# Wiki doc 2

## 1AC Rutgers RR

### 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.”

#### Utilities are the largest driver. Their emissions cause extinction. Only antitrust solves through competition.

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.

#### Antitrust ends anti-competitive rate structures that exclude distributed energy resources (DERs) from electricity markets. That drives emissions and eliminates innovative competition.

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.

#### Utilities use both rates and non-price related practices.

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 replace carbon-intensive peaker plants.

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!

Share

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.

Share Volts

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.)

Share

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

26 Retweets65 Likes

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.

#### And, competitive markets overcome utility’s regulatory influence. That cements clean energy innovation.

Roberts 15 [David, Energy Writer @ Vox and Volts. “Reimagining electric utilities for the 21st century.” https://www.vox.com/2015/9/11/9306247/utilities-21st-century]

Another way of putting that is that utilities have every incentive to begrudge competitors, cling to sunk costs, and use access to regulators to keep the game rigged in their favor. As long as a company with a captive set of customers and state-guaranteed returns is participating in energy-service markets, it will distort those markets.

In fact, this is the great danger of the transition that lies ahead for utilities: that they will fight it every step of the way, clinging to the regulated assets that provide them their most predictable returns. You can see this happening in crude form in utilities like FirstEnergy seeking customer bailouts for their big baseload coal and nuclear plants. You can see it happening with the battles over rooftop solar all over the country. But as utilities are pushed toward the service model, unbundling even the products and services they provided on the retail side, that type of fight will become more common.

If they use their pull with regulators to protect themselves, it will only slow down (and raise the cost of) the clean energy transition. Technology has evolved to the point where there are uncounted innovations waiting to happen all along the outer edges of the grid, just as the internet unleashed a wave of distributed innovation.

Part of the reason utilities are still using technologies older than, uh, me is that the technologies are huge and the regulatory model is built for caution. It takes a long time to innovate on technologies that only come in multibillion-dollar increments, and when your returns are guaranteed by law and reliability is your only obligation, you're likely to stick with the tried and true.

By contrast, grid-edge innovations are based on new ICT services, new financing models, and small-scale technologies that are plunging in price. That makes for low barriers to entry, if regulators don't keep those barriers artificially high. One way or another, those distributed innovations are going to swarm over the utility dinosaurs like mammals. Utilities have a choice: evolve or, like US coal companies, go under in maximally undignified and ungracious fashion.

Three things that could help with the transition to the utility of the future

#### Existential threats to the grid are escalating---DERs are key.

Ryan Thomas Trahan 17, Trahan is an Affiliated Fellow of the Kay Bailey Hutchinson Center for Energy, Law & Business at the University of Texas at Austin, principal of Trahan Law APC, a private law firm based in Los Angeles, “Regulating Toward (In)security in the U.S. Electricity System,” 12 Tex. J. Oil Gas & Energy L. 221, WestLaw

INTRODUCTION

By design, the U.S. national electricity infrastructure stands without protection.1 Nearly everywhere in the country, hop a fence (or not), walk a bit, and access is wide open. The leading threats to the grids2 are not solely physical, as the twin specters of the grids infrastructure being hacked remotely or fried by an electromagnetic pulse event are recognized as being among the highest-level national security risks, well-documented by military and security analysts.3 Nonetheless, each such \*223 threat is fundamentally intertwined with the vulnerability of the physical architecture of the grids, an uneasy amalgam of a hundred year effort to manage disparate local and regional systems.4 Efforts to “harden” select physical components of the grids in response to terrorism and other modern security threats are largely ineffectual. Such efforts are engulfed by an immense transmission5 and distribution6 infrastructure that is akin to a series of endless army supply convoys--long, thin, interdependent, and exceedingly difficult to protect.7

Despite obvious vulnerabilities, the electricity industry mainly fails8 to evaluate9 systemic security vulnerabilities in calculating the costs and benefits of alternate electrical grids design. As recently as, say 2010, such an omission may be forgivable,10 as there were no economic alternatives \*224 available to the standard centralized electricity delivery structure (i.e., power plant Ö substation Ö transmission lines Ö substation Ö distribution lines Ö end consumer).11 Seven surprising years later, distributed generation12 has achieved broad cost parity with centralized electricity delivery; meanwhile, the costs of decentralized energy systems are falling rapidly and the costs of centralized electricity delivery are continuing to rise.13 The need for reevaluation is bolstered by recent domestic attacks on the U.S. grids by both sophisticated and unsophisticated actors14 and successful cyber-attacks by state-sponsored actors against electricity grids elsewhere in the world.15

This paper proceeds from an acknowledgment that an industry-wide commitment (often including distributed generation companies) to a fundamentally centralized electricity delivery system is, itself, a primary source of security risk. From a historical perspective, that commitment is understandable, as a solely centralized delivery model has been the only available economic approach to safely and reliably deliver a fundamental social good. Today, that commitment is outmoded and jeopardizes the fundamental security of the U.S. in that it distracts attention and diverts resources from the essential work of reconfiguring the architecture of the grids to be more inherently secure.

Part I of this paper provides historical background and describes conceptual aspects of the electricity grids architecture in order to provide grounding for the subsequent analysis. Part II sketches out the reasons why economic alternatives to a solely centralized grids architecture are now available. Part III describes the paradox wherein misplaced regulatory efforts reinforce the solely centralized model of electricity delivery, and thereby also increase root insecurity. The concluding \*225 subparts provide guideposts and describe opportunities for reorienting regulatory focus toward the security of U.S. electricity delivery.

I. THE U.S. ELECTRICITY SYSTEM: SELECT HISTORY AND ESSENTIAL FEATURES

Like food and most other forms of centralized industrial production, the U.S. electricity grids evolved as a set of systems responding to the engineering, human health circumstances, and economic incentives of distinct time periods. The resulting modern grids system is a hodgepodge,16 best viewed in the context of its history and essential features.

A. Select History of the U.S. Centralized Electricity System

In 1880, the population of the U.S. was only about fifty million,17 and very few folks--mostly established shop owners and very wealthy individuals-- had access to electricity from direct current coal-powered generators, located on-site and producing small amounts of energy.18 Direct current centralized systems were ascendant in the nascent market for electricity after Thomas Edison introduced the coal-fired Pearl Street Station in 1882, providing electricity via buried copper lines to more than 500 nearby customers, including J.P. Morgan (the man) and the New York Times (the paper).19 On November 15, 1896, a switch was flipped on George Westinghouse and Nikola Tesla's alternating current20 \*226 generation plant at Niagara Falls, and true centralized hydroelectrical power was delivered twenty-six miles away in Buffalo, New York.21

Industry professionals thereafter set about a march to produce electricity at massive, centralized steam turbine22 power plants positioned far from population centers,23 and electrification expanded in near lockstep with availability.24 Prior to the building of such massive plants, there was little functional difference between distribution and transmission of electricity.25 Thereafter, the simple geography of centralized generation systems provided industry professionals access to two additional lines of business, shipping (transmission) and delivery (distribution).26

Regulation of electricity delivery systems was initially weak, as municipalities were generally not imbued with a legal authority to regulate electric operators.27 Electric operators did, however, need \*227 municipal approval to dig up city streets to lay copper wire or build poles to string wire across city streets, and cities used that practical bargaining power to negotiate private contracts with electric operators.28 Those contracts were used to regulate operators and accomplish various ends, including broad and systemic corruption in favor of municipal officials.29

Beginning in 1900, states began to grant municipalities the legal authority to regulate utilities, and utilities undertook lobbying efforts to procure local monopolies as cutthroat competition and the requirements of large upfront capital expenditures made electric delivery a business of uncertain profits.30 In 1907, states began to assume the regulatory mantle from municipalities through newly established statewide professional utility regulatory commissions.31 By 1920, less than twenty-five years after Niagara Falls power was shipped to Buffalo, many states had established such commissions.32 1920 also marked the year that the federal government put a toe in the regulatory waters by providing oversight of federal hydroelectric projects through the newly created Federal Power Commission (“FPC”).33 The federal government further waded into the regulatory pool in 1935 by expanding the FPC's scope of power to include regulation of the interstate shipment of electricity.34

Apart from certain system refinements, present-day generation, transmission, distribution, and regulation trace a straight-line of development from the beginnings to today's electricity grids. The dominance of centralized generation is shown in 450,000 miles of high voltage35 transmission lines and a distribution infrastructure that is ubiquitous in and around population centers. The original local electricity line systems have been amalgamated into three interconnections (essentially discrete grids), and ten regional markets, all reliant on centralized generation of 4.08 trillion kilowatt hours (thus, the \*228 percentage changes from 2010 to 2016, shown on the charts below, represent enormous shifts in source energy generation),36 connected here and there, or not at all.37

TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

States have kept the regulatory pace--even the state of Wyoming taxes land owners for the wind blowing through their ranches38--and \*229 serve as the regulators of retail electricity, performing a tri-part function of protecting consumer access, industry profits, and governmental tax revenues.39 The FPC's successor, the Federal Energy Regulatory Commission (“FERC”) today too has a far greater regulatory ambit.40 And, in a historical bookend, the utility industry in 2005 gained federal powers for its own explicitly captive regulator, the National Electric Reliability Corporation (“NERC”), a private 501(c)(6) corporation formed by utilities, which received the explicit power to set mandatory standards and fine non-complying entities into compliance.41

B. Essential Features of U.S. Electricity

The consistent trend line of regulation and development of electricity, from the 1880s to present, is grounded in very few core concepts. These concepts help to define what electricity in the U.S. is, and what it is not.

\*230 i. Electricity is an Essential Good

Electricity is found everywhere in the U.S. expressly because it is accepted, in regulation and practice, as an essential good.42 It is not difficult to see why: electricity industry professionals in the 20th century, relying on wide public support, built what is arguably the most robust and democratic technological achievement in human history. Near universal social support (through subsidies, price regulation, and otherwise) for electricity is explicit today and throughout the history and development of the grids, from the regulatory justification for gifting monopolies to private and public utility companies, to the enactment of the Rural Electrification Act of 1936, which brought electricity to rural areas where it was uneconomical to do so,43 to FERC's modern mission statement to “assist consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means.”44 Our nation's defense,45 water, sewer, communication, shelter, health, manufacturing, and transportation infrastructures are all built on a premise of immediately available access to economical electricity, for everyone.46

\*231 ii. Electricity Grids do not Generate Meaningful Positive Networked Effects

While (nearly) universal access to electricity is necessary for modern civilization to function, our electricity grids remain balkanized.47 The core modern cause for this balkanization is that the centralized grids architecture does not generate meaningful positive networked effects at scale,48 the grids would otherwise be expected to be seamlessly interconnected.49 Networked effects are, generally, the impact a single user of a good or service has on the value of that product to other people, such that the value (not the cost) of the network is related to the number of users.50

Additional users of electricity via a network do not make electricity itself more valuable. Instead, incremental users impact the relative cost of obtaining electricity through a network (either increasing or decreasing per capita costs depending on, for example, system design, available technology, location, external circumstances, and capacity). Compare electricity against the standard formalization of networked effects in communications networks where a single telephone has no value alone but great value if it can be used to connect to many other users via a network, as illustrated below:51

TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

Such positive networked effects are inapplicable for the electricity grids. A modern family or business that obtains electricity from \*232 generation sources hundreds of miles away does not enjoy a fundamentally different good than that of their predecessors from the 1880s with a reliable coal-fired generator in a downstairs basement sufficient to meet their electricity needs.52 The electricity generated, delivered, and consumed in each case is identical as electricity is ultimately only useful to deliver energy for work.53 This is not to say that electricity delivery systems do not have externalities, just that such externalities do not constitute meaningful positive networked effects.54

Consider the seemingly difficult question of centralized wind energy, which is oftentimes located in geographies far removed from population centers because that is where it is windy.55 Since centralized wind energy must be shipped to population centers to be widely consumed, it might be incorrectly concluded that the intervening network of transmission lines generates meaningful positive networked effects, e.g., some groups may assign value to consumer access to renewable wind energy and argue that such a value is not accurately reflected in its price (therefore constituting an externality). A similar argumentative approach can be applied to any fuel source. Take coal for example: coal plants are not welcome near population centers due to the resulting adverse human health impacts and, thus, coal-fired power must be shipped via a network of transmission lines to population centers to be widely consumed. Some groups may assign value to the use of coal in that it tends to create jobs in areas that are currently economically depressed, or some other social value not accurately reflected in its price (therefore constituting an externality).

The error in each case is conflating desirable externalities associated with an energy generation type with externalities that constitute networked effects. A social determination might be made that the \*233 externalities resulting from wind energy are preferable to the externalities resulting from coal energy, or vice versa. In either case, it does not follow that dependency on a vast transmission infrastructure for delivering energy is a feature rather than a bug.

The bug of centralized electricity delivery (whatever the source fuel) is that it is costly and generates meaningful negative security networked effects. Negative security networked effects occur when additional users of the same electricity infrastructure have the effect of making the system less secure (less valuable) for other users. The risks of broad scale cyber-hacks and physical attacks are greatly increased in centralized electricity networks.56

A similar problem exists for the communications industry, which recognizes negative networked effects as a leading problem and top spending priority for its technology professionals.57 Security spending costs are forecasted to grow rapidly for electricity providers as well.58 Unlike communication networks, however, the level of spending by the electricity industry is ultimately elective: there are no meaningful positive networked effects produced by the electricity grids that require investment in a centralized infrastructure. The upshot is that electricity is useful for its ability to transfer energy for work. Whether it is relatively more valuable to deliver electricity via a network, while incurring the negative security networked effects of connected networks59 is an economic (see discussion Part II) and social question (explored in Part III) that, to date, has been ignored.

iii. The Grids are (and have always been) Reliant on Broad Social Investment

Utility companies were provided the de facto power to tax consumers of electricity in their government-granted monopoly area because the industry could not achieve universal access and acceptable reliability \*234 through solely private action, for one reason or another.60 Vast social investment has been necessary to provide near-universal access as the grids do not generate meaningful positive networked effects.61 Such monopoly grants and social investment followed a public determination that electricity is an essential good62 and that centralized grids were the only feasible technical and economic approach to supplying that good, again with private industry lobbying hard to arrive at that conclusion in a manner that would deliver steady profits.

A reasonable requirement then for social investment in any alternative electricity generation and delivery system would consist of the satisfaction of one of the following:

• independently (and economically) meet requirements of universal access and security in a manner that is equal to or better than the existing system; or,

• demonstrate an ability to improve the fulfillment of such requirements when coupled with the existing centralized electricity architecture.63

II. WHY ARE ECONOMIC ALTERNATIVES AVAILABLE NOW?

Even accounting for externalities, centralized generation and therefore the centralized grids, has been the only economic approach to electricity delivery throughout the history of the U.S.64 The primary reason--rather than human health effects, environmental impacts, or fuel availability--is that steam turbines are more efficient operating at a larger scale, and \*235 coal, nuclear, and combined cycle gas plants rely on steam turbines.65 As recently as 2010, technologies not dependent on steam turbines were not anticipated to become cost-competitive for many years.66 Much has changed in the interim, foremost that cost parity for distributed generation has been achieved in many markets over the last 18-24 months.67 The debate over decentralized energy has therefore shifted from a question of whether decentralized energy systems should be \*236 implemented to a debate over which consumers should be permitted to deploy decentralized energy systems and what impact that transition might have on the existing grids system.68 These battles represent a paradigm shift and raise the question of what changed in the blip of seven years.

A. Centralized Electricity Delivery Will Continue to Become Significantly More Expensive

From 1882 to the early 1980s, the average retail cost of electricity fell precipitously, with sequential declines occurring most every year, excepting for an extended spike in the 1920s, as technological improvements in power plant design and construction and declining source fuel expense resulted in significant cost efficiencies.69 This mitigated pressure on the retail price of electricity. Since then, the utility industry itself has found that the opposite has been true:

[TABLE OMITTED]

Price increases for electricity must continue to accelerate as the utility industry seeks to replace and upgrade (and build out) the existing centralized grids architecture: $1.5 to $2.0 trillion in additional new investment has been estimated by the utility industry to be necessary \*237 during the period from 2010 to 2030.72 Of that total amount, $880 billion is allocated for new transmission and distribution assets, while generation is estimated to require only $700 billion in new investment.73 Again, transmission and distribution assets are estimated to require ~$180 billion more investment dollars than assets that generate electricity in the first instance. While the cost of centralized generation may decrease with technological advances,74 the total cost of centralized electricity delivery will increase as transmission and distribution costs continue to comprise a larger percentage of total spending.

Regrettably, the utility industry's investment study did not account for the cost of a security event occurring during the twenty years for which the estimates run.75 If the actual social cost of a material security event is tens or hundreds of billions of dollars,76 then the industry's staggering investment estimates could be too low by an order of magnitude.77 The industry's cost estimates are immense nonetheless, and it is worthwhile to take a slight technical detour to understand what more than a trillion dollars of social investment purchases. Here, large power transformers (“Large Power Transformers”), an essential and aptly named component of the centralized infrastructure, provide a useful microcosm.

\*238 Large Power Transformers78

• Big, 100 to 400 ton machines used in the bulk power systems to change/transform voltages

• Only around 2,100 such units are used in the U.S. grids, opposed to tens of thousands of smaller transformers

• Custom-built by special order (~85% are now built outside the U.S.)

