobs from big projects can cause elected state and local officials to persuade regulatory decision makers.251

Furthermore, the FERC’s agenda can stem from Congress or the Executive. The FERC is intended to be an independent agency, but the FERC derives its power and funding from Congress and an agenda from the Executive. For example, the Trump administration was reported to pressure agencies with its pro-energy stance on the Atlantic Coast Pipeline.252 John Schmidt, a former regulator with the USFWS, also described that the Trump administration did not operate like previous administrations.253 Likewise, Congress, the Executive, and the bureaucracy are also influenced by public opinion. If the public opinion in any constituency supports pipelines, the FERC can conduct “electorally sanctioned pro-business governance” where it favors the industry because the constituency desires that.25

Furthermore, Carpenter & Moss’ gold-standard for diagnosing capture emphasizes how a solid capture diagnosis must “Show action and intent by the industry (special interest) in pursuit of this policy shift sufficiently effective to have plausibly caused an appreciable part of the shift.”255 Though this study points to areas where the MVP appears to have influenced the FERC, the unwritten conversations between the MVP and the FERC are not revealed. However, a study of capture rarely finds a “eureka” piece of evidence such as a link between the regulator and the industry that can prove capture. Further analysis via FOIA requests may indicate more evidence of capture in the future to better meet this standard set by Carpenter & Moss.

Additionally, this study’s findings are confounded by the FERC’s own procedural errors and institutional justice concerns. Several parts of this study find errors in the FERC’s process such as tolling orders, which suggest capture due to how these errors favor the industry. However, it is also possible that the FERC conducts a poor public participation process on its own. For example, an investigation by the Office of the Inspector General on the FERC revealed the FERC did not post Notices of Schedule for Environmental Review for 9 years, including a period where the MVP was considered.256 During interviews, several participants raised similar concerns. A journalist brought up that several people they met did not have internet access and missed big updates that otherwise were not on the front of the news.257 Walker from the Sierra Club also explained that in her experience at the Sierra Club, “Of all agencies, FERC is the absolute worst in terms of public participation.”

Lastly, this study’s findings may not be representative of the FERC’s actions on other pipeline cases. The MVP and ACP are unique cases due to the level of pushback and how the opposition succeeded. 259 The level of permitting errors is unprecedented to this research’s knowledge and as Chairman Glick’s office confirmed, no one opposed pipelines like this before.260 Although the MVP may not entirely represent the FERC’s experiences with pipelines, it is an indication of how pipeline permitting may go with the new pipelines intended in Appalachia.

Though there are other explanations for the FERC’s pattern of decision-making and confounding variables are present in the study, this paper nevertheless posits the FERC is culturally and corrosively captured. The FERC’s nearly universal record of decision-making against the public interest is difficult to explain via other means, and there are numerous instances where the FERC should have been making decisions insulated from congressional or Executive influence but still chose to favor the MVP. Therefore, the evidence at hand points to weak cultural and corrosive capture and further studies will be needed to verify these claims.

#### State action is key for DERS – they will forum shop to use state action protections – Rossi and

Howard M. Crystal & Anchun Jean Su 18, Center for Biological Diversity, “Brief of Center for Biological Diversity, Food & Water Watch, Friends of the Earth, Greenpeace, Inc., Institute for Local Self-Reliance, and NC Warn, Inc. as Amici Curiae in Support of Respondent,” Salt River Project Agricultural Improvement and Power District, Petitioner, v. Tesla Energy Operations, Inc., fka Solarcity Corporation, Respondent, 2018 WL 993878, WestLaw

II. THE FOUNDATIONAL PREMISES OF SRP'S ASSERTED RIGHT TO AN UNBOUNDED MONOPOLY DO NOT HOLD IN THE AGE OF DISTRIBUTED SOLAR COMPETITION

SRP asserts that the state-action defense protects “the need to ensure that government policymakers exercise their discretion efficiently and freely, i.e., with the objective of advancing the public interest rather than of avoiding litigation.” Pet. Br. at 35 (emphasis added). Similarly, APPA claims that the state-action defense “protects public power utilities' ability to meet their public goals” and thereby “allows states to favor public objectives over free-market competition.” APPA Br. at 2, 4 (emphasis added). However, SRP and other public power companies are not advancing public \*17 objectives or the public interest when they improperly target distributed solar generation.

Stilling solar energy competition through discriminatory rates - a widespread action perpetuated by SRP and numerous other power companies - harms the public interest by obstructing the tremendous benefits that distributed solar generation brings to both consumers and the environment. Such discriminatory behavior therefore contravenes the underlying purpose of the regulated monopoly, which was to protect consumers and the public interest. The state-action defense, and interlocutory appeal of adverse state-action defense rulings, should not be available as a legal bulwark for power companies like SRP to exercise unbounded monopoly power that works against the public interest in this anti-competitive manner.

A. The Premise That Electricity Monopolies Necessarily Serve The Public Interest Has Been Undermined By Public Policy And Technology

“Until relatively recently, most state energy markets were vertically integrated monopolies - i.e., one entity … controlled electricity generation, transmission, and sale to retail consumers.” Hughes v. Talen Energy Mktg, LLC, 136 S. Ct. 1288, 1292 (2016). In the electricity industry's infancy of the early 1900s, the vertically integrated regulated monopoly made sense in light of the available technology and existent business structures of the time. Originally a natural \*18 monopoly, the electricity sector faced extreme barriers to entry, whereby construction of power plants and grid infrastructure required massive capital investments, as well as substantial economies of scale, whereby the average cost of delivered power became cheaper with new expansion in demand. Paul Garfield & Wallace Lovejoy, Public Utility Economics 15-19 (1964).

The foundational premise for granting vertically integrated utilities monopoly power was to ultimately serve the public interest.6 The electricity monopoly model sought to achieve widespread access to electricity as a public good while, at the same time, subjecting utilities to electricity rate regulation in order to prevent price gouging for ultimate consumer benefit. W.M. Warwick, U.S. Department of Energy, A Primer on Electric Utilities, Deregulation, and Restructuring of U.S. Electricity Markets 2.0 (2002), available \*19 at https://www.pnnl.gov/main/publications/external/technical\_reports/PNNL-13906.pdf; see also Smyth v. Ames, 169 U.S. 466, 544-45 (1898) (public utility monopolies were “created for [] public purposes [and] perform[] a function of the state,” and the government is obligated to “protect the people against unreasonable charges for services rendered by” the public utility).

However, the century-old premise that vertically integrated monopolies necessarily serve the public interest has been undermined by public policy and technology. In terms of policy, electricity regulators have actively encouraged competition in electricity generation in order to serve the public interest. For example, as the Court noted in FERC v. Electric Power Supply Ass'n, 136 S. Ct. 760 (2016), the Federal Energy Regulatory Commission (“FERC”) “often forgoes the cost-based rate-setting traditionally used to prevent monopolistic pricing […] [and] instead undertakes to ensure ‘just and reasonable’ wholesale rates by enhancing competition - attempting … ‘to break down regulatory and economic barriers that hinder a free market in wholesale electricity’ ” Id. at 768 (emphasis added) (quoting Morgan Stanley Capital Group Inc. v. Public Util. Dist. No. 1 of Snohomish Cty., 554 U.S. 527 (2008)).

Indeed, Congress passed a series of modern laws intended to promote competition in the electricity sector and unbundle the services of the traditional vertically integrated monopoly, all as a means to advance the public interest. Thus, due to “[t]echnological advances [that] made it possible to generate electricity \*20 efficiently in different ways and in smaller plants” and through grids that were “unlike the local power networks of the past,” New York v. FERC, 535 U.S. 1, 7 (2002), Congress passed both (i) the 1978 Public Utility Regulatory Policies Act, Pub. L. No. 95-617, 92 Stat. 3117, which directed FERC to promulgate rules requiring monopoly utilities to purchase electricity from independent power production facilities, and (ii) the Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776, authorizing FERC to order individual monopoly utilities to provide transmission services to unaffiliated wholesale generators. See New York, 535 U.S. at 9. In short, the assumption that the vertically integrated utility monopoly automatically serves the public interest has been undermined by public policy promoting competition in electricity services.

Distributed solar technology further subverts the economic and public interest assumptions justifying the traditional vertically integrated electricity monopoly. Distributed solar technology, with a relatively low barrier of entry, is de-centralized and can be owned or leased by consumers who are otherwise captive to the local utility monopoly. Ari Peskoe, Unjust, Unreasonable, and Unduly Discriminatory: Electric Utility Rates and the Campaign Against Rooftop Solar, 11 Tex. J. Oil Gas & Energy L. 211, 215 (2016). Distributed solar generation thus dispels the assumption that electricity service necessarily requires large economies of scale. John Farrell, Inst, for Local Self-Reliance, Is Bigger Best in Renewable Energy? 2-4 (2016), available at \*21 https://ilsr.org/wp-content/uploads/2016/12/Is-BiggerBest-in-Renewable-Energy-Report-Final.pdf. As such, distributed solar generation also fundamentally ruptures the business model of the vertically integrated monopoly, obviating the need for power companies like SRP to continuously construct infrastructure as their engine of profit generation. Peskoe, 11 Tex. J. Oil Gas & Energy L. at 228-32.

Taken together, these changes in public policy and technology, particularly distributed solar generation, undermine the assumption that electricity companies require deference to their monopoly power in order to serve the public interest.