• Average time to procurement from ordering = 5 to 16 months

• Each unit costs between $1.0 to $7.5 million, dependent on market factors and type

• Transportation and installation expenses typically add an additional 25% to 30% to the final price

The theoretical cost of replacing all the existing Large Power Transformers in the U.S. electrical grids (~$50 billion or so by simple math) is a line item compared against the overall investment in the transmission and distribution infrastructure. Except, as with all components of the interdependent centralized grids, the associated cost of an unexpected failure is orders of magnitude higher if it impacts reliability. If a single unit is damaged, the rest of the system is required to compensate, potentially damaging other assets (including other transformers), and coordinated security risks are generally not single-point-of-attack problems.79 Of equal importance, Large Power Transformers cannot be purchased in quantity even if many were to fail at the same time.80

Certain utilities recently received regulatory approval to stockpile mostly foreign-made equipment at ratepayer expense.81 Although a \*239 stockpiling approach is understandable, it is expensive and trades one problem for another. Large Power Transformers are custom-built by specialized work forces operating through complex supply chain and procurement processes. This is the only way such machines are built and delivered. Pre-ordering units through a supply chain merely changes short-term demand characteristics and does not increase the potential throughput of the supply chain. In fact, a stockpiling approach may diminish production capacity as manufacturers boom and then bust, thereby reducing the ability of the supply chain to ramp up production in response to a security event. It also raises a more fundamental question: how many backups, and at what cost, are necessary or efficient when a single bullet can destroy an entire Large Power Transformer?82

Large Power Transformers are useful for understanding that the complexity inherent in the centralized electrical grids is primarily a function of the interdependency of its components, coupled with an absolute requirement of reliability. Overlaid on those competing characteristics is the hurdle of managing vital supply chains, often for foreign-made, specialized components that need to be immediately available and must work seamlessly in the hodgepodge that is the U.S. grids architecture.

Even if specific technical problems with Large Power Transformers and other similar centralized grids assets are mitigated, the utility industry forecasts that more than half of all interim-term future electricity investment dollars must be earmarked for transmission and distribution assets.83 Such assets, whether intentionally redundant or not, are fundamentally extraneous to the primary job of generating electricity. Thus, there is no clear path for reducing the long-term price of centrally delivered electricity even if the costs of centralized generation continue to decline.84

\*240 B. The Cost of Distributed Generation Continues to Decrease

NATIONAL RENEWABLE ENERGY LABORATORY, U.S. SOLAR COST BENCHMARK, Q1 2016

TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

Distributed generation is ultimately required for any alternate grids architecture that does not rely solely on centralized power plants and long transmission lines. Cost parity can be achieved either as distributed generation becomes less expensive, or as centralized electricity generation, transmission, or distribution become more expensive (as described above). Most common fuel forms can be used to generate electricity in a distributed manner; in practice, the most typical applications are solar fuel utilized by photovoltaic (“PV”) modules or wind turbines, and fossil fuels used in gas turbines or diesel engines. Over the past several years, certain efficiency gains have been made in small engine technologies, and component fuels costs have declined in certain instances, e.g., natural gas.85 While important to providing heterogeneous sources of distributed generation, such incremental improvements are not comparable with the jarring 60 percent decrease in the installed cost of PV modules over the last seven years (see graph above).86

\*241 The reasons for the massive price decreases are several but fundamentally it is that PV modules do not rely on turbine technology87 and are therefore more sensitive to efficiency gains from factors other than increased scale.88 This characteristic results in PV modules displaying consistent costs across installation types, from Residential/Commercial (i.e., distributed generation) to Utility-Scale (i.e., centralized generation),89 which means that little to no energy or economic efficiency is lost for PV modules deployed in distributed arrays. Instead, the cost differences between distributed generation and centralized generation shown in the inset chart largely originate from two sources: (i) primarily, utility-scale cost figures do not account for any allocated expense of the transmission and distribution infrastructure necessary to make such generation useful; as discussed in subpart A, above, such components constitute the majority of costs for centralized electricity delivery and cost studies simply assume such assets into existence;90 and, (ii) secondarily, soft costs (i.e., land acquisition, sales, tax, overhead, net profit), associated with residential and commercial PV installations are materially higher than Utility-Scale PV.91

C. Decentralized Systems and Future Analysis

In this Part II, relative cost parity between centralized electricity delivery systems and distributed generation has been described. Further, \*242 a sketch of the factors that will require centralized approaches to become significantly more expensive over time has been set forth. Such cost increases are independent of the awing expense resulting from a broad security event. Distributed generation, meanwhile, is set to become even less expensive in the short and medium-term as generation technology continues to improve and costs are reduced by economies of scale. As suggested in Part I.B.iii., above, a test for determining whether decentralized systems--as opposed to distributed generation--are deserving of broad social investment is whether such systems can independently (and economically) meet requirements of universal access and security in a manner that is equal to or better than the existing centralized system or demonstrate an ability to improve the fulfillment of such requirements when coupled with the existing centralized electricity architecture.

The remaining questions are then (a) what energy storage and/or load sharing capabilities are required for the operation of a decentralized system; and (b) should such technologies be integrated with the existing grids and, if so, how? The latter question is discussed in Part III. The former query is necessary because the source fuels for distributed generation are either (x) intermittent in availability (i.e., the sun and, therefore, wind); or, (y) dependent on centralized fossil fuels delivery, in which case the security risks of distributed generation would be, in part, recursive.92 Here, batteries for energy storage, community-level generation sharing, and microgrids for islanding,93 are diverse solutions for the independent operation or integration of decentralized electricity delivery.

A challenge in briefly summarizing such assistive technologies is that they are inherently flexible in deployment and application, and diverse applications here lead to significant cost variability. For example, such technologies could produce independent generation and consumption points. Or, in one particular combination, microgrids and community-level generation could work in a manner analogous to Edison's Pearl Street Station briefly described in Part I, essentially providing small-scale centralized generation and centralized distribution of electricity, but not transmission. This latter system fronts the same conceptual technical problem of centralized electricity delivery (i.e., negative networked effects) except those negative impacts are mitigated by the ability of such systems to be self-contained (islanded), thus reducing the risk and \*243 impacts of national and regional security events on local operations.94 Batteries used to store and deploy energy on demand are similarly flexible in deployment and application and are likewise difficult to characterize as centralized or decentralized technologies. Battery storage costs have also fallen at a remarkable pace over the past several years, nearly half since 2014, and are conservatively expected to drop by an additional 40 percent over the next five years.95 Regardless of the trend line of future costs, battery deployments in centralized and decentralized battery projects are already booming at present prices.96

III. THE ELECTRICAL GRIDS SECURITY REGULATORY PARADOX & OPPORTUNITIES FOR REDESIGN

For most folks, the structure and systems of electricity delivery are not front-of-mind. Until the moment when a reliability event (e.g., after Hurricanes Katrina or Sandy) disrupts the modern patterns of life for families, companies, and governmental entities, the underlying infrastructure and design of the electricity architecture is rationally ignored.97 Afterward, affected communities operate as best as they can, and the rest of the country, which continues to have access to immediately available electricity, mobilizes to help. Such reliability events have tended to be traumatic for those impacted. It is troubling to extrapolate what could occur if the U.S. experienced a broader scale system outage from a coordinated security event, one that lasted even a few weeks.

\*244 A. The Security Regulatory Paradox

Although much of the following exposition may be familiar or well-anticipated, it is worthwhile to take a brief detour to review a specific, well-known physical security event as a reminder that physical risks, not just cyber-attacks like the Ukrainian Grid Hack,98 are real, as opposed to theoretical.

In 2013, Pacific Gas & Electric's (PG&E) Metcalf Substation in South San Jose was physically vandalized by a gunman(men) who fired over 100 rounds from an assault rifle at a substation.99 The shots materially damaged seventeen transformers100 causing approximately $15 million in damage, and it took PG&E nearly four weeks to return the substation to full operation.101 The attack was not coordinated with attacks on other electricity infrastructure, and it did not result in a blackout of Silicon Valley as PG&E was ultimately able102 to reroute electricity from other power stations, such that the only impacts were considerable expense, pressure on the local grid assets for a few weeks, and, perhaps, limited electricity rationing to the Valley for a period of the repair time.103 The Federal Bureau of Investigation was officially unimpressed with the attack. “We don't think this was a sophisticated attack,” said John Lightfoot, at the time the regional manager of FBI counterterrorism based in the Bay Area. “It doesn't take a very high degree of training or access to technology to carry out this attack.”104 Certain security and industry analysts strongly disagree with the FBI's conclusions and have argued that only a professionally executed and sophisticated attack could have resulted in the substation not exploding.105 Following that line of reasoning, certain commentators have opined that the attack looked \*245 much like system probing as a dress rehearsal for a future attack.106 To date, the assailant(s) have not been arrested and the investigation remains open.107 Mr. Lightfoot left the FBI in 2016 after twenty years to join PG&E in a compliance and ethics management role; he recently noted that despite speculation by others the FBI was (and remains) the federal lead agency on the investigation and, as such, is the only entity with the totality of information regarding the attack.108

The manner of the attack, and its relative success, led to subsequent calls from the utility industry, especially including certain regulators, for significant increases in public investment for grid hardening measures. It might reasonably have led to a rethink of the structure of the centralized grids architecture itself.109 To wit, greater expertise, coordination, or tactical objectives on the part of the assailant(s) could have led to a weeks-long blackout of Silicon Valley; separately, the costs of implementing the proposed hardening measures to defend against similar attacks were and are large enough to alter the value proposition of centralized electricity delivery.110 Why then was the primary response to the Metcalf incident an acceleration of lobbying for public funding for centralized grid hardening measures that, while making similar111 future \*246 attacks relatively more difficult to carry out, have the effect of reinforcing existing systemic security risks?112

One reason might be that distributed energy sources were not economical in 2013.113 Another piecemeal reason is that NERC,114 investor-owned utilities, and most115 state regulatory regimes are, by mandate, history, and/or an institutional will to survive, largely captive to existing technology and industry interests.116 The true security regulatory paradox, however, is far more fundamental: the electricity industry nearly as a whole117 is built on a historical dedication to a grids system that is owned, controlled, and operated from afar. That dedication constitutes the fundamental source of modern insecurity for electricity delivery.118

B. Immediate Policy Opportunities for Grids Security Redesign

The U.S. national interest in electricity may be expressed as universal and secure access to electricity for military and governmental facilities, companies, individuals, and all others, delivered at something near a socially desirable price. The national interest must predominate because electricity is a good that is essential to the functioning of an industrialized nation-state.119 From the beginning of the grids, utilities have sought to profitably deliver electricity in a manner required by the public interest, all in the framework of tradeoffs with public regulatory authorities that are characteristic of government-granted monopolies.120 Those efforts and that framework were supported by a centralized electricity architecture that required enormous social investment to economically meet the requirements of near universal access.121 The resulting grids architecture is a technological marvel constructed by coordinated utility monopolies whose price and competitive contours are rigidly regulated. This grids architecture has performed exceptionally well for over a hundred years, although its defining technical characteristics now present existential risk to modern life in the U.S.122

\*247 Today, and more so in the future, centralized systems face material negative networked effects vis-à-vis security risks. As further discussed below, properly configured decentralized systems do not.123 At the same time, the march of technology has continued and distributed generation sources have now achieved cost parity with centralized delivery, with significant cost reductions expected to continue in the near-term including for decentralized systems as a whole.124 Centralized electricity, by contrast, is becoming more expensive as transmission and distribution spending continues to outpace the investment needed to generate electricity in the first instance, and as investments in its security upkeep necessarily compound.125

#### Grid collapse causes extinction

Matthew Weiss and Martin Weiss 19, Matthew Weiss is National Sales Director at United Medical Instruments, UMI and Research assistant at the American Jewish University, Martin Weiss is Neurosurgeon at UCLA-Olive View Medical Center, “An assessment of threats to the American power grid”, 5/29/2019, Energy, Sustainability and Society, Volume 9, No. 18, <https://energsustainsoc.biomedcentral.com/articles/10.1186/s13705-019-0199-y#Sec2>

Consequences of a sustained power outage The EMP Commission states “Should significant parts of the electrical power infrastructure be lost for any substantial period of time, the Commission believes that the consequences are likely to be catastrophic, and many people will die for the lack of the basic elements necessary to sustain life in dense urban and suburban communities.” [67]. Space constraints preclude discussion on how the loss of the grid would render synthesis and distribution of oil and gas inoperative. Telecommunications would collapse, as would finance and banking. Virtually all technology, infrastructure, and services require electricity. An EMP attack that collapses the electric power grid will collapse the water infrastructure—the delivery and purification of water and the removal and treatment of wastewater and sewage. Outbreaks that would result from the failure of these systems include cholera. It is problematic if fuel will be available to boil water. Lack of water will cause death in 3 to 4 days [68]. Food production would also collapse. Crops and livestock require water delivered by electronically powered pumps. Tractors, harvesters, and other farm equipment run on petroleum products supplied by an infrastructure (pumps, pipelines) that require electricity. The plants that make fertilizer, insecticides, and feed also require electricity. Gas pumps that fuel the trucks that distribute food require electricity. Food processing requires electricity. In 1900, nearly 40% of the population lived on farms. That percentage is now less than 2% [69]. It is through technology that 2% of the population can feed the other 98% [68]. The acreage under cultivation today is only 6% more than in 1900, yet productivity has increased 50 fold [69]. As stated by Dr. Lowell L Wood in Congressional testimony: “If we were no longer able to fuel our agricultural machine in the country, the food production of the country would simply stop, because we do not have the horses and mules that used to tow agricultural gear around in the 1880s and 1890s”. “So the situation would be exceedingly adverse if both electricity and the fuel that electricity moves around the country……… stayed away for a substantial period of time, we would miss the harvest, and we would starve the following winter” [70]. People can live for 1–2 months without food, but after 5 days, they have difficulty thinking and at 2 weeks they are incapacitated [68]. There is typically a 30-day perishable food supply at regional warehouses but most would be destroyed with the loss of refrigeration [69]. The EMP Commission has suggested food be stockpiled for a possible EMP event. A prescription for failure Even if all the recommendations of the Congressional EMP Commission were implemented, there is no guarantee that the grid will not sustain a prolonged collapse. There should therefore be contingency plans for such a failure. There is also another consideration. The foundational pillars of prior American nuclear defense policy, in today’s climate, are of uncertain validity. Mutual assured destruction is the Maginot line of the 21st century. Nonproliferation will prove difficult to resurrect. The consequences of a widespread nuclear attack have been positioned to the public as massive deaths from blast effects, and then further lingering deaths from the effects of radiation. We suspect there will be no electricity, and there will be no electricity for a very long time. There should be an actionable plan in anticipation of a possible prolonged collapse of the grid—a retro-structure and a skill set to provide a framework for survival. Our sense is there is no plan.

#### Triggers nuclear escalation

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation)

Yet another pathway to escalation could arise from a cascading series of cyberstrikes and counterstrikes against vital national infrastructure rather than on military targets. All major powers, along with Iran and North Korea, have developed and deployed cyberweapons designed to disrupt and destroy major elements of an adversary’s key economic systems, such as power grids, financial systems, and transportation networks. As noted, Russia has infiltrated the U.S. electrical grid, and it is widely believed that the United States has done the same in Russia.[12](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12) The Pentagon has also devised a plan known as “Nitro Zeus,” intended to immobilize the entire Iranian economy and so force it to capitulate to U.S. demands or, if that approach failed, to pave the way for a crippling air and missile attack.[13](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12)

The danger here is that economic attacks of this sort, if undertaken during a period of tension and crisis, could lead to an escalating series of tit-for-tat attacks against ever more vital elements of an adversary’s critical infrastructure, producing widespread chaos and harm and eventually leading one side to initiate kinetic attacks on critical military targets, risking the slippery slope to nuclear conflict. For example, a Russian cyberattack on the U.S. power grid could trigger U.S. attacks on Russian energy and financial systems, causing widespread disorder in both countries and generating an impulse for even more devastating attacks. At some point, such attacks “could lead to major conflict and possibly nuclear war.”[14](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote14)

These are by no means the only pathways to escalation resulting from the offensive use of cyberweapons. Others include efforts by third parties, such as proxy states or terrorist organizations, to provoke a global nuclear crisis by causing early-warning systems to generate false readings (“spoofing”) of missile launches. Yet, they do provide a clear indication of the severity of the threat. As states’ reliance on cyberspace grows and cyberweapons become more powerful, the dangers of unintended or accidental escalation can only grow more severe.

#### Actors have the means and motivations to strike critical infrastructure.

Wintch 21, \*Timothy M. Wintch, an active-duty Major in the United States Air Force. He is currently a graduate student at the Oettinger School of Science & Technology Intelligence, National Intelligence University, in Bethesda, Maryland. Mr. Wintch has over 11 years of experience in command-and-control operations as an Air Battle Manager. He holds a Bachelor of Arts in Politics from the University of California, Santa Cruz, and a Master of Arts in Military Studies from American Military University. (April 20th, 2021, “PERSPECTIVE: Cyber and Physical Threats to the U.S. Power Grid and Keeping the Lights on”, https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/)

Among critical infrastructure sectors in the U.S., energy is perhaps the most crucial of the 16 sectors defined by the Department of Homeland Security. This sector is so vital because it provides the energy necessary to run every other critical infrastructure sector. However, the U.S. power grid, the backbone of the energy sector, is built upon an aging skeleton that is becoming increasingly vulnerable every day. Whether from terrorists or nation-states like Russia and China, the power grid is susceptible to not just physical attacks, but also to cyber intrusion as well. However, much of this threat can be mitigated if the U.S. takes the appropriate steps to safeguard the power grid and avoid a potential catastrophe in the future.

Since Sept. 11, 2001, terrorism on U.S. soil has been at the forefront of American consciousness. Critical infrastructure provides an appealing target because of the disproportionally large impact even a small attack can have on the sectors. In particular, the power grid represents a particularly lucrative target, both in terms of the ease of access and the large impact it can make. The National Research Council stated that the U.S. power grid is “vulnerable to intelligent multi-site attacks by knowledgeable attackers intent on causing maximum physical damage to key components on a wide geographical scale.”[[1]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn1) Additionally, the physical security of transmission and distribution systems is difficult due to the dispersed nature of these key components, which in turn is advantageous to attackers as it reduces the likelihood of their capture.[[2]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn2) From 2002-2012, approximately 2,500 physical attacks occurred against transmission lines and towers worldwide and approximately 500 attacks against transformer substations.[[3]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn3) Terrorists have the motivation to attack the U.S. power grid but the very nature of the grid makes it highly vulnerable. The power grid is not only at risk from physical attacks, but also nation-state cyberattacks.

One nation that has shown both the capability and intent to use attacks against critical energy infrastructure is Russia, as demonstrated in their 2015 annexation of Crimea from Ukraine. A Russian cyber threat group known as Sandworm, which used its BlackEnergy malware, attacked Ukrainian computer systems that provide remote control of the Ukraine power grid.[[4]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn4) This attack, and another in 2016, each left the capital Kiev without power, prompting cyber experts to raise concern about the same malware already existing in NATO and the U.S. power grids.[[5]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn5) In any conflict between Russia and NATO, not only would similar cyberattacks pose a threat, but so would potential physical attacks severing fuel oil and natural gas lines to Western Europe. Russia has both the capability and intent to attack critical infrastructure, particularly power grids, during future conflicts in their “hybrid warfare” approach.