B. Monopoly Power Companies Opposing Distributed Solar Generation Are Acting Against The Public Interest

1. Discriminatory rates against rooftop solar are widespread

Across the United States, both public and private electric utility companies have responded to competition from distributed solar generation with a range of discriminatory tactics, chief among them being the imposition of retail rate structures that serve to reduce solar power's cost advantage over grid-supplied energy. See Michael Wara, Competition at the Grid Edge: Innovation and Antitrust Law in the Electricity Sector, 25 N.Y.U. Envtl. L.J. 176, 189 (2017). In the last few years alone, these types of rate cases seeking to penalize rooftop solar customers have amounted to hundreds \*22 and have occurred in the majority of U.S. states. Id. at 194-99; see also N.C. Clean Energy Tech. Ctr., The 50 States of Solar Report: Q4 2017 and 2017 Annual Report (2018), available at https://nccleantech.ncsu.edu/wp-content/uploads/Q4-17\_SolarExecSummary\_Final.pdf (documenting over 100 policy actions negatively targeting distributed generation customers in over 35 states in 2017 alone).7

Power utilities have imposed discriminatory retail rate structures on distributed solar customers in several forms. First, utilities have implemented either new or increased fixed monthly bill charges that are discriminatorily high for customers with distributed solar generation, known as a “fixed charge.” For example, Santee Cooper, a state-owned public power utility \*23 in South Carolina, imposed a fixed charge of $4.40/kW as well as further stand-by charges on distributed solar customers, regardless of the amount of energy used by the customer. See Santee Cooper, Distributed Generation Rider DG-17 (2015), available at https://www.santeecooper.com/pdfs/rates/ratesadjustment/dg-17-rider.pdf; see also, e.g., Bd. of Dir. of Sacramento Mun. Util. Dis., Resolution No. 15-07-06 (Sacramento Mun. Util. Dist. July 16, 2015) (imposing higher fixed charges and time-of-use rates on solar customers); Kan. City Power & Light, Docket No. 15-WSEE-115-RTS (Mo. Corp. Comm'n Sep. 24, 2015) (Order Approving Stipulation and Agreement) (approving a 21% increase of fixed charges on distributed energy customers); Conn. Light & Power, Docket No. 14-05-06 (Conn. Pub. Util. Regulatory Authority Dec. 17, 2014) (Order Amending Rate Schedules) (also imposing a 20% increase of fixed charges on distributed energy customers).

Second, utility companies have imposed electricity charges on solar customers that vary as a function of the consumer's peak demand for energy, known as a “demand charge.” See, e.g., NSTAR Elec. Co., D.P.U. 17-05-B (Mass. Dept. of Pub. Util. Jan. 5, 2018) (Order Establishing Eversource's Rate Structure) (approving mandatory demand charges specifically on residential distributed solar customers).

SRP's new rate structure exemplifies both of these discriminatory rate practices, as SRP imposed both a fixed distribution charge of up to $37.88 per month and increased demand charges ranging from $30 to $125 \*24 per month for all residential distributed solar customers. J.A. 33 (¶ 108). These rate changes resulted in an increase of approximately 65% in energy fees (or $600 per year) for a typical solar customer, as opposed to a 3.9% increase in energy fees for a non-solar customer. See J.A. 8-9 (¶ 5); see also, e.g., Wis. Electric Power Co., Docket No. 5-UR-107 (Wis. Public Service Comm'n Dec. 23, 2014) (Final Decision) (approving application to impose high demand charges, fixed charges, and time-of-use rates on distributed solar customers).

2. Discriminatory rates against rooftop solar harm consumers and the environment

Wide-scale discriminatory rates targeting solar power deployment undermine the very public objectives that power utility monopolies were created to serve because they harm both consumers and the environment.

First, rates that stifle the deployment of rooftop solar harm consumers by diminishing the economic and social value they receive through generating their own power. Due to technological advances, the cost of residential solar has dropped precipitously and is cost-comparable, if not lower, than the average price of power purchased from the utility grid. See, e.g., Gideon Weissman & Brett Fanshaw, Shining Rewards: The Value of Rooftop Solar Power for Consumers and Society (2016), available at https://environmentamerica.org/sites/environment/files/reports/AME%20ShiningRewards%C20Rpt%C20Oct16%201.1.pdf; Mark Muro & Devashree \*25 Saha, Rooftop Solar: Net Metering is a Net Benefit, Brookings Institution (May 23, 2016), available at https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/. Further, distributed solar generation can serve to democratize power ownership by increasing local control over power decisions, returning economic benefits directly to the served community and promoting a more equitable distribution of economic and social benefits across racial and economic lines. See generally Local Clean Energy All. & Center for Social Inclusion, Democratizing Our Energy Future (2015), available at http://www.localcleanenergy.org/files/Climate%20Justice%C20Energy%20Platform.pdf.

Second, discriminatory rates inhibiting distributed solar generation stave off the public health benefits associated with phasing out fossil fuel combustion from power plants. Nearly 40% of Americans are exposed to toxic air pollution from fossil fuel power plants that often reaches dangerous levels, resulting in the increased incidence of asthma and chronic bronchitis and leading to hundreds of thousands of premature deaths per year. See Am. Lung Ass'n, State of the Air 9 (2017), available at http://www.lung.org/assets/documents/healthy-air/state-of-the-air/state-of-the-air-2017.pdf. Critically, these public health impacts are disproportionately borne by communities of color and low-income, who more often live in closer proximity to fossil fuel power plants. Id. at 41; see also National Ass'n for the Advancement of Colored People & Clean Air Task Force, Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil and Gas Facilities \*26 (2017), available at http://www.naacp.org/wp-content/uploads/2017/11/Fumes-Across-the-Fence-Line\_NAACP\_CATF.pdf. Accordingly, obstructing distributed solar generation directly exacerbates the country's systemic public health disparities by perpetuating reliance on fossil fuel power.

Finally, these discriminatory rates hinder the country's urgently needed transition to clean energy in order to combat climate change. More than 60% of America's electricity still derives from fossil fuels. U.S. Energy Info. Admin., Electricity Explained (May 10, 2017), available at https://www.eia.gov/energyexplained/index.cfm?page=electricity\_in\_the\_united\_states. As a result, the electricity sector is the single largest source of GHG emissions in the country, accounting for nearly one-third of total U.S. GHG emissions in 2015. U.S. Envtl. Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015 ES-24 (2017), available at https://www.epa.gov/sites/production/files/2017-02/documents/2017\_executive\_summary.pdf.

Accordingly, discriminatory ratemaking against the deployment of distributed solar energy, like that implemented by SRP, undermines the inherent public interest in “aggressive and sustained greenhouse gas emission reductions” in order to avoid some of the worst impacts of climate change. Jerry Melillo et al., U.S. Global Change Research Program, Climate Change Impacts in the United States: The Third National Climate Assessment 13 (2014), available at http://s3.amazonaws.com/nca2014/low/NCA3\_Climate\_Change\_Impacts\_in\_the\_United%20States\_LowRes.pdf?download \*27 =1 (“2014 Climate Assessment”). Indeed, the public harms caused by climate change are immense: the increased extinction of species and ocean acidification; the rapid loss of Arctic sea ice and the collapse of Antarctic ice shelves; declining global food and water security; and the heightened frequency of heat waves and other extreme weather events, including contribution to the three unprecedented hurricanes that ravaged the Gulf Coast, Florida, and Puerto Rico in 2017. See generally 2014 Climate Assessment; see also Michael Mann et al., What We Know About the Climate Change-Hurricane Connection, Scientific American (Sept. 8, 2017), available at https://blogs.scientificamerican.com/observations/what-we-know-about-the-climate-change-hurricane-connection/.

For all these reasons, it could not be clearer that by obstructing the realization of these consumer and environmental benefits, utility rates which improperly discourage the transition to renewable energy sources like rooftop solar are contrary to the public interest.

C. Allowing Public Power Companies To Obtain Interlocutory Appeal Of State-Action Immunity Rulings Will Only Encourage More Discriminatory Rates Contrary To The Public Interest

The central premise of SRP's asserted right to interlocutory appeal is that it is necessary to allow public power entities to focus their attention on “advancing the public interest” without potential exposure to \*28 antitrust liability. Pet. Br. at 35. However, because SRP and other utilities' decisions targeting distributed solar generation are arguably contrary to the public interest, SRP raises no “particular value of a high order” warranting immediate appeal under the collateral-order doctrine. Mohawk Indus., Inc. v. Carpenter, 558 U.S. 100, 605 (2009).

Instead, allowing interlocutory appeal in these circumstances will serve to further encourage power companies to unfairly obstruct distributed solar development in a manner contrary to antitrust laws, with the expectation that they can avoid liability by invoking the state-action defense and, at minimum, significantly delay antitrust litigation by immediately appealing adverse rulings. By requiring SRP to defend its rates - including its purported entitlement to the state-action defense - like any other litigant, the Court will level the playing field in an area where it has become increasingly apparent that competition, rather than the perpetuation of insulated monopoly power, will best serve the public interest.

Such a result would also be consistent with this Court's precedents recognizing that power companies are not immune from competition and antitrust laws. In Otter Tail Power Co. v. United States, 410 U.S. 366 (1973), the Court decisively held that the Federal Power Act does not “immunize” power companies from “antitrust regulation.” Id. at 374-75 (permitting the federal government to seek antitrust remedies against a power utility which, among other things, refused to sell power to municipalities and transfer competitors' \*29 power over its lines). As the Court has explained, a power company's “franchise to exist as a corporation and to function as a public utility … creates no right to be free of competition.” Tenn. Electric Power Co. v. Tenn. Valley Auth., 306 U.S. 118, 139 (1939) (overruled in part on other grounds); see also Alabama Power Co. v. Ickes, 302 U.S. 464, 480 (1938) (holding that power utilities do not “possess” any inherent legal “right to be immune from lawful … competition”). These findings are grounded in the recognition that “[t]he public interest is far broader than the economic interest of a particular power supplier.” Otter Tail Power Co., 410 U.S. at 380 n.10. Accordingly, Amici urge the Court to recognize that, at least with respect to monopoly practices serving to obstruct distributed solar generation, the state-action defense and interlocutory appeal of adverse immunity rulings should be disfavored.

## K

### 2AC – K

#### Alt can’t spillover

* Constant pro-growth messages in media and politics make it the most effective frame—alt must fiat mindset shift to solve, which should be rejected
* The alt’s strategy fails—creates resistance and unifies the pro growth camp
* Prefer—sociological studies demonstrate difficulties creating a unified, successful anticap movement

Drews 16 [Stefan Drews, Institute of Environmental Science and Technology, Universitat Autònoma de Barcelona, Miklós Antal, Institute of Social Relations, Eötvös Loránd University, "Degrowth: A “missile word” that backfires?", June 2016, https://www.sciencedirect.com/science/article/pii/S0921800915305516?casa\_token=MdngnyoLsRYAAAAA:rfo3ysm8jZPC3m992fZng2HQB7iKrhE69yQO3WOSVoAwtO2aUeguS-9p0w-irLYI7jF\_54UBqcQ#!]