Another nation that has the capability to attack critical energy infrastructure is China, representing a threat to not just the U.S. energy infrastructure but also that of our allies whose support would be vital in a major conflict. A recent NATO report highlighted this threat from China’s Belt and Road Initiative, stating that “[China’s] foreign direct investment in strategic sectors [such as energy generation and distribution] …raises questions about whether access and control over such infrastructure can be maintained, particularly in crisis when it would be required to support the military.”[[6]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn6) Like Russia, China has been active with cyber intrusions in U.S. energy infrastructure. The Mission Support Center at Idaho National Laboratory characterized these as attacks as “multiple intrusions into US ICS/SCADA [Industrial Control Systems/Supervisory Control and Data Acquisition] and smart grid tools [that] may be aimed more at intellectual property theft and gathering intelligence to bolster their own infrastructure, but it is likely that they are also using these intrusions to develop capabilities to attack the [bulk electric system], as well.”[[7]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn7) China, therefore, has both the capability and intent to conduct cyber intrusions and attacks for myriad reasons.

Another arm of this threat is the reliance the U.S. energy industry has on imports from China, especially transformers. In early 2020, federal officials seized a transformer in the port of Houston that had been imported by the Jiangsu Huapeng Transformer Company before sending it to Sandia National Laboratory in Albuquerque. Sandia is contracted by the U.S. Department of Energy for mitigating national security threats.[[8]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn8) The Wall Street Journal reported that “Mike Howard, chief executive of the Electric Power Research Institute, a utility-funded technical organization, said that the diversion of a huge, expensive transformer is so unusual – in his experience, unprecedented – that it suggests officials had significant security concerns.”[[9]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn9) Previously destined for the Washington Area Power Administration’s Ault, Colo., substation, the transformer is believed to have been seized due to “backdoor” exploitable hardware emplaced by the Chinese prior to shipment.[[10]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn10) Shortly after these events, President Trump issued Executive Order 13920, “[Securing the United States Bulk-Power System](https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-securing-united-states-bulk-power-system/),” essentially limiting the import of Chinese-built critical energy infrastructure components due to concerns about cybersecurity.[[11]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn11) Interestingly, Jiangsu Huapeng “boasted that it supported 10 percent of New York City’s electricity load.”[[12]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn12)

Franklin Kramer, the former Assistant Secretary of Defense for International Security Affairs, testified before a U.S. House of Representatives Energy and Commerce subcommittee during an energy and power hearing in 2011 and said that a “highly-coordinated and structured cyber, physical, or blended attack on the bulk power system, however, could result in long-term (irreparable) damage to key system components in multiple simultaneous or near-simultaneous strikes.” He added that “an outage could result with the potential to affect a wide geographic area and cause large population centers to lose power for extended periods.”[[13]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn13) Even the inclusion of features such as smart grids to the overall grid structure poses new vulnerabilities through their connectivity. Kramer stated that “such connectivity means that the distribution system could be a key vector for a national security attack on the grid.”[[14]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn14)

#### Only antitrust solves—provides vital deterrence that compliments FERC oversight. Prefer—our ev assumes the CP and concludes it’s insufficient.

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.

#### 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 immunizes manipulation of market prices for utility profits. Causes blackouts and energy price hikes.

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).

#### 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.

#### That ripples through the whole economy.

Salzman 11/9 [Avi; November 9; Senior writer at Barron's, covering stocks, the economy, and the impact of new technology on financial markets; *Barron’s,* “High Energy Prices Are Rippling Through the Economy,” <https://www.barrons.com/articles/high-energy-prices-are-rippling-through-the-economy-51636477167>]

The latest government inflation figures show that prices are rising fast, and much of the momentum is coming from energy. The trends are already hitting businesses in several industries and will continue rippling through the economy. Investors should keep an eye out for shrinking margins—and possibly pressure on valuation—in the months ahead.

On Tuesday, the Bureau of Labor Statistics released the monthly producer price index, which measures prices of goods and services as they make their way through the supply chain. The report showed that the PPI rose 0.6% in October on a month-over-month basis, and 8.6% on a year over year basis, in line with economists’ expectations.

The consumer price index, which measures prices at the retail level, is scheduled to be released on Wednesday. That report is likely to show that escalating energy prices are forcing consumers to pay up for heating oil, propane, gasoline, and other fuels.

“I think more pain is going to come to the consumer, certainly, for this winter,” said Marcus McGregor, an energy analyst at asset manager Conning. “I think if you look at the latest reports, costs for propane, natural gas and any sources that are leading into the consumer’s home—if we have a really cold winter—are expected to increase significantly this winter. So I see more pain before relief when it comes to the U.S. consumer.”

Businesses are already having to adjust. The PPI shows how the escalating energy costs are affecting corporations—and how they may end up flowing through to consumers in several industries. The price of goods that were at the final stage of production (as opposed to component parts) rose 1.2% in the month, with three quarters of that jump having to do with a rise in the price of energy, according to the report. In October, oil prices rose 13%. Natural gas prices were flat in October, after jumping 34% in September, the largest one-month gain in 12 years.

That has been a boon for energy companies, which have led the market higher this year after trailing for much of the previous decade. Exxon Mobil (ticker: XOM) stock has soared 58% this year, and BP (BP) is up 34%.

But escalating energy prices are a draw on several other industries. Consumer goods get more expensive because it costs more to truck them to warehouses and stores.

“Higher commodity and freight cost impacts combined were a 400 basis point hit to gross margins,” said Procter & Gamble (PG) CFO Andre Schulten on the company’s earnings call last month.

Airlines get pinched, too, because fuel can account for about one-fifth of their expenses. Delta Air Lines (DAL), for instance, said on its latest earnings call that high fuel prices “will pressure our ability to remain profitable in the December quarter.”

“At present time, we’re expecting a modest loss in the fourth quarter with crude prices driving that up nearly 60% year-to-date and more than 15% just over the last month,” said CEO Ed Bastian.

Companies that make or process fuels and chemicals often run on natural gas. Refinery operator Valero Energy (VLO) said that its refinery operating expenses rose 6% in the third quarter largely because of higher natural gas prices. And any other business—including office work—that uses substantial amounts of electricity can be hurt when energy prices rise. Natural gas now accounts for the largest share of U.S. electricity generation.

Industrial companies can be hit too, as their operating expenses rise. Processed fuels used in manufacturing—things like oils, greases, natural gas, and diesel—are on average 34% more expensive than they were a year ago, according to the PPI. That, along with supply-chain problems around the world, are causing some industrial companies to warn investors that their margins could be hurt.

German chemicals company BASF (BASFY) said that high natural gas prices cost it 600 million euros in the first nine months of the year, but that October prices increases would make its operations even more expensive.

“Throughout basically all value chains, our suppliers, our customers and we ourselves continue to be confronted with increasing raw material, energy and transportation costs, supply chain constraints and the related and largely unforeseeable issues with material availability,” said CEO Martin Brudermüller on the company’s latest earnings call.

It’s a global problem that won’t be going away soon, and one that consumers are starting to feel too.

#### Uniquely undermines consumption which kills growth

The Economist 21 [The Economist, "How soaring energy costs could hobble the covid-19 recovery", 10/23/21, https://www.economist.com/finance-and-economics/2021/10/23/how-soaring-energy-costs-could-hobble-the-covid-19-recovery]

The inflationary consequences of costly energy are already apparent. In the euro area, headline annual inflation jumped to 3.4% in September, thanks to a 17.4% leap in energy costs. Underlying “core” inflation (which excludes food and energy prices) rose by a more modest 1.9%. In America underlying inflation ran hotter in September, at 4%. But a 24.8% increase in energy costs pushed the headline rate up even higher, to 5.4%. These figures are likely to rise further in coming months, since rocketing fuel prices in October have not yet made their way into the statistics.

The contribution of energy to inflation will begin to fade once prices plateau—as they may in coming months, and even sooner if winter proves no colder than usual. Recent analysis by economists at Goldman Sachs, a bank, suggests that the effect of energy costs on America’s year-on-year inflation rate stood at 2.15 percentage points in September and will likely rise to 2.5 percentage points by the end of this year—taking the headline rate to 5.8%, holding other components constant—before eventually turning slightly negative by the end of 2022.

What about the damage to growth? The predominant factor, in the near term at least, is the effect on consumption and investment. Over short time horizons, households and firms cannot easily cut energy use in response to rising costs, leaving less to spend on other goods and services. This effect, according to work by Paul Edelstein of State Street, a bank, and Lutz Kilian of the Federal Reserve Bank of Dallas, is concentrated in the consumption of durable goods; a rise of 10% in the price of energy is associated with a 4.7% decline in spending on durables (and a particularly large drop in purchases of vehicles).

Yet the researchers also note that consumption tends to fall by more in response to rising fuel costs than you might expect given the share of energy in budgets. That seems to be because energy shocks tend to depress sentiment. James Hamilton of the University of California, San Diego, studies historical oil shocks and finds that a 20% rise in the real price of energy is associated with a 15-point drop in an index of consumer confidence. (A gauge of American sentiment collected by the University of Michigan has fallen by nearly 17 points since April 2021.)

An energy-induced slump could be mitigated if consumers meet higher bills by drawing on savings. By the end of 2020, households across large rich economies had accumulated “excess”, or above-normal, savings equivalent to more than 6% of gdp. Nonetheless, analysts at Goldman reckon that costly energy will reduce the growth rate of consumption in America by 0.4 percentage points this year, and by 0.5 points in 2022. Those inclined to see the petrol tank as half full may note that slower consumption growth could help ease strains on supply chains, which have been stressed by especially strong demand for durable goods. Those who grumble that it is half empty may worry that power cuts in places like China could result in still more shortages.

#### Slow growth causes extinction.

Oppenheimer ’21 [Michael; Clinical Professor in Center for Global Affairs @ New York University, Senior Consulting Fellow @ Scenario Planning at the International Institute for Strategic Studies, Former Executive Vice President @ The Futures Group, Member @ Council on Foreign Relations, Member in the Foreign Policy Roundtable @ Carnegie Council on Ethics and International Affairs, Member @ The American Council on Germany; “The Turbulent Future of International Relations,” in *The Future of Global Affairs: Managing Discontinuity, Disruption and Destruction*, p. 23-43]

Four structural forces will shape the future of International Relations: globalization (but without liberal rules, institutions, and leadership)1; multipolarity (the end of American hegemony and wider distribution of power among states and non-states2); the strengthening of distinctive, national and subnational identities, as persistent cultural differences are accentuated by the disruptive effects of Western style globalization (what Samuel Huntington called the “non-westernization of IR”3); and secular economic stagnation, a product of longer term global decline in birth rates combined with aging populations.4 These structural forces do not determine everything. Environmental events, global health challenges, internal political developments, policy mistakes, technology breakthroughs or failures, will intersect with structure to define our future. But these four structural forces will impact the way states behave, in the capacity of great powers to manage their differences, and to act collectively to settle, rather than exploit, the inevitable shocks of the next decade.

Some of these structural forces could be managed to promote prosperity and avoid war. Multipolarity (inherently more prone to conflict than other configurations of power, given coordination problems)5 plus globalization can work in a world of prosperity, convergent values, and effective conflict management. The Congress of Vienna system achieved relative peace in Europe over a hundred-year period through informal cooperation among multiple states sharing a fear of populist revolution. It ended decisively in 1914. Contemporary neoliberal institutionalists, such as John Ikenberry, accept multipolarity as our likely future, but are confident that globalization with liberal characteristics can be sustained without American hegemony, arguing that liberal values and practices have been fully accepted by states, global institutions, and private actors as imperative for growth and political legitimacy.6 Divergent values plus multipolarity can work, though at significantly lower levels of economic growth-in an autarchic world of isolated units, a world envisioned by the advocates of decoupling, including the current American president.7 Divergent values plus globalization can be managed by hegemonic power, exemplified by the decade of the 1990s, when the Washington Consensus, imposed by American leverage exerted through the IMF and other U.S. dominated institutions, overrode national differences, but with real costs to those states undergoing “structural adjustment programs,”8 and ultimately at the cost of global growth, as states—especially in Asia—increased their savings to self insure against future financial crises.9

But all four forces operating simultaneously will produce a future of increasing internal polarization and cross border conflict, diminished economic growth and poverty alleviation, weakened global institutions and norms of behavior, and reduced collective capacity to confront emerging challenges of global warming, accelerating technology change, nuclear weapons innovation and proliferation. As in any effective scenario, this future is clearly visible to any keen observer. We have only to abolish wishful thinking and believe our own eyes.10

Secular Stagnation

This unbrave new world has been emerging for some time, as US power has declined relative to other states, especially China, global liberalism has failed to deliver on its promises, and totalitarian capitalism has proven effective in leveraging globalization for economic growth and political legitimacy while exploiting technology and the state’s coercive powers to maintain internal political control. But this new era was jumpstarted by the world financial crisis of 2007, which revealed the bankruptcy of unregulated market capitalism, weakened faith in US leadership, exacerbated economic deprivation and inequality around the world, ignited growing populism, and undermined international liberal institutions. The skewed distribution of wealth experienced in most developed countries, politically tolerated in periods of growth, became intolerable as growth rates declined. A combination of aging populations, accelerating technology, and global populism/nationalism promises to make this growth decline very difficult to reverse. What Larry Summers and other international political economists have come to call “secular stagnation” increases the likelihood that illiberal globalization, multipolarity, and rising nationalism will define our future. Summers11 has argued that the world is entering a long period of diminishing economic growth. He suggests that secular stagnation “may be the defining macroeconomic challenge of our times.” Julius Probst, in his recent assessment of Summers’ ideas, explains:

…rich countries are ageing as birth rates decline and people live longer. This has pushed down real interest rates because investors think these trends will mean they will make lower returns from investing in future, making them more willing to accept a lower return on government debt as a result.

Other factors that make investors similarly pessimistic include rising global inequality and the slowdown in productivity growth…

This decline in real interest rates matters because economists believe that to overcome an economic downturn, a central bank must drive down the real interest rate to a certain level to encourage more spending and investment… Because real interest rates are so low, Summers and his supporters believe that the rate required to reach full employment is so far into negative territory that it is effectively impossible.

…in the long run, more immigration might be a vital part of curing secular stagnation. Summers also heavily prescribes increased government spending, arguing that it might actually be more prudent than cutting back – especially if the money is spent on infrastructure, education and research and development.

Of course, governments in Europe and the US are instead trying to shut their doors to migrants. And austerity policies have taken their toll on infrastructure and public research. This looks set to ensure that the next recession will be particularly nasty when it comes… Unless governments change course radically, we could be in for a sobering period ahead.12

The rise of nationalism/populism is both cause and effect of this economic outlook. Lower growth will make every aspect of the liberal order more difficult to resuscitate post-Trump. Domestic politics will become more polarized and dysfunctional, as competition for diminishing resources intensifies. International collaboration, ad hoc or through institutions, will become politically toxic. Protectionism, in its multiple forms, will make economic recovery from “secular stagnation” a heavy lift, and the liberal hegemonic leadership and strong institutions that limited the damage of previous downturns, will be unavailable. A clear demonstration of this negative feedback loop is the economic damage being inflicted on the world by Trump’s trade war with China, which— despite the so-called phase one agreement—has predictably escalated from negotiating tactic to imbedded reality, with no end in sight. In a world already suffering from inadequate investment, the uncertainties generated by this confrontation will further curb the investments essential for future growth. Another demonstration of the intersection of structural forces is how populist-motivated controls on immigration (always a weakness in the hyper-globalization narrative) deprives developed countries of Summers’ recommended policy response to secular stagnation, which in a more open world would be a win-win for rich and poor countries alike, increasing wage rates and remittance revenues for the developing countries, replenishing the labor supply for rich countries experiencing low birth rates.

Illiberal Globalization

Economic weakness and rising nationalism (along with multipolarity) will not end globalization, but will profoundly alter its character and greatly reduce its economic and political benefits. Liberal global institutions, under American hegemony, have served multiple purposes, enabling states to improve the quality of international relations and more fully satisfy the needs of their citizens, and provide companies with the legal and institutional stability necessary to manage the inherent risks of global investment. But under present and future conditions these institutions will become the battlegrounds—and the victims—of geopolitical competition. The Trump Administration’s frontal attack on multilateralism is but the final nail in the coffin of the Bretton Woods system in trade and finance, which has been in slow but accelerating decline since the end of the Cold War. Future American leadership may embrace renewed collaboration in global trade and finance, macroeconomic management, environmental sustainability and the like, but repairing the damage requires the heroic assumption that America’s own identity has not been fundamentally altered by the Trump era (four years or eight matters here), and by the internal and global forces that enabled his rise. The fact will remain that a sizeable portion of the American electorate, and a monolithically proTrump Republican Party, is committed to an illiberal future. And even if the effects are transitory, the causes of weakening global collaboration are structural, not subject to the efforts of some hypothetical future US liberal leadership. It is clear that the US has lost respect among its rivals, and trust among its allies. While its economic and military capacity is still greatly superior to all others, its political dysfunction has diminished its ability to convert this wealth into effective power.13 It will furthermore operate in a future system of diffusing material power, diverging economic and political governance approaches, and rising nationalism. Trump has promoted these forces, but did not invent them, and future US Administrations will struggle to cope with them.