When thinking about economic growth, most people will make connections to positive ideas such as prosperity, employment, development, economic and social improvement, higher wages, and well-being (Mohai et al., 2010), which makes it a very effective frame in politics (GSG, 2015). How much these positive connections are justified by evidence is debatable, but most ordinary people will see economic growth as something good. Very few people would think about environmental unsustainability, resource/energy limits, or social limits to growth (Mohai et al., 2010). Again, the mass media plays an important role in shaping these associations simply by the constant repetition of explicit pro-growth messages.

Degrowth, on the other hand, may evoke thoughts about crisis, recession, spending cuts, lower salaries, and job losses. The reason for this is straightforward. In economic parlance, growth generally means GDP growth, which is a main policy goal. People who are not familiar with the term degrowth—i.e. the vast majority—may simply, and often unconsciously, negate that meaning and understand degrowth as economic contraction or an intentional reduction of the GDP. As past and current periods of GDP decline have been socially and psychologically painful (De Neve et al., 2015), the first spontaneous conscious reactions to the idea of degrowth will be generally negative. The retrieval of such negative conscious associations is facilitated by the initial affective judgment of degrowth. Clearly, losses loom larger than gains in the degrowth frame (see also Davey, 2014).

Therefore, attacking growth head on is a strategy that will inevitably create a lot of resistance and—if it ever becomes more influential—may even activate and unify the growth camp. Winning the battle seems unlikely as long as in most countries economic growth really is correlated with important short-term goals such as lower unemployment, better public finances, and higher social stability (Antal and van den Bergh, 2013). Furthermore, changing initially negative opinions about degrowth will be difficult because people are generally more reluctant to change their prior beliefs than to develop new and positive opinions about an issue (Lord et al., 1979). In addition, an abstract slogan like degrowth communicated by the far left is problematic because convincing an audience whose political positions differ from the speaker's is more effective with concrete messages (Menegatti and Rubini, 2013). If repoliticizing environmental issues is the way to go, then it should be done in a way that creates a more favorable starting position in the debate.

#### Innovation reduces costs of climate action --- that creates a feedback loop where each innovation spurs political will

**Azevedo et. al 20** [INÊS AZEVEDO is Associate Professor of Energy Resources Engineering at Stanford University, “The Paths to Net Zero, How Technology Can Save the Planet”, https://www.foreignaffairs.com/articles/2020-04-13/paths-net-zero]

These political hurdles are formidable. The good news is that technological progress can make it much easier to clear them by driving down the costs of action. In the decades to come, innovation could make severe cuts in emissions, also known as “deep decarbonization,” achievable at reasonable costs. That will mean reshaping about ten sectors in the global economy—including electric power, transportation, and parts of agriculture—by reinforcing positive change where it is already happening and investing heavily wherever it isn’t.

In a few sectors, especially electric power, a major transformation is already underway, and low-emission technologies are quickly becoming more widespread, at least in China, India, and most Western countries. The right policy interventions in wind, solar, and nuclear power, among other technologies, could soon make countries’ power grids far less dependent on conventional fossil fuels and radically reduce emissions in the process.

Technological progress in clean electricity has already set off a virtuous circle, with each new innovation creating more political will to do even more. Replicating this symbiosis of technology and politics in other sectors is essential. In most other high-emission industries, however, deep decarbonization has been much slower to arrive. In sectors such as transportation, steel, cement, and plastics, companies will continue to resist profound change unless they are convinced that decarbonization represents not only costs and risks for investors but also an opportunity to increase value and revenue. Only a handful have grasped the need for action and begun to test zero-emission technologies at the appropriate scale. Unless governments and businesses come together now to change that—not simply with bold-sounding international agreements and marginal tweaks such as mild carbon taxes but also with a comprehensive industrial policy—there will be little hope of reaching net-zero emissions before it’s too late

## Politivs

### 2AC - Politics

#### Biden’s already spending PC on antitrust—bills are moving in Congress

Nylen 2/3 [Leah Nylen , Adam Cancryn, "White House backs U.S. tech antitrust bills", 2/3/22, https://subscriber.politicopro.com/article/2022/02/white-house-backs-tech-antitrust-bills-00005513?source=email]

The White House said Thursday that it supports congressional efforts to rein in the U.S. tech giants, pushing back on concerns that a Biden administration statement critiquing European regulatory efforts signaled a change in policy.

“We are supportive of bipartisan progress being made in Congress on these issues,” the White House said in a statement to POLITICO. “The United States shares the concerns and policy objectives that the European Union seeks to address. Even as we engage on concerns we have about distinct elements of the EU’s approach, we are encouraging the bipartisan progress being made in Congress on these issues.”

While Biden has picked a number of progressive antitrust advocates for his administration, this marks the first time the administration has weighed in on the antitrust measures moving through both houses of Congress.

Easing anxiety: The White House statement comes as the Biden administration offered criticism of European legislation to curb the power of the tech giants. Antitrust advocates in Washington worried that could also mean Biden wouldn't support pending U.S. legislation to rein in the largest tech players.

White House officials, speaking anonymously to discuss internal deliberations, stressed that the administration’s concerns with the planned European tech rules had no bearing on their support for U.S. congressional efforts. Those include legislation in both the House and Senate that aim to help level the playing field for technology companies by forbidding tech giants Apple, Amazon, Facebook, Google and Microsoft from discriminating against rivals and buying startups before they can grow into competitors.

Convenient timing: The statement came hours after a key Senate panel advanced legislation (S. 2710 (117)) to rein in Apple and Google’s dominance over mobile app markets.

#### No Russia détente

Mützenich 1/20 [Dr Rolf Mützenich has been chairman of the SPD parliamentary group in the Bundestag since September 2019. “‘A policy of détente for this day and age’” https://www.ips-journal.eu/interviews/a-policy-of-detente-for-this-day-and-age-5666/]

Last week was dominated by the West’s negotiations with Russia. Following the OSCE talks, Russia demanded a quick decision on the security guarantees that it needed, otherwise it would deploy troops to Cuba or Venezuela. Russia’s foreign minister sees no reason for further talks at the moment, saying Russia will resort to other measures. So, what next? Are things about to escalate?

#### Courts do the aff

Macey 20 [Joshua C. Macey, Assistant Professor of Law, University of Chicago Law School. His Article Zombie Energy Laws (73 Vand. L. Rev.) received the 2020 Morrison Award for most impactful environmental law article of the previous year. “Zombie Energy Laws .” May 2020. https://scholarship.law.vanderbilt.edu/cgi/viewcontent.cgi?article=3475&context=vlr]

The previous Part explained how three energy laws that emerged to protect consumers in the era of rate-regulated public utilities are now distorting energy markets and blocking renewable developments. This Part argues that these laws no longer make sense and should be abandoned. Overturning the filed rate doctrine should be a straightforward affair. Courts created the doctrine, and it is in their power to destroy it now that it is being applied to markets that bear no resemblance to the regulatory apparatus it was designed for.

#### That shields

Jason Mazzon 18, Professor of Law at the University of Illinois at Urbana-Champaign; Chicago-Kent Law Review, “Above Politics: Congress and the Supreme Court in 2017”, 8/9/2018, Volume 93

Absent, too, in the modern Congress is any real sense that the Supreme Court can be brought to heel: say, by constitutional amendment, by stripping the Court of funding, by hauling in members of the Court to justify their rulings before congressional investigatory committees, by appointing special counsels to review and report back on what the Court does, by impeaching the Justices (or locking them up), or by simply ignoring or defying judicial rulings. Perhaps the Court does not rule in ways that offend enough members of Congress (or their constituents) for them to invest the energy—and political capital—required to generate these sorts of measures. Perhaps, instead, members of Congress do not consider such measures appropriate in our constitutional system. In either case, modesty on the part of Congress is the result, even in an era when a single party controls both the Congress and the White House. The lesson for the Court is that so long as it continues doing—more or less—what is has done in recent years, it has very little to fear from the Congress.

Conclusion

After President Trump nominated Neil Gorsuch to fill the vacancy on the Supreme Court left by the death of Justice Scalia, fifteen House Republicans sponsored a Resolution that “the House firmly supports the nomination of Neil Gorsuch to the Supreme Court” and “the Senate should hold a swift confirmation of this nomination.”229 The proposed resolution died, without further action, in the Committee on the Judiciary. While Gorsuch was, of course, confirmed, the failure of the Republican-controlled House to pass a simple resolution supporting the nomination is telling. After an election season in which the Supreme Court figured very prominently, aside from the Senate’s confirmation of a new Justice, Congress in 2017 accomplished nothing with respect to the Supreme Court. Various bills and resolutions—some sponsored by Republicans, others by Democrats, and some garnering bipartisan support—targeted statutory and constitutional rulings by the Court and sought also to impose new regulations upon the Court’s activities. Even the most modest of these proposals failed to advance through the legislative process and become law. We like to think that the Supreme Court, guided solely by the rule of law, is above politics. The experience of 2017 suggests that the Court may also be above politics in the quite different sense that its rulings and activities are largely immune to political response and redress

#### No immediate Ukraine invasion but miscalc from collapse is unique

Downer 1/30 [Alexander, Australia's longest serving foreign minister, from 1996 to 2007, and most recently Australian High Commissioner to the UK. “There are four things to suggest Russia won’t invade Ukraine”. 1/30/22. https://www.afr.com/policy/foreign-affairs/there-are-four-things-to-suggest-russia-won-t-invade-ukraine-20220127-p59rst]

There are four things analysts and practitioners of international relations need to grasp: geography, history, economics and politics. Everyone understands geography, some have a grasp of history, fewer understand economics and very few academics and diplomats have more than a rudimentary grasp of politics.

So let’s look at Russia and Ukraine through those lenses. If we do, we’ll guess that short of a catastrophic miscalculation, the Russians won’t invade Ukraine, but the stand-off between Russia and the North Atlantic Treaty Organisation will last for years.

A soldier walks along a trench in territory controlled by pro-Russian militants on the front line with Ukrainian government forces. AP

Let’s start with geography. Russia is 17 million square kilometres and has few natural borders. That creates within Russia a sense of vulnerability. Contrast that with the Five Eyes countries: three of them are island nations and Canada and the US are effectively invulnerable to continental attack – at least since the 1812 war!