What will illiberal globalization look like? Consider recent events. The instruments of globalization have been weaponized by strong states in pursuit of their geopolitical objectives. This has turned the liberal argument on behalf of globalization on its head. Instead of interdependence as an unstoppable force pushing states toward collaboration and convergence around market-friendly domestic policies, states are exploiting interdependence to inflict harm on their adversaries, and even on their allies. The increasing interaction across national boundaries that globalization entails, now produces not harmonization and cooperation, but friction and escalating trade and investment disputes.14 The Trump Administration is in the lead here, but it is not alone. Trade and investment friction with China is the most obvious and damaging example, precipitated by China’s long failure to conform to the World Trade Organization (WTO) principles, now escalated by President Trump into a trade and currency war disturbingly reminiscent of the 1930s that Bretton Woods was designed to prevent. Financial sanctions against Iran, in violation of US obligations in the Joint Comprehensive Plan Of Action (JCPOA), is another example of the rule of law succumbing to geopolitical competition. Though more mercantilist in intent than geopolitical, US tariffs on steel and aluminum, and their threatened use in automotives, aimed at the EU, Canada, and Japan,15 are equally destructive of the liberal system and of future economic growth, imposed as they are by the author of that system, and will spread to others. And indeed, Japan has used export controls in its escalating conflict with South Korea16 (as did China in imposing controls on rare earth,17 and as the US has done as part of its trade war with China). Inward foreign direct investment restrictions are spreading. The vitality of the WTO is being sapped by its inability to complete the Doha Round, by the proliferation of bilateral and regional agreements, and now by the Trump Administration’s hold on appointments to WTO judicial panels. It should not surprise anyone if, during a second term, Trump formally withdrew the US from the WTO. At a minimum it will become a “dead letter regime.”18

As such measures gain traction, it will become clear to states—and to companies—that a global trading system more responsive to raw power than to law entails escalating risk and diminishing benefits. This will be the end of economic globalization, and its many benefits, as we know it. It represents nothing less than the subordination of economic globalization, a system which many thought obeyed its own logic, to an international politics of zero-sum power competition among multiple actors with divergent interests and values. The costs will be significant: Bloomberg Economics estimates that the cost in lost US GDP in 2019- dollar terms from the trade war with China has reached $134 billion to date and will rise to a total of $316 billion by the end of 2020.19

Economically, the just-in-time, maximally efficient world of global supply chains, driving down costs, incentivizing innovation, spreading investment, integrating new countries and populations into the global system, is being Balkanized. Bilateral and regional deals are proliferating, while global, nondiscriminatory trade agreements are at an end. Economies of scale will shrink, incentivizing less investment, increasing costs and prices, compromising growth, marginalizing countries whose growth and poverty reduction depended on participation in global supply chains. A world already suffering from excess savings (in the corporate sector, among mostly Asian countries) will respond to heightened risk and uncertainty with further retrenchment. The problem is perfectly captured by Tim Boyle, CEO of Columbia Sportswear, whose supply chain runs through China, reacting to yet another ratcheting up of US tariffs on Chinese imports, most recently on consumer goods:

We move stuff around to take advantage of inexpensive labor. That’s why we’re in Bangladesh. That’s why we’re looking at Africa. We’re putting investment capital to work, to get a return for our shareholders. So, when we make a wager on investment, this is not Vegas. We have to have a reasonable expectation we can get a return. That’s predicated on the rule of law: where can we expect the laws to be enforced, and for the foreseeable future, the rules will be in place? That’s what America used to be.20

The international political effects will be equally damaging. The four structural forces act on each other to produce the more dangerous, less prosperous world projected here. Illiberal globalization represents geopolitical conflict by (at first) physically non-kinetic means. It arises from intensifying competition among powerful states with divergent interests and identities, but in its effects drives down growth and fuels increased nationalism/populism, which further contributes to conflict. Twenty-first-century protectionism represents bottom-up forces arising from economic disruption. But it is also a top-down phenomenon, representing a strategic effort by political leadership to reduce the constraints of interdependence on freedom of geopolitical action, in effect a precursor and enabler of war. This is the disturbing hypothesis of Daniel Drezner, argued in an important May 2019 piece in Reason, titled “Will Today’s Global Trade Wars Lead to World War Three,”21 which examines the preWorld War I period of heightened trade conflict, its contribution to the disaster that followed, and its parallels to the present:

Before the First World War started, powers great and small took a variety of steps to thwart the globalization of the 19th century. Each of these steps made it easier for the key combatants to conceive of a general war.

We are beginning to see a similar approach to the globalization of the 21st century. One by one, the economic constraints on military aggression are eroding. And too many have forgotten—or never knew—how this played out a century ago.

…In many ways, 19th century globalization was a victim of its own success. Reduced tariffs and transport costs flooded Europe with inexpensive grains from Russia and the United States. The incomes of landowners in these countries suffered a serious hit, and the Long Depression that ran from 1873 until 1896 generated pressure on European governments to protect against cheap imports.

…The primary lesson to draw from the years before 1914 is not that economic interdependence was a weak constraint on military conflict. It is that, even in a globalized economy, governments can take protectionist actions to reduce their interdependence in anticipation of future wars.

In retrospect, the 30 years of tariff hikes, trade wars, and currency conflicts that preceded 1914 were harbingers of the devastation to come. European governments did not necessarily want to ignite a war among the great powers. By reducing their interdependence, however, they made that option conceivable.

…the backlash to globalization that preceded the Great War seems to be reprised in the current moment. Indeed, there are ways in which the current moment is scarier than the pre-1914 era. Back then, the world’s hegemon, the United Kingdom, acted as a brake on economic closure. In 2019, the United States is the protectionist with its foot on the accelerator. The constraints of Sino-American interdependence—what economist Larry Summers once called “the financial balance of terror”—no longer look so binding. And there are far too many hot spots—the Korean peninsula, the South China Sea, Taiwan—where the kindling seems awfully dry.

Multipolarity

We can define multipolarity as a wide distribution of power among multiple independent states. Exact equivalence of material power is not implied. What is required is the possession by several states of the capacity to coerce others to act in ways they would otherwise not, through kinetic or other means (economic sanctions, political manipulation, denial of access to essential resources, etc.). Such a distribution of power presents inherently graver challenges to peace and stability than do unipolar or bipolar power configurations,22 though of course none are safe or permanent. In brief, the greater the number of consequential actors, the greater the challenge of coordinating actions to avoid, manage, or de-escalate conflicts. Multipolarity also entails a greater potential for sudden changes in the balance of power, as one state may defect to another coalition or opt out, and as a result, the greater the degree of uncertainty experienced by all states, and the greater the plausibility of downside assumptions about the intentions and capabilities of one’s adversaries. This psychology, always present in international politics but particularly powerful in multipolarity, heightens the potential for escalation of minor conflicts, and of states launching preventive or preemptive wars. In multipolarity, states are always on edge, entertaining worst-case scenarios about actual and potential enemies, and acting on these fears—expanding their armies, introducing new weapon systems, altering doctrine to relax constraints on the use of force—in ways that reinforce the worst fears of others.

The risks inherent in multipolarity are heightened by the attendant weakening of global institutions. Even in a state-centric system, such institutions can facilitate communication and transparency, helping states to manage conflicts by reducing the potential for misperception and escalation toward war. But, as Waheguru Pal Singh Sidhu argues in his chapter on the United Nations, the influence of multilateral institutions as agent and actor is clearly in decline, a result of bottom-up populist/nationalist pressures experienced in many countries, as well as the coordination problems that increase in a system of multiple great powers. As conflict resolution institutions atrophy, great powers will find themselves in “security dilemmas”23 in which verification of a rival’s intentions is unavailable, and worst-case assumptions fill the gap created by uncertainty. And the supply of conflicts will expand as a result of growing nationalism and populism, which are premised on hostility, paranoia, and isolation, with governments seeking political legitimacy through external conflict, producing a siege mentality that deliberately cuts off communication with other states.

Finally, the transition from unipolarity (roughly 1989–2007) to multipolarity is unregulated and hazardous, as the existing superpower fears and resists challenges to its primacy from a rising power or powers, while the rising power entertains new ambitions as entitlements now within its reach. Such a “power transition” and its dangers were identified by Thucydides in explaining the Peloponnesian Wars,24 by Organski (the “rear-end collision”)25 during the Cold War, and recently repopularized and brought up to date by Graham Allison in predicting conflict between the US and China.26

A useful, and consequential illustration of the inherent challenge of conflict management during a power transition toward multipolarity, is the weakening of the arms control regime negotiated by the US and the Soviet Union during the Cold War. Despite the existential, global conflict between two nuclear armed superpowers embracing diametrically opposed world views and operating in economic isolation from each other, the two managed to avoid worst-case outcomes. They accomplished this in part by institutionalizing verifiable limits on testing and deployment of both strategic and intermediate-range nuclear missiles. Yet as diplomatically and technically challenging as these achievements were, the introduction of a third great power, China, into this twocountry calculus has proven to be a deal breaker. Unconstrained by these bilateral agreements, China has been free to build up its capability, and has taken full advantage in ramping up production and deployment of intermediate-range ground-launched cruise missiles, thus challenging the US ability to credibly guarantee the security of its allies in Asia, and greatly increasing the costs of maintaining its Asian regional hegemony. As a result, the Intermediate Nuclear Force treaty is effectively dead, and the New Start Treaty, covering strategic missiles, is due to expire next year, with no indication of any US–Russian consensus to extend it. The US has with logic indicated its interest in making these agreements trilateral; but China, with its growing power and ambition, has also logically rejected these overtures. Thus, all three great powers are entering a period of nuclear weapons competition unconstrained by the major Cold War arms control regimes. In a period of rapid advances in technology and worsening great power relations, the nuclear competition will be a defining characteristic of the next decade and beyond. This dynamic will also complicate nuclear nonproliferation efforts, as both the demand for nuclear weapons (a consequence of rising regional and global insecurity), and supply of nuclear materials and technology (a result of the weakening of the nonproliferation regime and deteriorating great power relations) will increase.

Will deterrence prevent war in a world of several nuclear weapons states, (the current nuclear powers plus South Korea, Iran, Saudi Arabia, Japan, Turkey), as it helped to do during the bipolar Cold War? Some neorealist observers view nuclear weapons proliferation as stabilizing, extending the balance of terror, and the imperative of restraint, to new nuclear weapons states with much to fight over (Saudi Arabia and Iran, for example).27 Others,28 examining issues of command and control of nuclear weapons deployment and use by newly acquiring states, asymmetries in doctrines, force structures, and capabilities between rivals, the perils of variable rates in transition to weapons deployment, problems of communication between states with deep mutual grievances, the heightened risk of transfer of such weapons to non-state actors, have grave doubts about the safety of a multipolar, nuclear-armed world.29 We can at least conclude that prudence dictates heightened efforts to slow the pace of proliferation, while realism requires that we face a proliferated future with eyes wide open.

The current distribution of power is not perfectly multipolar. The US still commands the world’s largest economy, and its military power is unrivaled by any state or combination of states. Its population is still growing, despite a recent decline in birth rates. It enjoys extraordinary geographic advantages over its rivals, who are distant and live in far worse neighborhoods. Its economy is less dependent on foreign markets or resources. Its political system has proven—up to now—to be resilient and adaptable. Its global alliance system greatly extends its capacity to defend itself and shape the world to its liking and is still intact, despite growing doubts about America’s reliability as a security guarantor. Based on these mostly material and historical criteria, continued American primacy would seem to be a good bet, if it chooses to use its power in this way.30

So why multipolarity? The clearest and most frequently cited evidence for a widening distribution of global power away from American unipolarity is the narrowing gap in GDP between the US and China. The IMF’s World Economic Outlook forecasts a $0.9 trillion increase in US GDP for 2019–2020, and a $1.3 trillion increase for China in the same period.31 Many who support the American primacy case argue that GDP is an imperfect measure of power, that Chinese GDP data is inflated, that its growth rates are in decline while Chinese debt is rapidly increasing, and that China does poorly on other factors that contribute to power—its low per capita GDP, its political succession challenges, its environmental crisis, its absence of any external alliance system. Yet GDP is a good place to start, as the single most useful measure and long-term predictor of power. It is from the overall economy that states extract and apply material power to leverage desired behavior from other states. It is true that robust future Chinese growth is not guaranteed, nor is its capacity to convert its wealth to power, which is a function of how well its political system works over time. But this is equally the case for the US, and considering recent political developments is not a given for either country.

As an alternative to measuring inputs—economic size, political legitimacy, technological innovation, population growth—in assessing relative power and the nature of global power distribution, we should consider outputs: what are states doing with their power? The input measures are useful, possibly predictive, but are usually deployed in the course of making a foreign policy argument, sometimes on behalf of a reassertion of American primacy, sometimes on behalf of retrenchment. As such, their objectivity (despite their generous deployment of “data”) is open to question. What is undeniable, to any clear-eyed observer, is a real decline in American influence in the world, and a rise in the influence of other powers, which predates the Trump administration but has accelerated into America’s free fall over the last four years. This has produced a de facto multipolarity, whether explainable in the various measures of power—actual and latent—or not. This decline results in part from policy mistakes: a reckless squandering of material power and legitimacy in Iraq, an overabundance of caution in Syria, and now pure impulsivity. But more fundamentally, it is a product of relative decline in American capacity—political and economic—to which American leadership is adjusting haphazardly, but in the direction of retrenchment/restraint. It is highly revealing that the last two American presidents, polar opposites in intellect, temperament and values, agreed on one fundamental point: the US is overextended, and needs to retrench. The fact that neither Obama nor Trump (up to this point in his presidency) believed they had the power at their disposal to do anything else, tells us far more about the future of American power and policy—and about the emerging shape of international relations—than the power measures and comparisons made by foreign policy advocates.

Observation of recent trends in US versus Russian relative influence prompts another question: do we understand the emerging characteristics of power? Rigorously measuring and comparing the wrong parameters will get us nowhere at best and mislead us into misguided policies at worst. How often have we heard, with puzzlement, that Putin punches far above his weight? Could it be that we misunderstand what constitutes “weight” in the contemporary and emerging world? Putin may be on a high wire, and bound to come crashing down; but the fact is that Russian influence, leveraging sophisticated communications/social media/influence operations, a strong military, an agile (Putin-dominated) decision process, and taking advantage of the egregious mistakes by the West, has been advancing for over a decade, shows no sign of slowing down, and has created additional opportunities for itself in the Middle East, Europe, Asia, Latin America, the Arctic. It has done this with an economy roughly the size of Italy’s. There are few signs of a domestic political challenge to Putin. His external opponents are in disarray, and Russia’s main adversary is politically disabled from confronting the problem. He has established Russia as the Middle East power broker. He has reached into the internal politics of his Western adversaries and influenced their leadership choices. He has invaded and absorbed the territory of neighboring states. His actions have produced deep divisions within NATO. Again, simple observation suggests multipolarity in fact, and a full explanation for this power shift awaiting future historians able to look with more objectivity at twenty-first-century elements of power.

When that history is written, surely it will emphasize the extraordinary polarization in American politics. Was multipolarity a case of others finding leverage in new sources of power, or the US underutilizing its own? The material measures suggest sufficient capacity for sustained American primacy, but with this latent capacity unavailable (as perceived, I believe correctly, by political leadership) by virtue of weakening institutions: two major parties in separate universes; a winnertake-all political mentality; deep polarization between the parties’ popular bases of support; divided government, with the Presidency and the Congress often in separate and antagonistic hands; diminishing trust in the permanent government, and in the knowledge it brings to important decisions, and deepening distrust between the intelligence community and policymakers; and, in Trump’s case, a chaotic policy process that lacks any strategic reference points, mis-communicates the Administration’s intentions, and has proven incapable of sustained, coherent diplomacy on behalf of any explicit and consistent set of policy goals.

Rising Nationalism/Populism/Authoritarianism

The evidence for these trends is clear. Freedom House, the go-to authority on the state of global democracy, just published its annual assessment for 2020, and recorded the fourteenth consecutive year of global democratic decline and advancing authoritarianism. This dramatic deterioration includes both a weakening in democratic practice within states still deemed on balance democratic, and a shift from weak democracies to authoritarianism in others. Commitment to democratic norms and practices—freedom of speech and of the press, independent judiciaries, protection of minority rights—is in decline. The decline is evident across the global system and encompasses all major powers, from India and China, to Europe, to the US. Right-wing populist parties have assumed power, or constitute a politically significant minority, in a lengthening list of democratic states, including both new (Hungary, Poland) and established (India, the US, the UK) democracies. Nationalism, frequently dismissed by liberal globalization advocates as a weak force when confronted by market democracies’ presumed inherent superiority, has experienced a resurgence in Russia, China, the Middle East, and at home. Given the breadth and depth of right-wing populism, the raw power that promotes it—mainly Russian and American—and the disarray of its liberal opponents, this factor will weigh heavily on the future.

The major factors contributing to right-wing populism and its global spread is the subject of much discussion.32 The most straightforward explanation is rising inequality and diminished intergenerational mobility, particularly in developed countries whose labor-intensive manufacturing has been hit hardest by the globalization of capital combined with the immobility of labor. Jobs, wages, economic security, a reasonable hope that one’s offspring has a shot at a better life than one’s own, the erosion of social capital within economically marginalized communities, government failure to provide a decent safety net and job retraining for those battered by globalization: all have contributed to a sense of desperation and raw anger in the hollowed-out communities of formerly prosperous industrial areas. The declining life expectancy numbers33 tell a story of immiseration: drug addition, suicide, poor health care, and gun violence. The political expression of such conditions of life should not be surprising. Simple, extremist “solutions” become irresistible. Sectarian, racial, regional divides are strengthened, and exclusive identities are sharpened. Political entrepreneurs offering to blow up the system blamed for such conditions become credible. Those who are perceived as having benefited from the corrupt system—long-standing institutions of government, foreign countries and populations, immigrants, minorities getting a “free ride,” elites—become targets of recrimination and violence. The simple solutions of course, don’t work, deepening the underlying crisis, but in the process politics is poisoned. If this sounds like the US, it should, but it also describes major European countries (the UK, France, Italy, Germany, Poland, Hungary, the Czech Republic), and could be an indication of things to come for non-Western democracies like India.