Add history to that geography: Russia has been invaded repeatedly from the West by the Lithuanians (they were once a major power), the Swedes, the French and twice in the past century by the Germans. Two-thirds of the Wehrmacht was deployed against Russia in the Second World War and in that war alone about 20 million Russians were killed. Much of our national story is defined by our exploits and losses in war: so too Russia’s. After the war, the NATO alliance was built to deter – as we saw it – Russia. For the Russians, it was a Western alliance built against them.

It’s not so simple to think of Russia as a dictatorship run by the autocratic President Vladimir Putin. Russia fears the West even if we think that fear is groundless. For Britain and Australia, our defence is the sea and our navies. America is invulnerable. Oh, and then there’s New Zealand. It depends on Australia. Russia’s defence strategy is to ensure its neighbours are either allies or at least neutral. It sees its neighbours as buffer states

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So, from a Russian perspective, the collapse of the Soviet Union was a strategic disaster. Much of central and eastern Europe left the Soviet Union and joined the West. Poland, Hungary, the Czech Republic, Bulgaria, Romania and the three Baltic states all joined NATO and the European Union, Turkey is a NATO member and central Asian republics became independent.

Missed opportunities

Whatever we might think, Russians saw this as a strategic disaster. The buffer states were nearly all gone. There’s Belarus, and look how aggressively Russia is propping up its grim regime. And then there’s Ukraine – a huge country with 50 million people and it’s leaning to the West.

There’s an interesting debate to be had about what Russia should have done after the collapse of the Soviet Union to guarantee a friendly hinterland. For a start, it could have pursued gentle but active diplomacy in an endeavour to win over the political and social elites in neighbouring countries. This wouldn’t have been easy given the heavy-handed imperialism of Cold War Moscow.

It might also have made sense to invest heavily in economic ties with those countries. That sounds easier said than done given that the Russian economy is so small compared to that of western Europe and, more specifically, the European Union.

To its credit, Moscow did try a variation of these strategies in the 1990s. It is clear that President Putin has decided these strategies don’t work and that instead Russia should use the one advantage it has over neighbouring countries, and that is military power. The decision to invade part of Ukraine, to incorporate Crimea into Russia and to destabilise the Russian-speaking eastern part of the country has not been a success if success is defined as seducing Ukraine away from the West.

Not all downside

Prior to 2014, when Crimea and all of the eastern part of Ukraine was fully part of Ukraine, the Ukrainian population was split almost evenly between those who favoured the move to the West and those whose sympathies lay with Russia. The decision to invade Crimea and occupy Donbas and other parts of eastern Ukraine has taken 13 per cent of the population out of Ukraine. That 13 per cent was overwhelmingly pro-Russian and so now the pro-Western population that remains is in a substantial majority.

That is not to say the seizure of Crimea has been all downside. Russia was able to get complete control over Sebastopol where its Black Sea fleet is based. Prior to 2014, the Russians paid a hefty price to lease Sebastopol port, and that brought with it not just financial costs but endless disputes with the Ukrainians over the use of the Black Sea fleet.

So, geography and history tell us a lot about why President Putin is amassing troops on the border of Ukraine: he wants to make sure that Ukraine and other non-NATO countries that border Russia do not join the institutions of the West.

Would invading and occupying Ukraine be the easiest solution for President Putin?

This is where economics comes into play. Of course, the Russian military is sizeable enough to take Ukraine, although it would not do so without the Ukrainians putting up a fierce fight. There would be substantial casualties and the long-term occupation of Ukraine would be expensive in terms of cost and lives.

But over and above those costs, the Russians would have to pay a huge price in terms of sanctions, particularly financial sanctions, imposed by the United States and its allies in NATO.

Now, it’s true the Russian people are tough and used to hard times, but if those sanctions were so severe that they caused a major recession in Russia itself, this could cause substantial political problems for President Putin.

Activists hold posters during a SayNOtoPutin rally in Kiev, Ukraine, this month.

RELATED

Why the West cannot afford defeat in Ukraine

As it is, the Russian economy is effectively a petro-economy propped up by oil and gas sales to the European Union. Indeed, the European Union imports one-third of its all oil and gas from Russia. It’s often said that the Europeans will appease Russia because of fear that Russia could cut off energy supplies to Europe.

But here’s our old friend economics coming into play again. If the Russians did that, they wouldn’t have any revenue. It wouldn’t be easy to divert the gas exports that go to Europe by pipeline to other parts of the world.

So, when I consider geography, history, economics and politics, I come to this conclusion: Russia will maintain huge numbers of troops on the Ukrainian border and will sometimes cause trouble in Ukraine, including through cyber attacks. But Russian economics and politics tell me that President Putin would be reckless and foolhardy if he were to invade Ukraine.

I don’t think he’ll do that. And, by the way, away from the media I’m told by contacts in Washington that Joe Biden, Antony Blinken and the National Security Council think this too. They think Putin has overplayed his hand.

## Bedoya

### 2AC—AT: Bedoya

#### DOJ’s a massive alt cause. Political fights cause fights over ATR deputies, not the FTC—cal’s yellow

Moran 1-6-22 (Max Moran, Research Director of the Personnel Team at the Revolving Door Project, studied International Relations and Journalism at Brandeis University, “Merrick Garland Is Undermining the Biden Antitrust Strategy,” The American Prospect, 1-6-2022, https://prospect.org/justice/merrick-garland-is-undermining-biden-antitrust-strategy/)

The Biden administration is threatening new anti-monopoly enforcement actions against the Big Four meatpacking companies, in part to counter inflation at the grocery store and in part to address decades of exploitation of small farmers. On Monday, the president dispatched Agriculture Secretary Tom Vilsack and Attorney General Merrick Garland to hear grievances from small ranchers, while the White House builds a new web portal to gather complaints. While the White House’s proposals for funding small meat processors to increase competition are rather unsatisfying, the enforcement piece could have a real impact.

This initiative has caused the usual grumbling from neoliberal economists, and the usual corrections to the usual grumbling. But no one has yet explained how Biden plans to actually follow through on his threat—a problem for which Garland is partly to blame.

As The Information’s Josh Sisco reported on Tuesday, there are currently just two deputies trying to manage the entire DOJ Antitrust Division (ATR) alongside Assistant Attorney General Jonathan Kanter, who was confirmed only two months ago. ATR typically has at least 12 deputies and top advisers in the “front office” who oversee about 700 career staffers. And that was under past administrations, which didn’t have nearly as ambitious an antitrust agenda as Biden’s. Reversing four decades of Borkian antitrust sloth requires a cohesive and energetic senior leadership team.

Meanwhile, the Federal Trade Commission, the executive branch’s other main antitrust enforcer, remains in a 2-2 partisan deadlock, as Senate Republicans blockade Biden nominee Alvaro Bedoya from being confirmed as a commissioner. He has a path to 51 Senate votes, but arcane (and unnecessary) procedural hurdles have slowed the process to a crawl, hindering the other avenue to antitrust action.

Biden can only do so much to move Bedoya’s nomination. But in theory, nothing prevents him from hiring whomever Kanter personally trusts to help execute their shared agenda. The deputies at ATR are not Senate-confirmed positions. So what’s causing the chaos?

The problem isn’t procedural; it’s political. In addition to diversity concerns, Sisco reports that “ideological divisions” about anti-monopoly enforcement within the Biden administration are causing fights over any potential selection for the ATR deputies.

These divisions should be familiar to anyone who followed the initial fight over antitrust nominees during the Biden transition last year. While Biden himself seems sold on the benefits of a strong anti-monopoly agenda, Garland testified last year that he sees no problem with hiring big corporations’ preferred defense attorneys to oversee their former firms and clients. Garland and other anonymous voices floated a slew of names to run ATR throughout last year—anyone but Kanter, whom progressives favored.

While Garland lost that initial fight, he seems content to starve Kanter of resources as a work-around, even if it means sabotaging his own president’s agenda. Garland, after all, appears to consider it core to his job to throttle the better parts of the Biden administration for the sake of an imagined apolitical comity. He rushed to the Trump administration’s defense over the objections of the White House many times over the last year, and continues to undermine environmental action wherever he can. It’s perfectly in keeping with his priorities to undermine antitrust enforcement too.

The corporate revolvers and pro-monopoly hacks Garland boosted also haven’t gone anywhere. Again according to Sisco, Sonia Pfaffenroth is now in the mix for one of those coveted jobs in the ATR “front office.” Pfaffenroth revolved from Arnold & Porter into the Obama ATR and back over the last two decades. In private practice, she’s defended pharmaceutical firms, fossil fuel companies, and mining companies from class actions, price-fixing cases, and of course antitrust lawsuits.

One should look to Pfaffenroth’s record from her past stint at ATR to get a sense of what a second go-around might look like. Under the Obama administration, Pfaffenroth blessed tie-ups between Virgin America and Alaska Airlines, as well as US Airways and American Airlines. Today, just four mega-airlines control 80 percent of U.S. air traffic.

Pfaffenroth even approved the $107 billion merger between Anheuser-Busch InBev and SABMiller, allowing 30 percent of the world’s beer market volume and 60 percent of the world’s beer market profits at the time to be controlled by one firm. Today, AB InBev has essentially hacked the multitiered regulatory system that kept the alcohol market competitive for decades. In some cases, AB InBev’s distributors only allow craft brewers to distribute their drinks to retailers if they keep overall production low. This bottlenecking, alongside the pandemic, has been devastating for craft brewers.

Pfaffenroth’s record at ATR reveals someone whose poor judgment has harmed major American industries. But her judgment is reflective of the failed antitrust status quo, and in antitrust and everything else, Garland sees maintaining the status quo as inherently salutary. Where you or I might see bad calls, Garland likely sees jurisprudence executed according to a well-worn book. Whether the book is right or wrong is immaterial, in his eyes.

To state the obvious, Biden ought to reject Pfaffenroth and empower Kanter with deputies ready to throw that book aside, or else his antitrust agenda on meatpacking and everything else will get tossed on the growing pile of broken promises that are cratering his approval ratings. Doing so, however, will require standing up to Garland.

Thus far, Biden has appeared reluctant to do so, for fear of threatening the attorney general’s independence. There’s a kernel of truth here, after the Justice Department was turned into the president’s personal law firm under Trump. But there is a big difference between deploying the DOJ’s resources to help friends and target enemies and ensuring the DOJ has the staff and leadership necessary to execute its policy agenda. One is a blatant abuse of power, the other a clear presidential prerogative.

It’s an awkward situation for a president, but Biden must recognize that achieving his goals—especially the ones that improve working people’s economic fortunes—does far more for the health of the nation than sticking to a failed principle for its own sake. The president badly needs to remember that the buck stops not at Main Justice, but the Oval Office. Biden can demonstrate his commitment to fulfilling his promises and vision by empowering those of his appointees who are showing the necessary courage.

#### Nothing gets done until Luján is back. Thumpers outweigh.

Palmer 2/1 [Anna Palmer, John Bresnahan, and Jake Sherman, Punchbowl News PM: Senate Democrats' New Reality, 2/1/22, https://email.punchbowl.news/t/ViewEmail/t/2B0B3EB5EB88D2EE2540EF23F30FEDED/28A0A10B8D38581C63B21DE8DA818551?alternativeLink=False]

The Senate is beginning to grapple with a new reality. With Sen. Ben Ray Luján (D-N.M.) in the hospital after a stroke, Democrats don’t have a functioning majority. They will be unable to move anything besides non-controversial bills and nominations. As we all know, there are very few of those these days.

Senators and several sources close to the situation tell us that Luján will be ok. Luján's office, in a statement from Chief of Staff Carlos Sanchez, said the senator is still hospitalized following surgery to relieve swelling in his brain. There is no timetable for Luján's return.

As we noted in our special edition this afternoon, the impact on the Senate has the potential to be enormous. The biggest issue, beyond Luján's recovery, is how long it will take for the 49-year-old New Mexico Democrat to return.

The longer Luján is out, the more problematic his absence becomes. A lengthy recovery could impact President Joe Biden’s ability to confirm a new Supreme Court nominee. If Luján is sidelined for a long period of time, Biden may have to rethink who he nominates to the Supreme Court. A candidate who could attract some Republican votes, such as J. Michelle Childs, may become even more appealing for a White House desperate for a win.

#### Specifically—Bedoya—can’t get through committee

Marci 2/2 [Giuseppe Macri, "TECH & CYBER BRIEFING: GOP Criticism Risks Chips Bill Passage", 2/2/22, https://www.bgov.com/core/news/#!/articles/R6OC4QDWLU6O]

Alvaro Bedoya, nominated to be a commissioner of the Federal Trade Commission, as well as Mary Boyle, to be a commissioner of the Consumer Product Safety Commission, also won’t get a vote today, according to a revised agenda released last night by the panel.

The names dropped from the agenda were seen as requiring votes of all the committee’s Democratic members to succeed. Senator Ben Ray Luján, a New Mexico Democrat and a member of the panel, is recovering from a stroke. Read more from Todd Shields.

#### PC doesn’t matter because all Dems are on board. Republicans are already working to delay the nomination.

Rich 11/19 [Jessica Rich, "Some fireworks at Bedoya’s Senate confirmation hearing, but confirmation still seems likely", 11/19/21, JD Supra, https://www.jdsupra.com/legalnews/some-fireworks-at-bedoya-s-senate-4979149/]

On November 17, the Senate Commerce Committee held its eagerly-awaited hearing on the nomination of Alvaro Bedoya, a data privacy academic from Georgetown Law, to be FTC Commissioner. Bedoya is slated to replace Rohit Chopra, who departed the agency last month to become Director of the CFPB, and Bedoya’s appointment would once again give the Democrats a voting majority. In the run-up to his hearing, some have wondered – Can we expect Bedoya to provide Chair Khan with a reliable third vote for her agenda, or will he bring a more bipartisan approach to the agency? From his answers and demeanor at the hearing, the answer is probably…both.

First, a little table-setting: Bedoya’s nomination was considered along with three others – Jessica Rosenworcel for FCC Chair and two nominees for the Department of Commerce. The hearing was well-attended by Committee members, who directed the majority of their questions to Rosenworcel. (Yes, net neutrality, broadband access, and the “homework gap” all got more attention than privacy.) All four current FTC Commissioners attended the hearing in person, in a bipartisan show of support for Bedoya, though Bedoya attended remotely due to a recent exposure to COVID.

Here are some takeaways from Bedoya’s portion of the hearing.

He appears likely to be confirmed, even if largely along party lines. Although Senator Wicker made a reference to Bedoya’s “strident” views and Senators Lee, Cruz, and Sullivan slammed his “extremist” tweets (see below), most of the questions (from 18 Senators!) related to Bedoya’s area of expertise (privacy), where there is more alignment between the parties than in other areas. He handled the questions well, and repeatedly expressed support for collaboration and bipartisanship (e.g., specifically mentioning that he wants to work closely with Commissioner Wilson on privacy). Democrats have the votes (in the Committee and on the Senate floor), even if they ultimately have to call in V.P. Harris to break a tie.

He spoke about his nomination and the issues in personal and emotional terms. Bedoya highlighted that he and his family were welcomed into this country 34 years ago. He talked about his experience as a Senate staffer, learning about the terror and harm caused by stalking apps from a shelter for battered women. He realized then and believes now that “privacy is not just about data, it’s about people.” His goal as a Commissioner would be to make sure the FTC protects people, and to help both consumers and businesses manage the multiple crises facing the country – a COVID crisis, a privacy crisis, and a small business crisis.

He appears likely to vote with the majority on many (or most) issues. No big surprise here, but when asked his views about various issues, he consistently supported positions that Khan, Slaughter, and (his predecessor) Chopra have supported – federal privacy legislation, Magnuson-Moss privacy rulemaking if Congress doesn’t act, pushing back against the “unprecedented consolidation” that is forcing small businesses to close, streamlining the FTC’s rulemaking and subpoena processes, reducing the power of the platforms, and reining in tracking technologies like facial recognition. As to the latter, he said he would not support banning facial recognition technologies altogether, since some applications assist with benefits like public safety and healthcare. However, he would support banning facial recognition technologies that are hidden, that lack consent, or that collect, use, and share data without limits.

He’s a real-live privacy expert. He clearly has the credentials, starting with his work as a Senate staffer and continuing through his years at Georgetown Law as a professor and head of a privacy think tank. But he also quickly and confidently answered all questions related to privacy – from the need for privacy legislation generally, to his views on Senator Schatz’s “duty of loyalty” and Senator Markey’s proposal to amend COPPA, to the lines he would draw on facial recognition (see above).

He wrote some controversial tweets, and a number of Republicans seem poised to vote “no” on his confirmation. Senator Sullivan cited a tweet from Bedoya calling the 2016 Republican convention a “White Supremacist rally.” Cruz cited tweets about ICE as a “domestic surveillance agency” and a retweet involving critical race theory and white supremacy. He also called Bedoya a “left wing activist, bomb thrower, extremist, and provocateur.” Lee ran through a series of supposedly “yes or no” questions in rapid succession, and accused Bedoya of being evasive when he tried to qualify his responses. And Wicker referred to Bedoya’s “strident” views, as noted above. As to the tweets, Bedoya apologized, saying that it was “rhetoric” and that he would put aside any partisan views if he became Commissioner. However, these Senators (and perhaps other Republicans) seem poised to vote “no” on Bedoya’s confirmation, and some have said they plan to place a “hold” on the process, which could slow it down.

#### Regen ag doesn’t solve

Nordhaus 21 [Ted Nordhaus is a leading global thinker on energy, environment, climate, human development, and politics. He is the founder and executive director of the Breakthrough Institute and a co-author of An Ecomodernist Manifesto. Twitter: @TedNordhaus Dan Blaustein-Rejto is the director of food and agriculture at the Breakthrough Institute, where he analyzes the economics and potential of sustainable agriculture policies and practices. He has conducted research with the Environmental Defense Fund, International Center for Tropical Agriculture, and Farmers Market Coalition. "Small Farms, Big Pollution", 6/2/21, https://foreignpolicy.com/2021/06/02/big-agriculture-pollution-small-farms-inefficient/]

A reader could be excused for concluding from Matthew R. Sanderson and Stan Cox’s criticism of our recent essay, “Big Agriculture Is Best,” that virtually all environmental impacts associated with the production of food in the United States and globally can be laid at the feet of “industrial agriculture.” But it is a definitional sleight of hand, not “empirical evidence,” as they claim, that does most of the work here. Sanderson and Cox define “industrial agriculture” so capaciously as to be basically synonymous with “agriculture.”

In the United States, that is arguably true. Most agricultural output—and hence environmental impacts—comes from large-scale, industrial production. Globally, it is not true. In both cases, there is no free lunch. Agriculture, unavoidably, has environmental impacts for the simple reason that growing food requires the conversion of forests, grasslands, and other ecosystems into fields whose biocapacity is then monopolized to produce food for people.

As human populations have grown enormously over the last two centuries, from about a billion people globally in 1800 to nearly 8 billion today, and as those populations have become wealthier and able to eat higher on the food chain, the impacts associated with food production have grown as well. But that has little to do with the prevalence of industrial versus nonindustrial agriculture. Instead, it reflects the basic realities associated with scaling agriculture globally to meet those enormous new demands.

Consider the negative impacts that nitrogen pollution from the American corn belt has had on the Gulf of Mexico. Most of that runoff comes from industrial farms for the simple reason that large-scale, intensive production is the dominant form of agriculture across the region. Shifting production to organic practices, though, wouldn’t much change the situation. Organic farms are typically associated with higher rates of runoff per calorie of food produced, even as they require more land. So unless total production were very substantially scaled back, a corn belt dominated by organic farms rather than conventional ones would require more land while having similar or even greater impacts on waterways and biodiversity.

# 2AR

### A1

#### Utilities gut DERs adoption – newest ev

EARPC 21 [Environment America Research & Policy Center, “Blocking Rooftop Solar, THE COMPANIES, LOBBYISTS AND FRONT GROUPS UNDERMINING LOCAL CLEAN ENERGY”. 6/17/21. https://environmentamericacenter.org/reports/ame/blocking-rooftop-solar]

Utilities increasingly fear that the falling prices and rising availability of clean solar power will threaten their business model, which ties profits to the amount of capital investment they make in the grid, and sometimes to the amount of electricity sold. Consequently, in states across the country, utilities are using their money and clout to push policymakers to undercut solar power and make it harder for homeowners and small business owners to produce their own clean energy. A particular utility target is the policy used (as of June 2020) in 40 states, Washington, D.C., and some U.S. territories to ensure solar panel owners receive fair compensation for the clean energy they supply to the electric grid, known as “net metering.”