We have emphasized throughout this chapter the interaction of four structural forces in shaping the future, and this interaction is evident here as well. Is it merely coincidence that the period of democratic decline documented by Freedom House, coincides precisely with the global financial and economic crisis? Lower growth, increasing joblessness, wage stagnation, superimposed on longer-term widening of inequality and declining mobility, constitute a forbidding stress test for democratic systems, and many continue to fail. And if we are correct about secular stagnation, the stress will continue, and authoritarianism’s fourteen-year run will not be over for some time. The antidemocratic trend will gain additional impetus from the illiberal direction of globalization, with its growth suppressing protectionism, weaponization of global economic exchange, and weakening global economic institutions. Multipolarity also contributes, in several ways. The former hegemon and author of globalization’s liberal structure has lost its appetite, and arguably its capacity, for leadership, and indeed has become part of the problem, succumbing to and promoting the global right-wing populist surge. It is suffering an unprecedented decline in life expectancy, and recently a decline in the birth rate, signaling a degree of rot commonly associated with a collapsing Soviet Union. While American politics may once again cohere around its liberal values and interests, the time when American leadership had the self-confidence to shape the global system in its liberal image is gone. It may build coalitions of the like-minded to launch liberal projects, but there will be too much power outside these coalitions to permit liberal globalization of the sort imagined at the end of the Cold War. In multipolarity, the values around which global politics revolve will reflect the diversity of major powers, their interests, and the norms they embrace. Convergence of norms, practices, policies is out of the question. Global collective action, even in the face of global crises, will be a long shot. To expect anything else is fantasy

Unbrave New World and Future Challenges

At the outset of this chapter we described these structural forces as interacting to produce more conflict and diminished prosperity. We also predicted a world with shrinking collective capacity to address new challenges as they arise. What specifically will such a world look like? We address below three principal challenges to global problem solving over the next decade.

Interstate Conflict

In the world experienced by most readers of this volume, conflict is observed within weak states, sometimes promoted by regional competitors, by terrorist groups, or by great powers, acting through surrogates or by indirect means. Sometimes, as in Syria, this conflict spills over to contiguous states and contributes to regional instability, and challenges other regions to respond effectively, a challenge that Europe has not met. Much of this will continue, but the global significance of such local conflicts will be greatly magnified by increasing great power conflict, which will feed—rather than manage or resolve—local instabilities and will in turn be exacerbated by them. Great powers will jockey for advantage, support their local partners, escalate preemptively. Conflicts initially confined to failing states or unstable regions will be redefined by great powers as global in scope and significance.

This tendency of states to view local conflicts in the context of a zero-sum, global struggle for power is familiar to students of the Cold War, but now with the additional challenges to collective action, expanded uncertainty and worst-case thinking associated with the power transition to multipolarity. We can easily observe increased conflict in US–China relations, as we will in US–Russia relations as future US administrations try to make up for ground lost during the Trump presidency, especially in the Middle East. We can observe it among powerful states with mutual historical grievances, now with a weakening presence of the hegemonic security guarantor and having to consider the renationalization of their defense: Japan-South Korea, Germany-France. We can observe it among historical rivals operating in rapidly changing security landscapes: India-China. We can observe it within the Middle East, as internal rivalries are appropriated by regional powers in a contest for regional dominance. We can observe it clearly in Syria, where the regime’s violent suppression of Arab Spring resistance led to all-out civil war, attracted outside support to proxy forces by aspiring regional hegemons Saudi Arabia and Iran, enabled the rise of ISIS, and eventually to great power intervention, principally by Russia. In a world of effective great power collaboration or American primacy, the Syrian civil war might have been settled through power sharing or partition, or if not, contained within Syria. The collapse of Yugoslavia, occurring during a period of US “unipolarity” and managed effectively, demonstrates the possibilities. Instead, with the US retrenching, Middle East rivals unconstrained by great powers, and great power competition rising, the Syria civil war was fed by outside powers, then metastasized into the region, and—in the form of refugee flows—into Europe, fundamentally altering European politics. Libya may be at the early stages of this scenario.

This is not the end of the Syria story. Russia has established itself as a major player in Syria and the Middle East’s power broker, the indispensable country with leverage throughout the region. China is poised to reap the financial and power benefits of Syrian reconstruction. The US has just demonstrated, in its act of war against the Iranian regime, its willingness, without consultation, to put its allies’ security in further jeopardy, accentuating the risks of security ties with Washington and generating added opportunities for Russia and China. The purpose here is not to critique US policy, but to point out the dramatically shifting power balance in a critical region, toward multipolarity. The dangers of such a shift will become apparent as some future US president attempts to reassert US influence in the region and finds a crowded playing field.

Can a multipolar distribution of power among several states whose interests, values, and political practices are divergent, all experiencing bottom-up nationalist pressures, all seeking advantages in the oversupply of regional instability, be made to work? I think not. Will this more dangerous world descend into direct military confrontation between great powers, and could such confrontation lead to use of nuclear weapons? Here the question becomes, what will this more dangerous world actually look like; what instruments of coercion will be available to states as technology change accelerates; how will states employ these instruments; how will deterrence work (if at all) among several states with large but unequal levels of destructive capacity, weak command, and control, disparate— or opaque—strategies and simmering rivalries; can conflict management work in a world of weak institutions? The collapse of the Cold War era nuclear arms control regime, the threat to the Non-Proliferation Treaty represented by the demise of the JCPOA, and multiple indications of an accelerating nuclear arms race among the three principle powers, augurs badly. Given the structural forces at play, and without predicting the worst, we are indeed entering perilous times.

Global Poverty and Inequality

Despite the challenges of volatility and disruptive change inherent in globalization, the world under American liberal leadership has managed a dramatic reduction of extreme poverty. According to World Bank estimates, in 2015, 10 percent of the world’s population lived on less than $1.90 a day, down from nearly 36 percent in 1990.34 In fact, as of September 2018, half the world is now middle class or wealthier.35 The uneven success of the UN Millennium Development Goals (MDGs) exemplifies this achievement, and demonstrates what is possible when open markets are managed through strong global institutions, effective leadership and interstate collaboration. What this liberal hegemonic system did not achieve, however, was a fair distribution of the gains from globalization within states, and among those states that for various reasons were not full participants in this system.

This record of partial achievement leaves us with a full agenda for the next fifteen years, but without the hegemonic leadership, strong institutions, ascendant liberalism or robust global growth that enabled previous gains. There are powerful reasons to question the sustainability of these poverty reduction gains, leading to doubts about the realization of the Sustainable Development Goals, which have replaced the MDGs as global development targets.36 (See Jens Rudbeck’s chapter and Sidhu’s UN chapter for SDGs). Skeptics have pointed to slowing global growth, specifically in China, whose demand for imported commodities was a major factor in developing country growth and job creation; growing protectionism in developed country markets, fueled by bottom-up forces of nationalism, and from top-down by a weakened global trading regime and increased geopolitical rivalry; the effects of accelerating climate change on agriculture, migration and communal conflict in poor countries; and the growth burst among poor countries from the rapid transition to more efficient use of resources, a transition that is now slowing down.37

Perhaps the greatest concern in this scenario is a general deterioration in the developing country foreign investment climate. Foreign direct investment (FDI) has been a major contributor to growth, job creation, and poverty alleviation among poor countries. It has incentivized growthfriendly policies, reduced corruption, introduced technology and effective management practices, and linked poor countries to foreign markets through global supply chains.38 It has stimulated growth of indigenous manufacturing and service companies to supply new foreign investments.

It has been the major cause of economic convergence between rich and poor countries. From 2000 to 2009, developing economies’ growth rates were more than four percentage points higher than those of rich countries, pushing their share of global output from just over a third to nearly half.39 However, FDI flows into poor countries are imperiled by the structural forces discussed here. Political instability arising from slower growth and environmental stress will increase investors’ perception of higher risk, reinforcing their developed country bias. Protectionism among developed countries will threaten the global market access upon which manufacturing investment in developing countries is premised, causing firms to pare back their global supply chains. As companies retrench from direct investment in poor countries, the appeal to those countries of Chinese debt financed infrastructure projects, under the Belt-Road Initiative with little or no conditionality, but at the risk of “debt traps,” will increase.

Global Warming

The question posed at the beginning of this section is whether the international system, evolving toward multipolarity and rising nationalism, will find the collective political capital to confront challenges as they arise. Global warming is the mother of all challenges, and the weakness in the system’s capacity to respond is clear. With the two major political/economic powers and greenhouse gas emitters locked in deepening geopolitical conflict (and with one of them locked in climate change denial, possibly through 2024), the chances of significantly slowing global warming or even ameliorating its effects are very slim. We are reduced to the default option, nation-specific adaptation to climate change, which will impose rising human, political and economic costs on all, and will widen the gap between rich countries with adaptive capacity (of varying degrees), and the poor, who will suffer deteriorating economic, political, and social conditions. (For a contrary, optimistic view see Michael Shank’s chapter, which credits new actors—like cities—as playing a more constructive role in climate mitigation.) This would bring to a close liberal globalization’s greatest achievement; the raising of 1.1 billion people out of extreme poverty since 1990,40 with all its associated gains in quality of life (in the WHO Africa region, for example, life expectancy rose by 10.3 years between 2000 and 2016, driven mainly by improvements in child survival and expanded access to antiretrovirals for treatment of HIV).41

Several forces are at work here. The problem itself is graver—in magnitude and in rate of worsening—than predicted by climate scientists. The UN Intergovernmental Panel on Climate Change (IPCC), the major source of information on global warming, has consistently underpredicted the rate of climate deterioration. This holds true even for its “worst-case scenarios,” meaning that what was meant as a wake-up call has in fact reinforced complacency.42 (see Michael Shank’s chapter for further discussion of climate change). The IPCC, in its 2019 report, has tried to undo the damage by emphasizing the acceleration in the rate of warming and its effects, the only partially understood dynamic of climate change, and—given wide uncertainty—the possibility of unpleasant surprises yet to come. This strengthens the scientific case for urgency—to both severely limit greenhouse gas emissions, and to increase investment in ameliorating the effects.

Unfortunately, the crisis comes at a moment when the climate for collective action is ice cold. Geopolitical competition incentivizes states to out produce each other, regardless of the environmental effects. Multipolarity complicates collective action. Economic stagnation mandates job creation, making regulation politically toxic. Bottom-up nationalism/populism causes states to pursue “relative gains,” meaning that if the nation is seen as gaining in a no-holds-barred economic competition with others, the negative environmental effects can be tolerated. A post-Trump presidency would help, with the US rejoining the Paris Agreement, and lending its weight to tighter regulation, increased R and D, and stronger economic incentives to reduce carbon emissions. Keep in mind, however, that President Obama was fully behind such efforts, but in a deeply polarized America was unable to implement measures needed to fulfill the Paris obligations through legislation, and his executive orders to do this were swiftly overturned by Trump.

Conclusion

It may be tempting to hope that post-Trump, the US can regain its global leadership and exert its considerable power in a liberal direction, but with enough self-awareness of its relative decline to share responsibility with others. This was, I believe, the broad direction of the Obama strategy, evidenced by the JCPOA and the Trans-Pacific Partnership: liberal, collective solutions to global problems, as US dominance receded.

This would constitute an optimistic scenario, and it confronts two major problems: can US internal politics support it (can, for example, the country legislate controls on carbon, essential for the global credibility and durability of such commitments); and is the world ready to reengage with American leadership, given the damage to its reputation and the structural forces discussed in this chapter?

My educated guess is no, on both counts. The rot within is extensive, the concrete evidence clear in the economic inequality/immobility numbers, the life expectancy numbers, the deep political polarization, between the two major parties, between regions, between cities and rural areas. We are in fact a long way from fitness for global leadership, and the recognition of this by others will accelerate the decline of American influence. The rest of the world is well on its way toward adjusting to post-American hegemony, some by renationalizing their defense, or by cutting deals with adversaries, by building new alliances or by seizing new opportunities for influence in the vacuum left by American retrenchment. The evidence for this will accumulate. Observe the current and emerging Middle East, where all these post-hegemonic strategies are visible.

#### Price hikes are inevitable due to electricity market structures – only competition solves long run price declines and creates the incentive for new entry investment

GÜNDÜZ 16 [Hale, Competition Expert @ The Turkish Competition Authority. “Antitrust Policy and Regulatory Interventions In The US Electricity Industry”. Competition Journal / Rekabet Dergisi . Jun2016, Vol. 17 Issue 1, p98-125. 28p.]

Although the generation stage of the industry is not considered as a natural monopoly anymore, there are factors that prevent free market conditions to prevail and the need of government intervention arises: market failures. If the free market fails to allocate resources in an optimum and efficient manner, market failures can occur. Main sources of market failures are imperfect competition (as opposed to perfect competition), externalities, public goods, and information asymmetries. “When a market failure occurs, there is a potential rationale for government intervention and regulation, in theory, may be able to raise social welfare67”.

As one of the reasons of market failures, imperfect competition occurs where there are firms that have ability to control the price. Ability to control the price generally refers to the market power, which prevents the maximization of social welfare since the Pareto optimality cannot be achieved.

In this context, electricity generation market is more susceptible to exercise of market power, which played a very significant role in California debacle68, in comparison to other markets due to some characteristics of the industry69. Firstly, capacity withholding can have huge impact on price due to very inelastic demand of electricity70. Secondly, congestion in transmission network can temporarily divide geographic markets and give local generators significant market power71. Thirdly, the facts that electricity cannot be stored, and that supply and demand have to be balanced simultaneously imply that inter-temporal supply substitutability cannot constrain attempts to exercise market power72. “For industries in which the good is storable, inventories greatly reduce inter-temporal supply variation, and possibly, demand variation73”.

As a result, electricity generators can have substantial market power and exercise it by withholding capacity, either in the form of physical or economic withholding, or artificially boosting prices. Thus market price rise above the competitive level and a wealth transfer occurs from consumers to producers. In addition, the price that is over marginal costs creates loss in social welfare and gives rise to allocative inefficiency. Moreover, exercise of market power can lead to productive inefficiency by inducing substitution of higher-cost for lower-cost generating units in the short-run, or entry of inefficient generation units in the medium and longrun74. “Market power distorts short-term production and consumption decisions and, in the longer term induces inefficient investment decisions and hence leads to dynamic inefficiency75”. In sum, exercise of market power reduces performance of the market significantly.

This vulnerability of electricity markets to market power forms the basis of government intervention in the form of regulation. In the U.S., the Federal Energy Regulatory Commission (FERC) has legislative authority to establish rates for wholesale electricity sales that are “just and reasonable”76. In this regard, if a generating firm proves that it lacks market power and has not erected entry barriers, it obtains “market-based rate authority” and hence will not be subjected to traditional cost-of service regulation77

“It should be noted that there is also a role for regulation in responding to other types of market failures like externalities78.” “An externality occurs when a consumer or firm is affected by the consumption or activity of other agents in the economy”79, i.e. pollution, which constitutes a basis for a government intervention. “When an externality is present, perfect competition does not result in an optimal allocation of resources80”. Since power plants are a major source of pollution, regulations to prevent environmental pollution have also become important factor in electricity generation81.

Therefore “cap and trade” policy, the objective of which is to create economic incentive for firms to choose the most efficient and least costly method in reducing their pollution while stimulating innovation to develop less polluting plants, is introduced 82. As a result of this policy, it is expected that the activity generating a negative externality can result in a socially preferred allocation of resources83 and hence increase the overall performance of the market.

As to the transmission of electricity market, it is generally considered to be a natural monopoly since the productive efficiency is achieved only when a single firm produces84. However, the objective of a single firm is to maximize its profit and it sets the price above its cost which leads to allocative inefficiency. If many firms are allowed to compete to lower the price and to achieve allocative efficiency, then productive inefficiency will emerge since there are too many firms producing. Thus the basis for government intervention emerges for natural monopolies85.

Accordingly, “price and entry regulation may allow both allocative and productive efficiency in the case of a natural monopoly. Entry regulation permits only one firm to produce (as required for productive efficiency), whereas price regulation restricts the firm to set the socially optimal price (as required for allocative efficiency)86”. In this regard, the FERC has legislative authority to regulate the pricing of wholesale transmission transactions to ensure that they are “just and reasonable”87. This price regulation of transmission takes several forms88 and in case of congestion “mitigation” procedure can be invoked in order to cap the maximum price89.

One of the key decision of the FERC to guide transmission regulation90 is Order 888, which requires owners of transmission networks to provide open and nondiscriminatory access to its transmission network91. This order affects not only the conduct in the market but also the market structure by removing an absolute barrier to entry which is an element of market structure92. If entry barriers become lower, it is more difficult to exert market power and increase the price without attracting new entry. Therefore we can predict that the concentration rates would decrease by the entry of new rivals, which would alter conduct and ultimately performance of the industry. Furthermore, it also removes a market failure, namely discrimination, which leads to a loss in the efficiency/ social surplus93. Thus the performance of the industry can be presumed to improve94.

#### Filed rate encourages strategic manipulation of regulatory agencies and over-disclosure of ambiguous ex ante terms and conditions that makes antitrust impossible

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.

# 2AC 2

## A1

### 2AC – AT: Circ

#### Strong congressional text writing solves court circumvention

Baer 20 [Bill Baer, American lawyer who served as the Assistant Attorney General for the United States Department of Justice Antitrust Division. Jonathan B. Baker Michael Kades, Fiona M. Scott Morton, Nancy L. Rose, Carl Shapiro, Tim Wu. “Restoring competition in the United States”. 11/19/20. https://equitablegrowth.org/research-paper/restoring-competition-in-the-united-states/?longform=true]

Congress need not passively accept today’s cramped interpretation of the antitrust laws. It should once again reassert its commitment to competition by updating our antitrust laws and directing the courts to better protect competition, consumers, and workers. Legislation allows Congress to make broad policy judgments about what the antitrust laws should prohibit and the best legal rules for achieving those results.

Meaningful antitrust reform should be a priority of the next administration and the 117th U.S. Congress. The challenge of drafting legislation is substantial. On the one hand, the legislation must be written for a judiciary that is both increasingly hostile to antitrust claims in general and increasingly textualist in its statutory interpretation. On the other hand, in the context of the antitrust laws, courts have often “abandoned statutory textualism” to interpret the laws “in favor of big business,”15 explains Daniel Crane, the Fredrick Paul Furth Sr. professor of law at the University of Michigan Law School. If given discretion to interpret new legislation, the current judiciary is likely to fall back on the same skepticism of antitrust enforcement that it has advanced over the past 40 years.

Despite those concerns, legislation remains the best option to revitalizing antitrust enforcement. In drafting legislation, Congress can learn from the past. One case in point: The legislative history of the Celler-Kefauver bill, not its text, reveals the bill’s intent, which courts increasingly ignore.16 Congress can reduce that risk by being explicit in the text when vacating or rejecting existing precedent and when identifying relevant factors, such as the importance of protecting both actual and potential competition. Congress should identify in statute the elements sufficient to establish an antitrust violation as precisely as possible.

In particular, Congress should specify the circumstances under which the burden of proof switches from the plaintiff to the defendant and the evidence necessary to rebut presumptions of illegality once they are established, based on the underlying economics, the type of evidence available to the parties, and the respective risks of underenforcement and overenforcement. Because courts regularly apply burden shifting across many areas of the law, they will understand and respect its implications.17 Successful legislative reform would accomplish the following goals:

Correct flawed judicial rules that reflect unsound economic theories or unsupported empirical claims18

Clarify that the antitrust laws protect against competitive harms from the loss of potential and nascent competition, especially harms to innovation

Incorporate presumptions of illegality that better reflect the likelihood that certain practices harm competition

Recognize that under some circumstances conduct that creates a risk of substantial harm should be unlawful even if the harm cannot be shown to be more likely than not

Alter substantive legal standards and the allocation of pleading, production, and proof burdens to reduce barriers to demonstrating meritorious cases19

We are under no illusion about the difficulty in passing legislation, but it remains the best way to address deficiencies in the current application of our antitrust laws. And the time seems ripe for bipartisan support of this effort.

#### Courts will enforce the plan faithfully.

Charles S. Dameron 16, Yale Law School, J.D. 2015. "Present at Antitrust’s Creation: Consumer Welfare in the Sherman Act’s State Statutory Forerunners." https://www.yalelawjournal.org/note/present-at-antitrusts-creation-consumer-welfare-in-the-sherman-acts-state-statutory-forerunners

Notwithstanding occasional invocations of the judiciary’s “common law” authority over the Sherman Act, federal courts have, since the Act’s earliest days, expended great energy attempting to divine the legislative purpose behind it.5If the Sherman Act were truly a blanket grant of common law-making authority to federal courts, they would hardly need to undertake such searching inquiries. The Supreme Court’s and lower courts’ close attention to the Sherman Act’s language and legislative history indicates that they have sought to abide by their constitutional role as interpreters of federal statutes.6

It is therefore more precise to say that the judiciary enjoys an especially wide authority to fill statutory gaps when interpreting the Sherman Act due to the Act’s ambiguous language, its constancy over time, and the fact—peculiar in light of many modern regulatory regimes—that Congress did not assign rulemaking authority to an administrative agency. These traits do not imply that federal courts may pursue whatever antitrust policy they find most desirable or wise; courts are obliged to follow the statute’s contours to the extent that they can perceive those contours.7

## A2

### 2AC – AT: Econ DA

#### Econ down by every metric – only reducing inflation solves

Gura 1/18 [David, NPR Business Correspondent. “Inflation fears are sparking a big drop in markets. Here are 3 things to know”. 1/18/22. https://www.npr.org/2022/01/18/1073797789/inflation-omicron-big-plunge-markets-stocks-bonds]

It's been a rough start of the year for Wall Street – and it keeps getting worse.

Concerns about surging inflation are keeping investors on edge, sending stocks sharply lower on Tuesday. The Federal Reserve has projected it will raise interest rates three times this year, which could raise borrowing costs across the economy, including for mortgages and car loans.

But investors fear the Fed will need to be even more aggressive given how stubborn inflation has been. Consumer prices surged 7% in December, the biggest annual increase since 1982.

Many analysts now believe the Federal Reserve will start raising interest rates in March and that the central bank may need to raise them four times this year.

As a result, bond markets have sold off and stocks have tumbled since the start of the year, with the Nasdaq down nearly 7% so far in 2022 as of early afternoon on Tuesday.

Here are three things to know about the turmoil in markets.

The sell-off in stocks is being led by the bond markets, which have tumbled this year given that inflation can erode how much money investors make on their trades.

When bond prices fall, their yields rise. That can have an impact on all of us because bond rates help determine all kinds of interest we pay on on things like credit cards, or for car and home loans. The average rate on a 30-year fixed-rate mortgage hit its highest since March 2020.

That sell-off in bonds, with yields now at two-year highs, has spooked stock investors as well. Investors are bracing for an aggressive response by the Fed to fight inflation, but there's still a lot of uncertainty about what the central bank will do – and what the consequences will be.

Federal Reserve Chairman Jerome Powell initially suggested inflation would be short-lived or "transitory," but in recent months, he has acknowledged it has been "more persistent" than he first expected.

"All of that has created some uncertainty in the marketplace," says Julian Emanuel, Evercore ISI's chief equity, derivatives, and quantitative strategist.

Federal Reserve Chairman Jerome Powell speaks during his re-nomination hearing in front of the Senate Banking Committee on Jan. 11. Powell has toughened his rhetoric on inflation, which has proven more stubborn than the Fed had initially anticipated.

Brendan Smialowski/POOL/AFP via Getty Images

What sectors have been hit hardest?

So far this year, tech companies have been among the biggest losers. Tech companies typically need fast-growing economies to do well, whereas investors are expecting the Fed to try to slow down the economy with interest rate increases in order to curb inflation.

Higher interest rates also make certain companies such as technology less attractive to investors because the highest borrowing costs can reduce future profits.

Apple, Amazon, Microsoft, Alphabet, the parent company of Google, and Meta, which owns Facebook, are each down more than 5% so far this year.

The "consumer discretionary" sector is also hurting, as uncertainty surrounding the spread of the omicron variant is raising concerns that people will stop buying what are considered non-essential goods and services, such as cars or meals at restaurants.

Toilet paper and paper towels shelves are mainly empty at a supermarket in Miami Beach, Fl., on Jan. 13. Staffing shortages tied to the omicron variant and continued supply chain disruptions have led to shortages of some goods at many supermarkets.

Chandan Khanna/AFP via Getty Images

So what's the outlook for markets?

Things could stay volatile for a while. Investors will pay close attention to the Fed's meeting next week, hoping to gain additional insight into their thinking.

Companies are also starting to report their earnings results for the last three months of 2021 and investors are keen to see how a slew of events, including omicron, inflation, supply chain disruptions, and labor shortages, impacted companies.

In recent days, shares in some of the big banks including JPMorgan Chase, Citigroup and Goldman Sachs have fallen after they reported weaker-than-expected results.

The omicron surge may be starting to peak in some parts of the U.S.

HEALTH

The omicron surge may be starting to peak in some parts of the U.S.

In its earnings results, Goldman said its operating expenses were higher, thanks in part to "significantly higher compensation and benefits expenses." Like many firms dealing with a tight jobs market, the bank has had to pay more to keep its top talent from leaving.

Evercore ISI's Emanuel believes 2022 is going to be a year when Wall Street will have to look at each company individually, to see how it manages continued uncertainty and to ask sharp questions about expenses and cost controls.

But overall, how the year shapes up for markets will likely be determined by how successful the Fed is at bringing down inflation, and how COVID impacts the economy.

#### Tons of antitrust now and coming

Jon Swartz 12-28, Senior Reporter for MarketWatch, “Big Tech Heads for ‘A Year of Thousands of Tiny Tech Papercuts,’ But What Antitrust Efforts Could Make Them Bleed?”, MarketWatch, 12/28/2021, https://www.marketwatch.com/story/big-tech-heads-for-a-year-of-thousands-of-tiny-tech-papercuts-but-what-antitrust-efforts-could-make-them-bleed-11640640776

Antitrust enforcement of Big Tech is expected to take place on a scale never before seen in 2022, following years of escalating rhetoric from Washington.

So far, Wall Street has shrugged as the five companies under the microscope — Google parent Alphabet Inc. GOOGL, -0.92% GOOG, -0.91%, Facebook parent Meta Platforms Inc. FB, -2.33%, Apple Inc. AAPL, -0.35%, Amazon.com Inc. AMZN, -1.14%, and, yes, Microsoft Corp. MSFT, -0.88% — have been targeted by governments and rivals across the globe. Despite a steady drumbeat of negative headlines, tech’s quintet of heavy hitters boasted a cumulative market value of nearly $10 trillion as 2021 neared an end, after producing a collective $2.4 trillion in revenue over the past two years of pandemic misery.

The stock prices of tech companies have only been “minorly impacted because investors do not tend to make decisions based on the mere possibility of legislation,” Ashley Baker, director of public policy at the Committee for Justice, told MarketWatch.

Many investors have simply looked back on history and shrugged, according to one Silicon Valley venture capitalist.

“There is more antitrust noise, but investment people remember the Microsoft and IBM IBM, -0.19% [antitrust investigations] in which waves of innovation followed those investigations and proved they did not own the industry,” Alexandra Sasha Johnson, president of Global Tech Symposium, a Silicon Valley investment conference, told MarketWatch. “Until the Big Tech companies buy each other, this is not a problem.”

For more: Big Tech was built by the same type of antitrust actions that could now tear it down

NOW PLAYING:

‘Absolutely Devastating’: Colorado Wildfire Destroys Hundreds of Homes, Businesses

Visit our Video Center

This could finally change in 2022 as it did in the late 1990s, when some tech companies struck a cautious stance during the Justice Department’s investigation of Microsoft for monopolistic practices, Syed said.

“The difference is that we’re talking about interconnected companies that own an industry versus just one company [with Microsoft],” she said. “And there is bipartisan support, which makes it easier politically.”

More on the antitrust challenges facing Big Tech in 2022

Amazon has mostly avoided antitrust scrutiny, but that may change in 2022

Possible Justice Department lawsuit looms over Apple, which is facing scrutiny worldwide

Google enters 2022 battling antitrust actions on multiple fronts — with more likely to come

Facebook’s acquisitions of Instagram and WhatsApp are antitrust targets, but its metaverse mergers may be the victims

Microsoft has avoided U.S. antitrust scrutiny, but Europe is a different matter

With more than a dozen pieces of anti-tech legislation, a plethora of lawsuits and regulatory fines escalating in the U.S. and abroad, as well as the Biden administration rounding out Big Tech’s nightmare team of government agency heads, 2022 is shaping up as a seminal year for tech regulation after decades of inaction.

In rapid succession this year, Biden named and nominated an antitrust team of Tim Wu (to the newly created position of head of competition policy at the National Economic Council), Lina Khan (chair of the Federal Trade Commission) and Jonathan Kanter (head of the antitrust division of the Justice Department). Each is a heralded anti-monopolist advocate who has written extensively on the topic or represented companies making antitrust claims against Big Tech.

The trio have been referred to as members of a “New Brandeis movement,” named after Supreme Court Justice Louis Brandeis, whose decisions limited the power of big business in the early 20th century. With the New Brandeis trifecta in place, and Congress evaluating more than dozen possible anti-tech bills, next year is “shaping up to be the year of Tech Takedown,” Bhaskar Chakravorti, dean of global business at the Fletcher School at Tufts University, told MarketWatch.

More troubling for tech CEOs, he said, are the “many tiny actions at the FTC, Justice Department and Congress that will continue to keep feeding the news cycles with a steady stream of actions” that add up to a “a year of thousands of tiny tech papercuts.”

Big Tech’s treacherous path to antitrust enforcement has three potentially damaging roads: federal agencies challenging acquisitions and mergers; legislation tailored to stimulate competition and curtail the influence of tech’s dominant platforms; and federal and state lawsuits.

Closer scrutiny of M&A activity

The biggest immediate impact from the Biden administration’s all-out assault could be a cooling-off period of frenzied mergers and acquisitions by the biggest players. Regulators have been empowered with examining past deals and more strenuously inspecting tech’s latest purchases.

Major movement is already happening on the M&A front because, as lawyers and executives told MarketWatch, the FTC and Justice Department have new leadership empowered to more closely review and approve mergers while they await legislation and court actions. A non-binding presidential executive order largely seen as aimed at Big Tech announced a policy of greater scrutiny of mergers over the summer, and the FTC and Justice Department each would receive $500 million in new funding to boost staff working on antitrust enforcement as part of the House-passed reconciliation bill awaiting Senate action.

The FTC is signaling greater oversight over deals, requiring affirmative consent on certain transactions, which may prolong uncertainty on merger agreements. The agency has already sued to block the largest semiconductor deal ever — Nvidia Corp.’s NVDA, -0.59% proposed $40 billion acquisition of U.K.-based chip-design provider Arm Ltd., saying the deal would “distort Arm’s incentives in chip markets and allow the combined firm to unfairly undermine Nvidia’s rivals.”

Another FTC antitrust probe, into Meta’s plan to acquire VR fitness app Supernatural for $400 million, is underway, according to a report by The Information.

The Justice Department’s direction is less clear at this point, but signals from Kanter’s confirmation hearing point to “vigorous enforcement” of antitrust laws.

“Personnel is policy. With the trifecta of Khan, Kanter and Wu, there is a new sheriff in town,” Luther Lowe, senior vice president of public policy at Yelp Inc. YELP, -0.66%, told MarketWatch. “Efforts by Amazon and Facebook to recuse Khan, and Google’s attempt to recuse Kanter, is like arsonists asking for firefighters to be removed from a fire.”

#### Not key to growth

Cameron Bagrie 18, Managing Director of Bagrie Economics, “Business confidence is a hopeless indicator. But that doesn't mean the economy isn't in trouble,” Spinoff, 8-9-2018, https://thespinoff.co.nz/business/09-08-2018/business-confidence-is-bullshit-but-that-doesnt-mean-the-economy-isnt-in-trouble/

The good news is that business confidence is hopeless as an economic indicator. The correlation with economic growth is poor and I largely ignore business confidence readings. Changes in direction can provide some insightful information – whether things are picking up or slowing down, but not the levels.

Businesses tend to be more upbeat regarding general confidence about the economy under a blue flag as opposed to a red one. Business confidence averaged minus 18 between 2000 and 2007. The economy (measured by real gross domestic product) grew on average by more than 3.5% per year. Yep, confidence was negative, but growth was positive. So, we ignore business confidence as an economic indicator. This is nothing new. It’s surprising headline business confidence figures receive so much attention

#### Expectations are sector-specific.

Jérémie Cohen-Setton & Martin Kessler 11, Cohen-Setton is a Research Fellow at the Peterson Institute for International Economics; Kessler has been a research analyst with the Peterson Institute since September 2011 and works with Senior Fellow Arvind Subramanian and Visiting Fellow C. Randall Henning, “The uncertainty hypothesis,” Bruegel, 10-6-2011, https://www.bruegel.org/2011/10/the-uncertainty-hypothesis/

In a recent NBER working paper, Ruediger Bachmann, Eric Sims, and Steffen Elstner found no evidence that changes in uncertainty cause a wait-and-see effect, defined as a large decline in economic activity when uncertainty hits followed later by fast rebounds. The economists used the Philadelphia Fed’s manufacturing survey since 1968 and the German Ifo business sentiment survey since 1980 and calculated uncertainty in various ways. Using as an indicator the divergence between prediction and real conjuncture, they conclude that uncertainty does not cause a wait-and-see impact on production and employment.

Policy and regulatory uncertainty

John Taylor makes the case against active interventionist policies. Stop all the interventions — the short-term discretionary fiscal stimulus packages and the massive quantitative easings and the operation twists of monetary policy. The unpredictability caused by these policies is causing uncertainty and holding the recovery back. Instead put in place more permanent reforms which will create economic recovery and return the economy to the kind of performance we saw in the 1980s and 1990s when rules-based, less interventionist policies were followed.

Robert Barro and Greg Mankiw argue that uncertainties on taxes and regulation reduce the returns of current investments. Mankiw points to the counterexample of the Reagan recovery in 1982, where non-residual fixed investment grew by 27% two years after the trough. As investment leads recoveries, taxes should be shifted to other bases to lower its cost. In a similar vein, Barro suggests establishing a VAT to lower the cost of capital.

Menzie Chinn, however, points that the “jobless recovery” does not seem to be an “investment-less recovery”: non-residential investment has rebounded faster than on average in other recessions (the Reagan recovery should be treated as a special case, precisely because of the particular macro and monetary environment at the time), whatever the metric used (from peak or from trough). The econometric relation between output and business investment is, if anything, more stable than in previous years.

Bruce Bartlett reports that, according to a BLS survey, the number of jobs involved mass lay-offs by companies citing new government regulations as a reason for is a mere 1% of the ones citing “lack of demand”. The number of small businesses reporting the regulatory environment as a problem is higher, but still accounts for less than half of the demand factor. Lawrence Michel, of the think tank EPI, adds that those concerns have always been high and roughly constant for small businesses, but that the lack of demand has suddenly risen as the main hurdle. Challenged by James Pethokoukis of the American Enterprise Institute, Michel further notes that investment in equipment and software during the 2009-2011 recovery has been more dynamic than in any of the four preceding ones.

Greg Ip argues regulations are sector-specific, and if they have an impact, it might be non-perceived at the macroeconomic level. They could also have a cost as part of a trade off (for example, in the case of the financial industry, a higher cost of capital against more financial stability).

## Conditions CP

### 2AC – FERC Conditions CP

#### Even expanded authority means ex ante fails – finishing rossi

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.

#### 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.

#### FERC gets circumvented

Peskoe 21 [Ari, Director of the Electricity Law Initiative at Harvard Law School. “IS THE UTILITY TRANSMISSION SYNDICATE FOREVER?”. 5/5/21. https://www.eba-net.org/assets/1/6/5\_-\_%5BPeskoe%5D%5B1-66%5D.pdf]

With states and Congress seemingly unwilling to oppose IOU dominance, FERC appears most likely to take further action. Yet, I acknowledge that IOUs will inevitably (and rationally) resist further FERC reforms designed to chip away at their transmission dominance. Efforts to dismantle the IOU transmission development “cartels”414 may be delayed through litigation and weakened through implementation. Recognizing the inevitability of IOU backlash, FERC might instead choose to rescind its competitive mandate and direct its reforms towards substantive outcomes, such as motivating more regional investment or incentivizing deployment of new technologies. In that vein, FERC might impose certain technical analyses in the planning process that will cause IOUs and RTOs to select the “right” projects415 or establish particular goals for regional plans to achieve, such as unlocking new resources or connecting regions. Rules that directly target substantive results may have the side-benefit of addressing IOU dominance by ensuring that projects that harm a particular IOU’s parochial interests are nonetheless developed, provided they meet FERC’s technical standards.