Recent corruption scandals in Ohio and Illinois, in which utilities and other special interests allegedly used their clout to twist public policy in their favor, highlight how far anti-solar efforts have gone. Policymakers must resist pressure from utilities and the fossil fuel industry and implement pro-solar policies that will continue America’s momentum toward clean energy.

#### Legal clarity barrier now

Moroni et al. 16, Stefano Moroni is with the Polytechnic University of Milano; Valentina Antoniucci Department of Civil, Environmental and Architectural Engineering, University of Padova; Adriano Bisello is with EURAC Research, Institute for Renawable Energy, “Energy Sprawl, Land Taking and Distributed Generation: Towards a Multi-Layered Density,” Energy Policy, vol. 98, 11/01/2016, pp. 266–273

“Despite the benefits of distributed generation, renewable energy policies tend to promote development of large renewable energy generation systems located far from urban centers of power consumption” (Powers, 2013).

“By far the biggest barrier to the creation of micro-grids is contradictory, unclear, or hostile law” (Bronin, 2010).

#### Extinction.

Ng ’19 [Yew-Kwang; May 2019; Professor of Economics at Nanyang Technology University, Fellow of the Academy of Social Sciences in Australia and Member of the Advisory Board at the Global Priorities Institute at Oxford University, Ph.D. in Economics from Sydney University; Global Policy, “Keynote: Global Extinction and Animal Welfare: Two Priorities for Effective Altruism,” vol. 10, no. 2, p. 258-266]

Catastrophic climate change

Though by no means certain, CCC causing global extinction is possible due to interrelated factors of non‐linearity, cascading effects, positive feedbacks, multiplicative factors, critical thresholds and tipping points (e.g. Barnosky and Hadly, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0005); Belaia et al., [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0008); Buldyrev et al., [2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0016); Grainger, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0027); Hansen and Sato, [2012](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0029); IPCC [2014](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0031); Kareiva and Carranza, [2018](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0033); Osmond and Klausmeier, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0056); Rothman, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0066); Schuur et al., [2015](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0069); Sims and Finnoff, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0072); Van Aalst, [2006](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0079)).[7](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-note-1009_67)

A possibly imminent tipping point could be in the form of ‘an abrupt ice sheet collapse [that] could cause a rapid sea level rise’ (Baum et al., [2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0006), p. 399). There are many avenues for positive feedback in global warming, including:

* the replacement of an ice sea by a liquid ocean surface from melting reduces the reflection and increases the absorption of sunlight, leading to faster warming;
* the drying of forests from warming increases forest fires and the release of more carbon; and
* higher ocean temperatures may lead to the release of methane trapped under the ocean floor, producing runaway global warming.

Though there are also avenues for negative feedback, the scientific consensus is for an overall net positive feedback (Roe and Baker, [2007](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0065)). Thus, the Global Challenges Foundation ([2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0026), p. 25) concludes, ‘The world is currently completely unprepared to envisage, and even less deal with, the consequences of CCC’.

The threat of sea‐level rising from global warming is well known, but there are also other likely and more imminent threats to the survivability of mankind and other living things. For example, Sherwood and Huber ([2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0071)) emphasize the adaptability limit to climate change due to heat stress from high environmental wet‐bulb temperature. They show that ‘even modest global warming could … expose large fractions of the [world] population to unprecedented heat stress’ p. 9552 and that with substantial global warming, ‘the area of land rendered uninhabitable by heat stress would dwarf that affected by rising sea level’ p. 9555, making extinction much more likely and the relatively moderate damages estimated by most integrated assessment models unreliably low.

While imminent extinction is very unlikely and may not come for a long time even under business as usual, the main point is that we cannot rule it out. Annan and Hargreaves ([2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0004), pp. 434–435) may be right that there is ‘an upper 95 per cent probability limit for S [temperature increase] … to lie close to 4°C, and certainly well below 6°C’. However, probabilities of 5 per cent, 0.5 per cent, 0.05 per cent or even 0.005 per cent of excessive warming and the resulting extinction probabilities cannot be ruled out and are unacceptable. Even if there is only a 1 per cent probability that there is a time bomb in the airplane, you probably want to change your flight. Extinction of the whole world is more important to avoid by literally a trillion times.

### A2

#### Low electricity prices key – 85% of costs matters most

Mathis 21 [Will, Josh Saul, Alfred Cang, and Zheping Huang, Bloomberg Crypto Reporters. “Bitcoin Miners Navigate Extreme World of Crypto Power-Hunting”. 7/13/21. https://www.bloomberg.com/news/features/2021-07-13/bitcoin-miners-building-rigs-must-navigate-world-of-crypto-power-hunting]

One weekend in late June, hundreds of gloomy Bitcoin miners crowded into a luxury hotel in Western China. They had a big problem: Just weeks earlier, the Chinese government banned cryptocurrency mining over concerns about illicit coal mining and underlying financial risks. Now they had to figure out how to move millions of computers out of the country.

The miners sat in rows of white chairs in a hall at the Gran Melia Chengdu Hotel and listened intently to the executives at Bitmain Technologies Ltd., the world’s largest mining-equipment maker. In between presentations about Texas energy fundamentals and crypto mining in Kazakhstan, the attendees nibbled cupcakes, drank cocktails and discussed the dismal outlook for their local industry.

Bitmain’s employees were offering to serve as matchmakers, hooking miners up with data centers in the U.S., Central Asia and Europe. They also cautioned that an unchecked rush into new markets would jack up costs for all of them. One slide presented at the event read, “Hold Together for Warmth, Say No to Vicious Competition.”

Inside a Cryptocurrency Mine in South Korea

Bitmain machines at a mining facility in South Korea.

Photographer: SeongJoon Cho/Bloomberg

Just hours after the conference, the urgency of the situation came into full view. Alex, a Chinese miner who didn’t want his last name published for fear of government retribution, was out singing karaoke with some of his fellow miners when he called to check in on his machines in the mountains outside Chengdu. His colleague told him that local authorities had just shut off the power to his facility, leaving the mine silent and potentially worthless.

“All my money is gone,” he said, cursing as he chugged a beer. “Every day I’m losing money by not running those machines.”

The Chinese miners forced to leave behind the country’s cheap electricity from abundant coal and roaring rivers have found themselves thrust into a wild and extreme world of crypto power-hunting. Just as miners sprinted toward gold fields in California and Alaska over a century ago, Bitcoin miners now are bolting toward any source of inexpensive, reliable power they can find. Their next destinations matter greatly to an industry emphasizing decentralization and independence, and to other energy-consuming sectors, with which they are competing for access to greener power.

Cheaper Power

A Bitcoin mining rig doesn’t pull anything out of the ground, of course. Instead, it is usually made up of thousands of computers, specially built to run the complex calculations that maintain the cryptocurrency’s network. These computers are stacked on shelves in warehouses, often with huge water-cooling fans. In China, the warehouses are usually situated close to their power sources, such as standalone hydropower stations and thermal plants affiliated with coal mines. Electricity accounts for about 80% of a miner’s operating cost, according to Tyler Page, the chief executive officer of Cipher Mining Technologies Inc.

The miners who complete the calculations are rewarded with new Bitcoin, which has ranged in value from a peak of almost $65,000 before China outlawed mining to about $33,500 today. Around 65 percent of the world’s Bitcoin mining took place in China as of April last year, according to the latest data from the University of Cambridge.

Cheaper power is the reason China’s neighbor, Kazakhstan, has become a top destination for fleeing miners. The former Soviet nation has over 22 gigawatts of electric power capacity, mostly from coal and gas-fired stations. It also borders the region of Xinjiang, which once held nearly 36% of the world’s bitcoin mining. Bitcoin miners can get electricity for as low as about 3 cents per kilowatt-hour, according to Dmitriy Ivanov, sales director at Almaty-based Enegix LLC. The country is also cool enough that the data centers don’t require any air conditioning to keep them from overheating, which can add as much as 30% more power consumption.

Enegix runs a server-hosting business in Kazakhstan, where it is building data centers at which miners can pay a fee to plug in their machines. At the end of last year, the company built its biggest site yet, a 180-megawatt data center on 37 acres of land near the northeastern town of Ekibastuz. The region is an industrial hub fueled by one of the largest coal-fired power stations in the world outside of China.

In June, Ivanov started to get messages daily from miners in Sichuan and Inner Mongolia who needed to relocate after Beijing’s crackdown.

“We stand to benefit from it, but these people are facing devastating losses in terms of all the infrastructure that has to be deployed elsewhere,” he said.

relates to Bitcoin Miners Navigate Extreme World of Crypto Power-Hunting

Security guards outside the Enegix facility.

Source: Enegix LLC

Enegix’s clients will soon be shipping about 10,000 mining machines, a mix of Bitmain’s S19Pro and the Whatsminer M21S model from Chinese manufacturer MicroBT, to Kazakhstan by plane. Transport by land from China would be cheaper, but trucks can get held up at the border for weeks. Spending that time mining Bitcoin instead can make up for the extra cost of airfare.

Didar Bekbauov runs another Almaty-based Bitcoin mining hosting company, a smaller competitor to Enegix. He was similarly inundated with messages.

“So many Chinese are reaching out to us and asking for help to relocate the equipment,” Bekbauov said by phone. “They ask every Kazakh they know to help them with electricity.”

But there is a limit to Kazakhstan’s potential: Its electric grid has added only a little over 3 gigawatts of capacity in the last 20 years, according to data from BloombergNEF. That’s leaving little room for the surge in mining machines to get connected. Bekbauov now has to turn customers away.

“Every spare kilowatt is already booked,” he said.

Renewable Sources

For some miners, the decision to move out of China is also an opportunity to clean up their power supply.