#### Gets struck down – their ev is hella old and got overturned

Morenoff 20 [David, Acting General Counsel @ FERC, Robert H. Solomon, Solicitor, Beth G. Pacella, Deputy Solicitor. “BRIEF OF RESPONDENT FEDERAL ENERGY REGULATORY COMMISSION in Oklahoma Gas vs FERC.” 9/25/20. https://www.ferc.gov/sites/default/files/2020-09/20-1062-Oklahoma.pdf]

This Court has explained that the “prohibition against retroactively charging rates that differ from those that were on file during the relevant time period yields in only two limited circumstances: (i) when a court invalidates the set rate as unlawful; and (ii) when the filed rate takes the form not of a number but of a formula that varies as the incorporated factors change over time.” Old Dominion, 892 F.3d at 1227 (citing West Deptford Energy, LLC v. FERC, 766 F.3d 10, 22-23 (D.C. Cir. 2014)). “The filed rate doctrine and the rule against retroactive ratemaking leave the Commission no discretion to waive the operation of a filed rate or to retroactively change or adjust a rate for good cause or for any other equitable considerations.” Id. at 1230.

#### 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.

#### Doesn’t allow flexible state regs – those are key to global ders adoption

William Boyd & Ann E. Carlson 16, Boyd is Professor and John H. Schultz Energy Law Fellow, University of Colorado Law School, and Fellow, Renewable and Sustainable Energy Institute; Carlson is Shirley Shapiro Professor of Environmental Law, UCLA School of Law, and Faculty Co- Director, Emmett Institute on Climate Change and the Environment, “Accidents of Federalism: Ratemaking and Policy Innovation in Public Utility Law,” UCLA Law Review, vol. 63, no. 4, 2016, pp. 810–893

Any serious effort to reduce greenhouse gas (GHG) emissions in the United States will require a dramatic transformation of the nation's electric power system. The electricity sector currently accounts for nearly a third of U.S. GHG emissions, the largest single source in the economy.' A decarbonized electric power system is also critical to reducing emissions from transportation, the nation's second largest source of GHG emissions, given the need to replace much of the existing fleet with electric vehicles.2 Put simply, decarbonizing the electric power sector is far and away the most important component of any effort to meet ambitious U.S. GHG reduction targets by 2050 and beyond.'

Transitioning to low-carbon electricity will require overhauling what has been called the most complex machine ever built.' We will need to see changes across the machine, from the sources of energy used to generate electricity, to the means of transmitting and distributing that electricity, to the way in which end users interact with the grid. Not only is the machine complex, but the regulatory system that governs it is multilayered, messy, complicated, and technical. Understanding and grappling with both the complexity of the machine and its regulatory overlay will not be easy.

Policymakers and legal academics have appropriately focused much of their attention to date on how the government can best reduce GHG emissions. Debates about whether to adopt a cap-and-trade system or a taxs or whether the U.S. EPA has legal authority to use various sections of the Clean Air Act6-including Section 111(d), the basis for the Clean Power Plan regulations for existing power plants7- are important and difficult ones. So are questions about the role of various policy instruments to promote re- newable energy, such as Renewable Portfolio Standards (RPSs) and tax cred- its.' But not enough attention has been given to the structure and practice of electricity regulation in the United States and the tools available under public utility law to promote decarbonization.'

Despite significant changes in the electricity sector over the past twenty years as the federal government has opened up wholesale electricity markets to competition and as some states have embraced retail competition, Public Utility Commissions (PUCs) and state public utility law more generally continue to play fundamental roles in determining basic features of our electricity system. In part, this is by design, but in part it is also by accident. Because the push to create competitive electricity markets never took complete hold across the country-a reflection of the commitment in the Federal Power Act" (FPA) to a strong state role in electricity regulation-states have enjoyed considerable leeway in deciding whether they will participate in wholesale and retail electricity markets, continue with the traditional model of utility regulation, or pursue a mix of the two. 2 Although the goal of electricity restructuring was to fully deregulate the sector, the result has been messier, with three basic models of electricity regulation emerging across the country: a filly restructured model that combines competition at wholesale and retail levels; a traditional model that con- tinues to employ the basic cost-of-service approach to regulating vertically inte- grated Investor Owned Utilities (IOUs); and a hybrid model that combines competitive wholesale markets with regulated retail service.13 Notwithstanding the introduction of wholesale and retail competition in a number of states, PUCs retain important power in designing and setting electricity rates under each of these regulatory models. It is this ratemaking power across a diverse group of states-and the role it can and is playing in developing a greener, nimbler, more distributed grid-that is the focus of this Article.

Our focus on electricity ratemaking and its role in decarbonizing the grid has several aims. First, we argue that the need for innovative ratemaking is crucial to promoting technological innovation and deployment in the power sector. 4 As the traditional distribution system shifts from a one-way network that provides power to end users to a multi-directional grid where some users generate their own electricity and feed excess power back to the grid, individual actors and tech- nologies are interacting with the system in new and dynamic ways. Still more change is occurring in response to the need for low- and zero-carbon generation, with policies aimed at producing more solar, wind, and nuclear power, and even new coal generation from plants equipped with the ability to capture and store carbon emissions. Making this greener grid a reality will require substantial new investments across all aspects of the machine. We will need innovation and investment in everything from generation to transmission to local distribution to end use, which will in turn require new rate designs to accommodate cost recovery, promote and reward the proliferation of different energy resources and services, and encourage consumer behavior to take advantage of technology that creates a more dynamic and more efficient grid. Given their jurisdiction over decisions about generation, the use of local distribution systems, and the design of retail rates, PUCs will be at the center of these changes.

Second, we demonstrate that the United States is, in fact, seeing interesting examples of policy innovation and the use of ratemaking powers in each of the three models of electricity regulation (traditional, restructured, and hybrid) that have emerged out of electricity restructuring. To be sure, there are numerous states that are not innovating, and some that are innovating in ways that are inhibiting rather than facilitating decarbonization. But our focus here is on states that are pushing forward with potentially important experiments for the broader effort to decarbonize the grid. To that end, we describe and analyze four areas of ratemaking that are driving investments and changing behavior in ways that could be crucial to decarbonizing the grid: 1) promoting low- or zero-carbon baseload generation; 2) modernizing the grid; 3) promoting distributed energy resources; and 4) using time-variant pricing to encourage more efficient customer behavior. In examining each of these, we find that the nature of the policy exper- iments and the use of ratemaking appear to differ, at least in part, depending on the particular model of electricity regulation. In states operating under the tradi- tional model, which still retain the most regulatory authority over the develop- ment and funding of large-scale generation sources, we see PUCs using their ratemaking powers to promote the development of coal-fired power plants with carbon capture and sequestration and nuclear power plants. In states operating under a restructured or hybrid model, by contrast, we see utility commissions fo- cusing more heavily on the distribution side of the grid, which is the portion of the grid that delivers electricity directly to customers. Some states are experi- menting with performance-based rates to encourage utilities to make large-scale investments in distribution system infrastructure while others are allowing distri- bution utilities to recover the costs of these investments in advance through ex ante prudency determinations and accelerated cost recovery. These investments are crucial to integrating distributed generation into the grid, optimizing perfor- mance, and using rate design to promote more efficient consumer behavior. These states are also using their ratemaking powers to encourage distributed gen- eration by imposing storage mandates, developing infrastructure to incorporate large numbers of electric vehicles into the system, and compensating customers for providing excess generation from rooftop solar and other local generation sources, while simultaneously devising policies to eliminate cross-subsidies from traditional customers who continue to receive electricity from utilities. And in hybrid and restructured states we see PUCs developing more robust time- variant pricing policies, including opt-out rather than opt-in designs for residential programs, to align customer pricing with the actual cost of elec- tricity generation and to encourage more efficient energy use.

Third, we suggest that this diversity of experimentation is in part the result of what we call "accidents of federalism."5 The three models of U.S. electricity regulation can hardly be considered the rational result of intentionally designed federal policy. To the contrary, they might even be viewed as the result of policy failure as the Federal Energy Regulatory Commission (FERC)'s vision of fully restructured wholesale energy markets (endorsed in broad terms by the U.S. Congress) never took complete hold and as the move to introduce competition into retail electricity faltered after the California energy crisis. Numerous com- mentators decry the current system for its lack of national coherence, and more than a few have called for a larger federal role in electricity regulation.16 Never- theless, despite the messy and complex federal system, or maybe because of it, some states and PUCs are deploying new and innovative approaches to ratemaking as a means of promoting investment in low-carbon technologies and practices across the sector. Taken as a whole, we argue that this mix of innovative ratemaking, and the range of technological innovations that it enables, is different than the innovation that might emerge from a more uniform system. As we demonstrate, traditional states that still regulate the generation side of the grid through cost-of-service regulation have different powers and are innovating in different ways than states in fully restructured markets that have largely residual power over the distribution side. Thus an important result of the failure to establish a uniform national system of electricity regulation is the production of a diverse set of regulatory experiments that would likely not have arisen otherwise. We should be dear that our claim is not that the current sys- tem is superior to an alternative system with a more centralized approach to elec- tricty regulation (or decentralized through markets). Instead, our argument is that innovative use of ratemaking powers is occurring in the current system, that such innovation is different from what would have occurred had the push for wholesale and retail competition taken hold across the whole country, and that legal scholars have largely ignored these developments.

The innovations in ratemaking we identify are not, however, only the unin- tentional byproduct of a lack of a uniform national policy. Instead, we also show that through a variety of mechanisms, the federal government has used more intentional policy nudges and subsidies to push states to innovate. These include statutory changes, FERC rulemakings, and federal spending, each of which has helped encourage states to use their ratemaking powers to promote low-carbon technologies and practices by reducing some of the risk of these experiments. This more directed federal policy, combined with the three-model system, is helping to drive low-carbon investments across the whole sector in a manner that might not occur under a more uniform system. We also suggest, however, that federal policy could be used in a more systematic way to encourage and learn from the kinds of policy experiments that are underway in the three different regulato- ry models.

One additional aim of this Article, then, is to demonstrate the ways in which our account of ratemaking speaks to ongoing debates about federalism. Two debates seem especially pertinent. One asks whether federalism promotes or produces too little policy innovation. Although standard claims about the vir- tues of federalism focus to a large extent on states as innovators-and PUCs can rightly daim to be the original Brandeisian laboratories of democracy17 an op- posing theory suggests that federalism produces too little innovation." The basic argument is that states will free ride on the innovative efforts of other states be- cause any individual state bears all the policy risk for innovations that fail and gains only some of the benefits from policy successes since other states can wait and adopt only those policies that succeed. If states, in fact, reason in this way, too little policy innovation may be occurring. Without resolving this theoretical debate, our account of innovation and electricity ratemaking suggests that the federal government-acting largely through policy nudges and subsidies-may be reducing the risk of state policy innovation failure and hence helping to spur more experimentation in electricity ratemaking across the three models than would otherwise occur.

Our account also allies us with an emerging school of federalism that sug- gests that structures of federalism, including the devolution to states of poli- cymaking authority, can be deployed not only to support traditional values like local control and policy diversity but also to promote national values and policies. 9 We think the system of electricity regulation that has emerged in the wake of restructuring-one that combines considerable state autonomy to choose whether and how to participate in wholesale and retail electricity markets with federal policies and subsidies to promote low- and zero-carbon electricity produc- tion across the grid-effectively illustrates this "federalism as nationalism." Through a largely federal structure that has led to regulatory diversity, states op- erating in quite different political and economic circumstances are using their ratemaking powers to construct a lower-carbon, greener grid in alignment with national goals to develop cleaner generation, promote diversity of supply, transi- tion to a nimbler and more efficient grid, and even, at least at the executive branch level, to reduce GHG emissions20 all with a push from the federal gov- emnment to guide them.

Our final purpose in focusing on innovative PUC ratemaking is simply to highlight an under-examined policy tool that states across the country are using to encourage and, importantly, to pay for some of the large-scale innovations that will be necessary to decarbonize the electricity sector. Governments use various tools to encourage innovation all the time, from traditional regulation to taxation to direct subsidy to the protection of intellectual property. All of these tools will be (and to some degree already are) important in the effort to decarbonize. Each of these tools raises questions about efficiency, distributional consequences, and efficacy. Ratemaking presents another tool to encourage, de-risk, and socialize the costs of large-scale innovations in electricity infrastructure. We tend not to think of ratemaking in this way, yet it raises the same questions about efficacy, distributional effects, and efficiency. Our aim is to bring more attention to ratemaking and its role in promoting innovation.

## States

### 2AC – States CP – Top

#### Gets preempted and overturned

Boedicker 6/1 [Jennifer Quinn-Barabanov is a partner and co-leader of Steptoe and Johnson’s Energy Litigation practice. Shaun Boedicker is a member of the Energy practice in Steptoe’s Washington, D.C., office. 6/1/21. “Filed Rate Doctrine: A Powerful Tool in Energy Litigation”. https://www.powermag.com/filed-rate-doctrine-a-powerful-tool-in-energy-litigation/]

The regulatory landscape for the energy industry has changed significantly in the past few decades, but a century-old Supreme Court canon—the filed rate doctrine—continues to be a valuable tool for regulated parties in litigation. The doctrine can provide a basis for a court to dismiss many types of lawsuits, including antitrust, tort, and contract claims. Evaluating the extent to which a claim may improperly infringe upon a filed rate, whether at the state or federal level, is a critical first step in litigation that may save parties substantial time and money.

From its humble beginnings more than a century ago—the Supreme Court once heard a case brought by a railroad for $58 it allegedly undercharged its customers for train tickets to Salt Lake City, Utah—the filed rate doctrine has become a powerful tool. The doctrine holds that state law (and some federal law) cannot be used to invalidate, or collaterally attack a “rate” on file with an agency. Nor may a court assume, for purposes of calculating damages, that a rate other than the filed rate would have been charged. The doctrine has been applied in many industries—insurance, telecommunications, and rail, among others—but frequently arises in the energy sphere, particularly with regard to entities regulated by the Federal Energy Regulatory Commission (FERC).

#### Creates ultra-immunity and guts any state legislation

Rossi 3 [Jim, Harry M. Walborsky Professor, Florida State University College of Law. “Lowering the Filed Tariff Shield: Judicial Enforcement for a Deregulatory Era.” https://scholarship.law.vanderbilt.edu/cgi/viewcontent.cgi?article=1607&context=faculty-publications]

Throughout the twentieth century, courts invoked the filed tariff doctrine as an independent legal basis for refusing to modify, or allow modifications to, rates approved by agency regulators. Courts have extended the doctrine to apply not only to rates, but also to terms and conditions approved by regulators, such as service quality terms included in tariffs. The doctrine's original goals focused on consumer protection-in particular, protection against unjust discrimination in service pricing (the "unjust discrimination" strand). At the same time, institutional concerns of federalism (the "federal preemption" strand) and deference to regulators (the "deference" strand) helped to justify it. With time, this doctrine that began as a consumer protection sword evolved into a shield-a type of ultra-immunity for regulated firms from lawsuits designed to protect consumers and competition.

## Deadlock

### 2AC Deadlock

#### Biden and FTC action thumps – they’ve already committed to going after the industry

Carroll 12/16 [John D. Carroll, partner in the Sheppard, Mullin, Richter & Hampton LLP Antitrust & Competition Practice Group in the Washington, D.C. office. Thomas Dillickrath, Katie Daw, Sheppard, Mullin, Richter & Hampton LLP, Antitrust Law Blog. “Antitrust Scrutiny Heating Up in Oil and Gas Industries.” 12/16/21. https://www.natlawreview.com/article/antitrust-scrutiny-heating-oil-and-gas-industries]

President Biden recently wrote a letter to FTC Chair Lina Khan urging the Commission to immediately investigate potential anticompetitive behavior in the oil and gas sector. The President noted that gas prices have been rising, while the costs faced by oil and gas companies themselves have decreased. Concerned that the two largest oil and gas companies in the country are set to double their net income over 2019 while the gap between the price of unfinished gasoline and the price at the pump is increasing, he called on the FTC to “bring all of the Commission’s tools to bear if you uncover any wrongdoing.”

Steps Already Taken

The Biden administration has made a previous attempt to direct the FTC’s focus towards the oil and gas industries. At President Biden’s behest, the Director of the National Economic Council, Brian Deese, wrote to Chair Khan on August 11, citing “divergences between oil prices and the cost of gasoline at the pump” and urging the FTC to investigate. Chair Khan responded with a letter of her own, outlining a three point plan to address the administration’s concerns about the cost of gas. First, the FTC would identify additional legal theories to challenge fuel station mergers that involve dominant players in the market acquiring family-run businesses. Second, the FTC “would tak[e] steps to deter unlawful mergers in the oil and gas industry.” The Chair specifically referred to the imposition of prior approval requirements to deter illegal mergers in sectors including retail gas markets. Third, Chair Khan indicated that she would direct staff to investigate abuses in the franchise market, noting that the sale of gasoline at high prices may benefit chains at the expense of franchisee store operations.

President Biden expressed in his November 17th letter that he appreciated the plans to “strengthen oversight of mergers in the oil and gas sector” but that further inquiry is required.

Potential Avenues for Enforcement and Investigation

Given the President’s explicit requests to investigate, participants in the oil and gas industry can expect the FTC to increase scrutiny and enforcement. The FTC may pursue several avenues to execute the President’s agenda.

Investigative Powers: Subpoenas and 6(b) Studies

In the wake of Hurricane Katrina, the FTC expended significant resources under its statutory authority to investigate accusations of price gouging in the gasoline market. The Commission issued subpoenas, also known as “Civil Investigative Demands” (CIDs) to petroleum industry firms and issued requests to retailers under Section 6(b) of the FTC Act. The FTC ultimately concluded in May of 2006 that the pricing was explained by normal market trends.

The FTC may employ similar methods to investigate oil and gas industries now by issuing CIDs and 6(b) orders. Orders issued under 6(b) of the FTC Act function similarly to CIDs and require the recipient to provide information to the FTC in writing, subject to court-ordered compliance. Both can require an organization to turn over company information. 6(b) authority also enables the Commission to conduct wide-ranging studies that do not have specific law enforcement purposes. For example, utilizing its 6(b) power and without an underlying specific law enforcement purpose, the FTC recently launched an inquiry into supply chain disruptions and its impacts on consumers.