It’s difficult to say how dirty Bitcoin mining is overall, but it’s a reflection of the power supply to a mine’s location. Earlier this year, tens of thousands of mining machines consumed about 45 million kilowatt-hours of power per month in an area of western China that depends on coal-burning power plants, the official Xinhua News Agency reported. That’s about 15,000 tons of standard coal. Overall, mining machines globally consume about as much power as all of Bangladesh, a country of more than 160 million people.

While some of that power is green, the majority of the world’s electricity still comes from burning fossil fuels. Earlier this year, Elon Musk said Tesla Inc. would no longer accept purchases in Bitcoin because of its carbon footprint. An alliance of companies launched the Crypto Climate Accord earlier this year to address criticisms and vowed to help the industry shift to 100% renewable power consumption.

Bitcoin Mining With Stranded Energy

Crypto miners are coming up against a much bigger drive to decarbonize power to combat climate change. The percentage of energy from renewable sources would need to increase to about two thirds of supply by 2050, up from around 12% in 2020, to keep temperatures from rising more than 1.5 degrees Celsius from pre-industrial levels, according to the International Energy Agency. Countries around the world, including China, the U.S. and the EU will have to ramp up construction of wind farms and solar parks to come close to hitting their targets.

Renewable energy sources like wind and sunshine may be abundant at times, but demand for them is set to surge as cars, home heating and heavy industries increasingly shift to electricity. The Nordic region, which has long been a popular Bitcoin mining spot because of its ample hydropower, began running out of excess electricity earlier this year as industrial users ramped up production.

“There’s a more noble use of renewable power than Bitcoin mining,” said Peter Wall, chief executive officer of London-listed mining company Argo Blockchain Plc. “But the fact is people are going to mine Bitcoin full stop. It’s not going away.”

Regulatory Concerns

Miners also want confidence they won’t wake up one morning to news that their business has been outlawed again. Bit Digital Inc., a Nasdaq-listed mining company, began moving some of the 30,000 machines it operated in China to North America back in October. By the time Beijing cracked down, Bit Digital was able to keep mining with as little disruption as possible.

Even within the U.S., there are regulatory differences among states. Cipher Mining Technologies Inc., the U.S. arm of Netherlands-based Bitfury Holding BV, is working to build up mining capacity in Texas, the only state with a deregulated power grid, and Ohio because of the state’s cheap power prices and low-carbon power sources. A state like New York, where lawmakers previously proposed a bill that would have limited crypto mining in the state, isn’t as attractive.

The physical attributes of a site matter too: extreme temperatures in either direction are a negative, as is an overly dry and gritty environment. “Literally the dust blows into the computers and you have physical problems,” said Cipher’s Page.

Some of Bit Digital’s mining rigs were shipped to a data center in Kearney, Nebraska, where the company already has about 5,000 machines noisily mining Bitcoin. “You can’t hear a damn thing in here!” Chief Executive Officer Bryan Bullett yelled on a recent tour of the facility as the machines’ fans whipped his hair around.

relates to Bitcoin Miners Navigate Extreme World of Crypto Power-Hunting

The facility in Kearney, Nebraska, where Bit Digital already has about 5,000 machines.

Source: Compute North

A warehouse a mile from the data center holds Bit Digital’s displaced Chinese rigs. The machines were piled to the ceiling on wooden pallets, waiting for an opening so they could be put to work. “It’s not great to see them sitting here in boxes, because they could be plugged in and making money,” said Bullett. He estimated that 500,000 mining machines are being shipped out of China as a result of the crackdown.

Bit Digital is considering setting up operations outside North America, but local regulations and stability are a concern. The president of El Salvador announced last month that his country would be the first to adopt Bitcoin as legal tender and directed the state-run geothermal electric company to come up with a plan for volcano-powered Bitcoin mining. Bullett and other Bit Digital executives flew to the Central American country late last month for two days of meetings with the president’s cabinet.

El Salvador Accepts Bitcoin As Legal Tender

El Salvador has become the first country to formally adopt Bitcoin as legal tender.

Photographer: Cristina Baussan/Bloomberg

Bitcoin miners from other countries want to know that El Salvador’s enthusiasm for the digital currency will survive a change in leadership.

“The question is naturally going to arise about stability,” Bullett said, especially with a capital-intensive industry like mining. Asked whether he would send Bit Digital’s machines to a site El Salvador is developing, the chief executive paused. “It depends on the details,” he said. “It's certainly worth monitoring.”

Power Brokers

Beyond the large U.S.-based mining companies, there are also smaller middlemen making a business out of the big move.

Ever since news of the beginning of the crackdown in China first broke in late May, Tim Kelly, chief executive officer of BitOoda has barely slept. Kelly started BitOoda in 2017 to provide research, investment banking and other services to Bitcoin-mining clients. From his beach-front home on the island of Nantucket off the coast of Massachusetts, Kelly spent most nights this summer on the phone with Chinese miners. When the sun rose, he would start calling people in the U.S. who could provide sites with enough electricity to host mining operations.

“There’s so much absolute desperation to secure sites as quickly as possible,” Kelly said.

While China’s restrictions strangled the Bitcoin mining industry for now, the pain will only be temporary. With increasing capacity in places like the U.S., BitOoda estimates that the amount of computing power used for mining will be back to its pre-crackdown level by early 2023 and continue growing for the rest of the decade.

Crash

World's bitcoin computing capacity tumbled as China started clamping down mining

Global Hash Rate

Source: Blockchain.com

Unit: TereHashes per Second

Business for BitOoda had been progressing steadily. By May of this year, the company built up a pipeline of under 500 megawatts of grid connections for Bitcoin miners looking to plug into American power. Kelly’s sleepless nights helped that figure boom to about 2,000 megawatts of deals in the works, with about 70% going to Chinese clients.

It’s not easy to just set up a Bitcoin mining operation out of nowhere. Kelly’s clients need not only power supply, but also substations and transformers, devices that filter the high powered volts in the power grid to be gentle enough that they won’t fry all those valuable computers. Setting all the machinery takes time, in some cases as long as 18 months to get up and running.

Most of them have already made down payments on new machines and are looking for a new address in a hospitable location. This time, they want to make sure the sites will last. For many, that means trying to connect to renewable power sources, which the Biden administration has signaled are the future of the American electric grid. Chinese clients are even willing to pay higher prices for green credentials.

#### Clary relies on REE – it’s systemically biased against wars.

Allison ’12 [Paul; 2012; Ph.D., Professor of Sociology at the University of Pennsylvania; Statistical Horizons, “Logistic Regression for Rare Events,” <http://statisticalhorizons.com/logistic-regression-for-rare-events>]

Prompted by a 2001 article by King and Zeng, many researchers worry about whether they can legitimately use conventional logistic regression for data in which events are rare. Although King and Zeng accurately described the problem and proposed an appropriate solution, there are still a lot of misconceptions about this issue.

The problem is not specifically the rarity of events, but rather the possibility of a small number of cases on the rarer of the two outcomes. If you have a sample size of 1000 but only 20 events, you have a problem. If you have a sample size of 10,000 with 200 events, you may be OK. If your sample has 100,000 cases with 2000 events, you’re golden.

There’s nothing wrong with the logistic model in such cases. The problem is that maximum likelihood estimation of the logistic model is well-known to suffer from small-sample bias. And the degree of bias is strongly dependent on the number of cases in the less frequent of the two categories. So even with a sample size of 100,000, if there are only 20 events in the sample, you may have substantial bias.

#### Omicron doesn’t hurt growth and it makes Covid an endemic – new variants aren’t a concern

Flanders 1/12 [Stephanie, Senior Executive Editor for Economics at Bloomberg and head of Bloomberg Economics. “Central Banks, Not Covid, Will Drive Global Economies in 2022.” 1/12/22. https://www.bloomberg.com/news/features/2022-01-12/central-banks-not-covid-will-drive-global-economies-in-2022]

Bloomberg Economics expects that omicron will have a visible but short-lived effect on growth. Each successive peak in infections has tended to have diminishing economic costs, in part because everyone has gotten better at handling the economic fallout. Omicron appears to be more contagious but less deadly than earlier variants. Spikes in infections could still weigh on economic activity in the short term by pushing absenteeism sharply higher—as is already happening in the U.S. and U.K. Yet in the longer term, omicron’s arrival could speed the transition from pandemic to endemic, reducing the need for economically disruptive lockdowns.

## DA

### 1AR – Nordhaus

#### Small and organic farms are worse for the environment—habitat loss and nitrogen pollution.

Nordhaus 21 [Ted Nordhaus is a leading global thinker on energy, environment, climate, human development, and politics. He is the founder and executive director of the Breakthrough Institute and a co-author of An Ecomodernist Manifesto. Dan Blaustein-Rejto is the director of food and agriculture at the Breakthrough Institute, where he analyzes the economics and potential of sustainable agriculture policies and practices. He has conducted research with the Environmental Defense Fund, International Center for Tropical Agriculture, and Farmers Market Coalition. "Big Agriculture Is Best", 4/18/21, https://foreignpolicy.com/2021/04/18/big-agriculture-is-best/]

Many sustainable agriculture advocates tout the recent growth of organic agriculture as proof that an alternative food system is possible. But growing market share vastly overstates how much food is actually produced organically. In reality, organic production accounts for little more than 1 percent of total U.S. agricultural land use. Meanwhile, only a bit more than 5 percent of food sales come from organic producers, mostly because organic sales are overwhelmingly concentrated in high-value sectors of the market, namely produce and dairy, and fetch a premium from well-heeled consumers.

Moreover, organic farms, large and small, don’t actually outperform large conventional farms by many important environmental measures. Scale, technology, and productivity make good environmental sense and economic sense. Because organic farming requires more land for every calorie or pound produced, a large-scale shift to organic farming would entail converting more forest and other land to farming, resulting in greater habitat loss and more greenhouse gas emissions. And while organic farming doesn’t use synthetic pesticides or fertilizers, it often results in greater nitrogen pollution because manure is a highly inefficient way to deliver nutrients to crops.

Another benefit of large-scale U.S. farms is that because they are so efficient, economically and environmentally, they are also able to produce vastly more food than Americans can consume, making the country the world’s largest agricultural exporter as well.

That benefits the U.S. economy, of course, but it also comes with an environmental benefit for the world. In the contemporary environmental imagination, highly productive, globally traded agriculture is a bad thing—poisoning the land at home and undermining food sovereignty abroad. But in reality, a pound of grain or beef exported from the United States almost always displaces a pound that would have been produced with more land and greenhouse gas emissions somewhere else.

### 1AR – Thumper – New Bills

#### Changes to law are inevitable.

Scarborough ’11-2 [National Law Review; 2021; Partner in the firm's San Francisco office at National Law Review and the U.S. Chair of the firm’s Antitrust and Competition Group; National Law Review, “Senate Zeros in on Big Tech with Latest Antitrust Reform Bill,” <https://www.natlawreview.com/article/senate-zeros-big-tech-latest-antitrust-reform-bill>]

On the Senate side, Senator Klobuchar has also introduced the Competition and Antitrust Law Enforcement Reform Act of 2021, which increases antitrust enforcement budgets, strengthens prohibitions against anticompetitive mergers, and updates the Clayton Act to prohibit “exclusionary conduct that presents an appreciable risk of harming competition.”  Further, Senator Mike Lee (R-UT), has introduced the [Tougher Enforcement Against Monopolists Act](https://www.lee.senate.gov/services/files/23028e91-a982-43d0-9324-f6849c7522fc) (creating market-share presumptions for merger review and codifying the consumer welfare standard), [State Antitrust Enforcement Venue Act](https://www.lee.senate.gov/services/files/3e0224a6-7b0f-49cf-9288-175d35095415) (allowing state attorneys general to keep antitrust defendants in their desired fora), and the [One Agency Act](https://www.lee.senate.gov/services/files/c025c934-96a6-4bb9-8c3a-794a712e7955) (consolidating merger review in the Department of Justice).  Senator Josh Hawley (R-MO) has also introduced the [Trust-Busting for the Twenty-First Century Act](https://www.hawley.senate.gov/sites/default/files/2021-04/The%20Trust-Busting%20for%20the%20Twenty-First%20Century%20Act.pdf), which would explicitly ban companies with market capitalizations exceeding $100 billion from any mergers or acquisitions.

While it is highly unlikely that all these competing bills will become law, some amount of legislated antitrust reform targeting Big Tech seems almost inevitable.

### 1AR – Thumper – SRP

#### SRP decision is massive and not priced in – disproves link

Stancil 1/31 [Kenny, staff writer for Common Dreams. “Ruling on Rooftop Solar Called a 'Game-Changer' for Clean Energy”. 1/31/22. https://www.commondreams.org/news/2022/01/31/ruling-rooftop-solar-called-game-changer-clean-energy]

Clean energy advocates celebrated Monday after a federal appeals court reversed a lower court's decision and ruled that Arizona power utility Salt River Project—which jacked up electricity rates by more than 60% for customers who installed rooftop solar in the Phoenix metropolitan area—can be prosecuted for violating federal antitrust laws.

"This is a game-changer in the struggle to defend rooftop solar against utilities' all-out war on clean, affordable, climate-resilient energy."

"We're thrilled that the Salt River Project will be held accountable for obstructing rooftop solar," Jean Su, director of the Center for Biological Diversity's energy justice program, said in a statement. "This is a game-changer in the struggle to defend rooftop solar against utilities' all-out war on clean, affordable, climate-resilient energy."

"For the first time," Su added, "a federal court has said utilities can be liable under antitrust laws if they attack rooftop solar. The future for renewable energy just got a lot brighter."

In an opinion piece published last year by The Arizona Republic, Su and Center for Biological Diversity co-founder Robin Silver noted that "SRP customers with household solar systems generate clean, renewable power, reduce greenhouse gas emissions, and reduce reliance on SRP's fossil fuel-based grid. These solar customers provide SRP some of its only competition."

After SRP slapped solar customers with a 65% electricity rate hike in 2015, "rooftop solar applications dropped precipitously, with one installer, SolarCity, losing 96% of its applications," wrote Su and Silver.

In 2019, William Ellis and other residents sued SRP, arguing that the utility's pricing plan penalized solar customers and companies in an attempt to maintain monopoly control. Although a lower court dismissed the suit, Ellis and his co-plaintiffs appealed. They were joined in amicus briefs by the U.S. Department of Justice and the Center for Biological Diversity.

In its Monday ruling in Ellis v. Salt River Project, the Ninth Circuit Court of Appeals concurred with the plaintiffs that SRP's pricing scheme "unlawfully discriminated against customers with solar energy systems and was designed to stifle competition in the electricity market." The antitrust claims will now be remanded to the district court for a trial.

According to Su and Silver, "This case has far-reaching consequences for Arizona and the country." With a favorable ruling for SRP's solar customers, the pair predicted in their 2021 op-ed, "the power-hoarding days for SRP and other corporate utilities will be numbered."

While "antitrust laws have been used repeatedly to break up big monopolies," including "railroad oligarchies in the 1920s and telecom giants in the 1980s," Su and Silver pointed out that "electric utilities have been largely spared from antitrust challenges. Until now."

They continued:

Power companies face a dynamic environment of emerging cheaper clean technology, competition from customers who can generate power themselves, and the urgent need to slow climate change by transforming dirty energy portfolios into clean ones.

This is a challenging time to be in the power business, but delivering a public service should be consistent with serving the public interest. That's especially true now, when clean energy must be ramped up to avoid the most devastating effects of climate change.

In its 2019 brief, the Center for Biological Diversity argued that SRP's anti-competitive effort to stamp out rooftop solar undermines "the energy transition demanded by climate science."

"This case has far-reaching consequences for Arizona and the country."

Although green energy spending and production are increasing, so is overall fossil fuel consumption. Corporations are currently planning to expand dirty energy extraction in wealthy and impoverished nations alike despite climate scientists' repeated warnings that new coal, oil, and gas projects must cease in order to have a chance of limiting global temperature rise to 1.5ºC above preindustrial levels by the end of the century.

Global investment in clean energy surged by 27% in 2021, according to a report released last week by BloombergNEF. The $755 billion spent in 2021 surpassed the $595 billion spent in 2020 and put to shame the $264 billion spent in 2011.

Nevertheless, according to the Paris-based International Energy Agency (IEA), "to reach net-zero emissions by 2050, annual clean energy investment worldwide will need to" total roughly $4 trillion, which would "create millions of new jobs."

Rooftop solar, argued Su and Silver, is "vital" to slashing greenhouse gas pollution and protecting the habitability of planet Earth.

### 1AR – PC Loss Inev

#### The FTC is stretched thin and has losses coming – that makes them unpopular and loses funding

McLaughlin 1/19 [David McLaughlin, Bloomberg. “FTC’s Khan Vows to Act With ‘Fierce Urgency’ on Antitrust Front.” 1/19/22. https://www.bloomberg.com/news/articles/2022-01-19/ftc-s-khan-vows-to-act-with-fierce-urgency-on-antitrust-front]

Khan said the FTC is “severely under-resourced” and the record deal-making by companies is straining the agency’s ability to review and potentially challenge transactions. That is posing “very difficult choices” about which deals to investigate, she said.

Still, the FTC can’t hold back from bringing risky cases that the agency might lose. Under Khan’s tenure, the FTC sued to block chipmaker Nvidia Corp.’s proposed $40 billion takeover of Arm Ltd. and salvaged a lawsuit that seeks to break up Meta Platforms Inc.

### 1AR—AT: Bees

#### Bees are doing fine—viruses, not pesticides, are the largest threat

Hageman 20 [Markie Hageman, "Are honey bees endangered? Here’s the truth of the matter", 6/24/20, https://www.agdaily.com/crops/are-honey-bees-endangered/]

Although, the honey bee isn’t on the endangered list, many are still under the impression that they soon will go extinct. Since this species is known for its role in agriculture, the blame is often placed on the ag industry for Colony Collapse Disorder, specifically related pesticide use. This blame is misguided, however, according to many reports.

An extensive analysis done by The Washington Post and published in 2017 show bee numbers sitting at close to historical highs. The research showed that since 2006, when CCD was identified, the number of honeybee colonies has risen, from 2.4 million that year to 2.7 million in 2014.

While some loss in individual bee numbers over winter months is expected, The Washington Post’s report came on the heels of another major announcement related to Colony Collapse Disorder: The rate of loss among honey bee colonies reached its lowest point in years.

Data from the U.S. Department of Agriculture’s National Agricultural Statistics Service point to general strengths in honey bee colonies: “In 2017, the United States had 2.88 million honey bee colonies, down 12 percent from the record high 3.28 million colonies in 2012, but down less than 1 percent from 2007,” the agency said.

Adding context to the data compiled independently from The Washington Post and the USDA, the American Council on Science and Health has stated: “CCD, which lasted for about 3-5 years, is a sudden phenomenon in which the majority of worker bees mysteriously disappear. That problem, which showed up most dramatically in California, abated by 2011.”

Part of the reason public awareness of Colony Collapse Disorder was amplified was the start and alarming number of hives that were not surviving the winter in the mid- to late-2000s — a number that hovered around 60 percent.

According to the U.S. Environmental Protection Agency, “The number of hives that do not survive over the winter months — the overall indicator for bee health — has maintained an average of about 28.7 percent since 2006-2007 but dropped to 23.1 percent for the 2014-2015 winter. While winter losses remain somewhat high, the number of those losses attributed to CCD has dropped from roughly 60 percent of total hives lost in 2008 to 31.1 percent in 2013.”

Since that time, CCD is not even mentioned as a factor by the EPA in winter hive losses. There do not appear to be enduring declines in colony numbers.

Chronic bee paralysis

A growing threat to bees in some regions is chronic bee paralysis, a disease caused by a virus known as chronic bee paralysis virus (CBPV), where infected bees die within a week. This leads to piles of dead bees just outside honey bee hives and whole colonies are frequently lost to the disease.

Chronic bee paralysis symptoms include abnormal trembling, an inability to fly, and the development of shiny, hairless abdomens.

Researchers in the United Kingdom found that the number of honey bee colonies affected with chronic bee paralysis rose exponentially between 2007 and 2017. Data collected from visits to over 24,000 beekeepers confirmed that while chronic bee paralysis was recorded only in Lincolnshire in 2007, a decade later it was present in 39 of 47 English and six of eight Welsh counties. The scientists also found that clusters of chronic bee paralysis, where disease cases are found close together, were becoming more frequent.