Wholesalers, refiners, single-location retailers, pipeline owners and operators, terminal owners, and petroleum marketers could all be issued CIDs or 6(b) requests for information if the FTC seeks to gain a deeper understanding of the gasoline cost problem. This possibility seems more likely given the FTC’s recent willingness to utilize Section 6(b) in other industries, including the investigation into the supply chain shortage. However, 6(b) studies are incredibly exhaustive and time consuming to deploy. The costliness of a 6(b) study could be a barrier.

Increased Merger Scrutiny

The FTC may also increase scrutiny on oil and gas companies by ramping up its focus on mergers within the industry, as Chair Khan indicated it would in her letter to Director Brian Deese. This methodology of increasing merger scrutiny also fits within the FTC’s larger trend of increased merger enforcement across a variety of industries under Chair Khan’s leadership.

There is evidence that increased attention on mergers in the gas and oil sector is already taking place—regulators extended the approval process for at least five oil and gas mergers and acquisitions in the third quarter of 2021 alone. This sort of scrutiny has been rare in the oil and gas sector, in which mergers have, up until recently, largely sailed through the regulatory process. The FTC has not blocked a major oil merger in two decades. It brought only four energy related actions in all of 2020, while the DOJ did not file any merger enforcement actions in the energy sector last year. If the FTC’s enforcements behaviors as of late 2021 continues, we may very well see not only more extended approval processes and issuances of second requests, but perhaps more merger challenges, as well.

Takeaways

Participants in the oil and gas market have enjoyed several decades of flying relatively beneath the notice the antitrust regulatory bodies. Increased antitrust scrutiny of the industry from both the DOJ and FTC has been occurring and likely will increase, with President Biden’s request being just a recent example. As clients consider potential transactions, they would be well-served by seeking advice from experienced antitrust counsel.

#### Recent antitrust action is causing massive backlash—chamber of commerce is suing the FTC!!!

Tankersley 12/25 [Jim Tankersley is a White House correspondent with a focus on economic policy, Alan Rappeport is an economic policy reporter, based in Washington, "As Prices Rise, Biden Turns to Antitrust Enforcers", 12/25/21, https://www.nytimes.com/2021/12/25/business/biden-inflation.html]

As rising inflation threatens his presidency, President Biden is turning to the federal government’s antitrust authorities to try to tame red-hot price increases that his administration believes are partly driven by a lack of corporate competition.

Mr. Biden has prodded the Agriculture Department to investigate large meatpackers that control a significant share of poultry and pork markets, accusing them of raising prices, underpaying farmers — and tripling their profit margins during the pandemic. As gas prices surged, he publicly encouraged the Federal Trade Commission to investigate accusations that large oil companies had artificially inflated prices, behavior that the administration says continued even after global oil prices began to fall in recent weeks.

The push has extended to little-known agencies, like the Federal Maritime Commission, which the president has urged to search for price gouging by large shipping companies at the heart of the supply chain.

The turn to antitrust levers stems from Mr. Biden’s belief that rising levels of corporate concentration in the U.S. economy have empowered a few large players in each industry to raise prices higher than a more competitive market would allow.

Corporate culpability for rising prices remains unclear. Inflation is at a 40-year high because of pandemic-related factors such as broken supply chains and high demand for goods from consumers still flush with government-provided cash. But as the price increases have spread across sectors, including food and gasoline, the administration has come under increasing pressure to find ways to respond.

White House officials concede that their antitrust moves are unlikely to reduce costs for U.S. businesses or consumers immediately. The efforts, they say, will be more effective down the road. But the rise of inflation has given the White House an opportunity to take action that Democrats have long encouraged, and that Mr. Biden made an early focus of his tenure: using the power of government to break up monopolies and promote economic competition.

In July, before the recent run-up in prices, Mr. Biden issued an executive order that included 72 directives for cabinet and independent agencies to more vigorously enforce antitrust laws and to pursue specific actions to promote competition, such as eliminating noncompete agreements for workers and forcing tech companies like Apple to allow consumers to repair their own products.

He has also tapped antitrust crusaders for key roles, including Lina Khan to be chairwoman of the Federal Trade Commission, and Jonathan Kanter, an adversary of Facebook and Google, to lead the antitrust division of the Justice Department. Tim Wu, a proponent of breaking up Facebook and other large companies, was brought on as a special White House adviser to Mr. Biden on competition issues.

White House officials say fighting inflation was not the initial motivation for Mr. Biden’s competition agenda. But, they say, the push has given the president some of his most powerful tools to take action against rising prices, and it will play a central role in federal efforts to reduce costs for consumers over the long term.

That role could grow even more prominent if Democrats lose control of the House or Senate in next year’s midterm elections and Mr. Biden is forced to rely on executive actions to advance his economic agenda.

The administration’s focus on increasing competition “will spawn more innovation, more disruption, more start-up businesses in the U.S.,” said Brian Deese, who heads the White House’s National Economic Council. And, he added, it “will deliver lower prices for Americans right away.”

The president’s efforts to promote competition and potentially break up large players have rattled big companies and angered prominent industry groups in Washington, at a time when businesses are already grappling with supply chain problems, higher input costs and labor shortages.

The U.S. Chamber of Commerce has accused the Biden administration of interfering with the work of independent agencies even as it threatened litigation against the Federal Trade Commission, an independent consumer protection agency.

Neil Bradley, the executive vice president and chief policy officer for the chamber, said in an interview that the measures would do little to blunt inflation.

“It’s a fundamental misunderstanding of inflation and frankly a poorly dressed-up political argument,” Mr. Bradley said, adding that inflation had been very low in the last decade during a period of corporate consolidation. “Did they get soft concentration all of a sudden and in nine months it produced rampant inflation? Of course not.”

Much of the business community concern is aimed at the F.T.C., which, empowered by Mr. Biden’s executive order, has targeted companies without looping in the White House.

An F.T.C. official said that the agency was pursuing its own agenda under Ms. Khan.

Late last month, the commission ordered nine large retailers, including Walmart, Amazon and Kroger, to turn over detailed information to help root out the sources of supply chain disruptions that were “harming competition in the U.S. economy.”

The demand for documents was news to the White House, which had arranged for Mr. Biden to meet that same day with a group of retailers to discuss the administration’s efforts to relieve backlogs at the nation’s ports and to highlight the companies’ promises that their shelves would be well stocked for the holiday season. Among the top executives attending the White House event were officials from Kroger and Walmart.

Overall, though, White House officials say they are pleased with the zeal federal agencies have shown for Mr. Biden’s antitrust efforts. Administration officials say the biggest successes so far include blocking the merger of a large American railroad, Kansas City Southern, with a Canadian counterpart and the merger of two large insurance companies, Aon and Willis Towers Watson, which officials say could both have resulted in higher costs for consumers. They also cite a regulation allowing hearing aids to be sold without prescriptions and the auctioning of some gate slots at Newark Liberty International Airport to low-cost airlines.

More dramatic results could emerge from a Justice Department fight against consolidation in the sugar industry and new efforts by the White House’s Office of Management and Budget to require that future federal regulations be evaluated, in part, based on how they might affect competition in regulated industries.

The Agriculture Department has distributed $500 million to help seed new entrants in the meatpacking industries to challenge the small group of corporate giants that dominate it.

The Federal Maritime Commission has investigated the handful of corporate shipping alliances that effectively control the flow of goods across the world’s oceans and that have raised prices as much as ninefold during the pandemic, according to data from the freight-tracking firm Freightos. The commission’s analysis determined that market forces — particularly the rising demand for furniture and other items by consumers who have cut down on travel and dining out — are driving the increases, said Daniel B. Maffei, the former New York congressman who is chairman of the commission.

But, Mr. Maffei said, the focus on antitrust has given the commission tools and confidence to investigate other abuses by shipping companies, now and in the future, when demand falls and companies might be tempted to try to keep their freight rates artificially high. “I think it has upped our credibility” with companies and discouraged anticompetitive behavior, he said.

Perhaps the administration’s most sustained focus, in the near term, has been on the meat industry. A report from the National Economic Council this month accused the largest meat processing companies of price gouging to pad profits. According to the latest data from the Bureau of Labor Statistics, prices for meat were up 16 percent in November compared with the same month last year.

“We’re seeing the dominant meat processors use their market power to extract bigger and bigger profit margins for themselves,” the report said. “Businesses that face meaningful competition can’t do that, because they would lose business to a competitor that did not hike its margins.”

The North American Meat Institute, an industry lobbying group, denied the allegations and accused the Biden administration of cherry-picking economic data. It said that the White House was overlooking the record levels of demand for beef, pork and poultry.

#### 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.

#### If they’re right, expanded FTC enforcement would result in more backlash – crushes its effectiveness – Jones says resource cuts

Alison Jones & William E. Kovacic 20, Jones is a professor at King’s College London; Kovacic is Global Competition Professor of Law and Policy, The George Washington University Law School, “Antitrust’s Implementation Blind Side: Challenges to Major Expansion of U.S. Competition Policy,” The Antitrust Bulletin, vol. 65, no. 2, SAGE Publications Inc, 06/01/2020, pp. 227–255

The second path is to lobby the Congress. The FTC is called an “independent” regulatory agency, but Congress interprets independence in an idiosyncratic way.126 Legislators believe independence means insulation from the executive branch, not from the legislature. The FTC is dependent on a good relationship with Congress, which controls its budget and can react with hostility, and forcefully, when it disapproves of FTC litigation—particularly where it adversely affects the interests of members’ constituents. Controversial and contested cases may consequently be derailed or muted if political support for them wanes and politicians become more sympathetic to commercial interests. The FTC’s sometimes tempestuous relationship with Congress demonstrates that political coalitions favoring bold enforcement can be volatile, unpredictable, and evanescent.127 If the FTC does not manage its relationship with Congress carefully, its litigation opponents may mobilize legislative intervention that causes ambitious enforcement measures to the founder.

#### The FTC is stretched thin and has losses coming

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.

#### No impact

Vestby et al 18 [Jonas Vestby, Doctoral Researcher at the Peace Research Institute Oslo, Ida Rudolfsen, doctoral researcher at the Department of Peace and Conflict Research at Uppsala University and PRIO, and Halvard Buhaug, Research Professor at the Peace Research Institute Oslo (PRIO); Professor of Political Science at the Norwegian University of Science and Technology (NTNU); and Associate Editor of the Journal of Peace Research and Political Geography, “Does hunger cause conflict?”, 5/18/18, https://blogs.prio.org/ClimateAndConflict/2018/05/does-hunger-cause-conflict/]

It is perhaps surprising, then, that there is little scholarly merit in the notion that a short-term reduction in access to food increases the probability that conflict will break out. This is because to start or participate in violent conflict requires people to have both the means and the will. Most people on the brink of starvation are not in the position to resort to violence, whether against the government or other social groups. In fact, the urban middle classes tend to be the most likely to protest against rises in food prices, since they often have the best opportunities, the most energy, and the best skills to coordinate and participate in protests.

Accordingly, there is a widespread misapprehension that social unrest in periods of high food prices relates primarily to food shortages. In reality, the sources of discontent are considerably more complex – linked to political structures, land ownership, corruption, the desire for democratic reforms and general economic problems – where the price of food is seen in the context of general increases in the cost of living. Research has shown that while the international media have a tendency to seek simple resource-related explanations – such as drought or famine – for conflicts in the Global South, debates in the local media are permeated by more complex political relationships.

## BBB

### 2AC – Generic Frontline

#### 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.

#### court action flies under the radar.

Lohier 16 - judge on the United States Court of Appeals for the Second Circuit and formerly an Assistant United States Attorney for the Southern District of New York (Raymond, “THE COURT OF APPEALS AS THE MIDDLE CHILD,” *Fordham Law Review*, Lexis)

In the meantime, almost all of the work of our circuit courts is off the congressional radar. Circuit opinions, with or without the intercession of the Supreme Court, so rarely prompt a ripple in Congress that it becomes memorable when they do. The few ripples more often arise in cases involving issues of national security. A recent example was our decision in ACLU v. Clapper,25 which stirred a vigorous debate in Congress in 2015 when we held that the text of section 215 of the USA PATRIOT Act did not plainly authorize the systematic bulk collection of domestic phone records by the National Security Agency.26 Even more recently, Senator Orrin Hatch of Utah cited our court’s decision in Microsoft Corp. v. United States,27 in which we held that the Electronic Communications Privacy Act (ECPA) did not authorize the government to obtain electronic communications stored outside the United States.28 Senator Hatch and other members of Congress pointed to both the majority opinion and a concurring opinion in that case to ask the Department of Justice to work with Congress on fixing the ECPA.29 On extremely rare occasions, specific congressional involvement arises in the context of a discrete case, as when individual Senators or Representatives seek to influence how we decide important legal issues, such as the indefinite detention provisions of the National Defense Authorization Act for Fiscal Year 2012, by submitting amicus briefs pressing their points of view.30 There also are continuing efforts to get Congress’s attention on broader issues of statutory language. Fairly recently, for example, the Judicial Conference of the United States sought to revitalize and readvertise an excellent project to promote communications between federal courts of appeals and Congress.31 Under the project, “courts of appeals identify opinions that point out possible technical problems in statutes [such as ambiguities and gaps] and send those opinions to Congress for its information and whatever action it wishes to take.”32 Yet, for whatever reason, only three opinions were submitted to Congress under this project in 2015 and only fifty-two altogether have been submitted since 2007.33 Of course, other ways to solicit legislative attention exist short of using this formal mechanism. An opinion that cries for congressional action or decries congressional inaction is one example. But, as I explain later, that opinion is apt to be ignored by Congress if it comes from a circuit court, rather than even a lone dissenter on the Supreme Court.

#### Not UQ—no one knows what’s next. Antitrust hearing thumps the link.

Everett 1/21 [BURGESS EVERETT, MARIANNE LEVINE, "Democrats slim down ambitions after back-to-back failures", 1/21/22, https://subscriber.politicopro.com/article/2022/01/democrats-slim-down-ambitions-after-back-to-back-failures-2103123]

Democrats haven’t coalesced around a specific list of goals moving forward, and Schumer hasn’t indicated what legislation he’ll pursue next. But despite his pursuit of partisan priorities, last year he was able to cut deals with Republicans on infrastructure, competitiveness legislation and a hate crimes bill last year — and he still talks up finding compromise where he can.

Sen. Debbie Stabenow (D-Mich.), who serves on Schumer’s leadership team, said “there’s going to be a lot of discussion about where people want to go.”

But with the Feb. 18 government funding deadline looming, several senators said Democrats' focus will turn to appropriations and reaching a sweeping spending deal that could include disaster and pandemic aid. Congress has been operating on stopgap funding patches since Oct. 1, and the upper chamber's two appropriations leaders are retiring.

Senate Appropriations Chair Patrick Leahy (D-Vt.) said Thursday that negotiations are “getting much closer to something that both the House and the Senate could agree on.” Still, some Republicans are fine with enacting stopgap spending bills for the rest of the year, which would keep spending levels flat and preserve spending riders from the presidency of Donald Trump. Democrats acknowledged they would need a strong GOP commitment to move forward.

In addition to the funding package, other possibilities include finding a bipartisan path forward on Russia sanctions and getting legislation that addresses competition with China over the finish line. While the China bill passed the Senate last year, it stalled in the House, prompting an agreement between Schumer and Speaker Nancy Pelosi to work out the differences in conference. Stabenow said there’s a “lot of interest in the Senate about the House passing” it.

The Senate Judiciary Committee also approved a major antitrust bill Thursday, which could see floor action. And Manchin suggested Thursday he’s focused on updating the Electoral Count Act with Sen. Susan Collins (R-Maine) after Wednesday’s failed effort to weaken the filibuster. Manchin said they needed to “secure the vote," but senators need a bipartisan proposal first, which is at least weeks away.

#### It’s dead—Manchin has too many demands

Pino 1/20 [DOMINIC PINO, "If Manchin Is Serious, Build Back Better Is Toast", 1/20/22, https://www.nationalreview.com/corner/if-manchin-is-serious-build-back-better-is-toast/]

Manu Raju reports:

Just caught up with Manchin, who set a very high bar for passing 'chunks' of Build Back Better plan.

In short, he wants to see inflation, covid and the national debt dealt with first.

Also said they'll be 'starting from scratch' and his December offer isn't on table

He goes on to quote Manchin as saying Washington needs to “get your financial house in order. Get this inflation down. Get covid out of the way. Then we’ll be rolling.”

If he means that, there is no possible way that chunks of Build Back Better will be passed before midterms.

The national debt situation is only going to get worse as the Fed raises interest rates. With federal debt held by the public at approximately 100 percent of GDP, every Fed rate increase adds significantly to the deficit by increasing the federal government’s interest payments. Those are unavoidable debt increases; there’s no way to pass legislation or reform programs to change the interest payments. Many economists are expecting the Fed to raise rates as many as four times this year, with the first increase coming in March.

Inflation isn’t going away anytime soon. Large portions of the government’s Covid relief remains unspent. Though people expect the Fed to tighten things up soon, the money supply is still expanding at a historically high rate. Supply constraints and labor shortages show few signs of easing in the economy at large. In other words, none of the key ingredients of the present inflationary episode is likely to change in the near future, at least for the rest of this year.

On Covid, the virus is extremely unpredictable and the emergence of a new variant could complicate things — we really don’t know. But there’s lots of good news. We have vaccines that are highly effective at preventing hospitalization and death. We have antiviral pills to treat Covid if people do catch it. The virus is becoming milder, on average, and the most vulnerable populations are nearly 100 percent vaccinated.

Biden could have followed in Democratic Colorado governor Jared Polis’s footsteps and said, “The emergency is over.” But he hasn’t, and his administration is just now getting around to policies that would have made more sense in April or May of 2020, such as mailing people N95 masks and Covid tests. Noisy segments of his base are staunchly opposed to any loosening of Covid restrictions, and many of them actually want more restrictions. Even though the pandemic emergency should be over, it seems highly unlikely that Biden will govern that way.

If Manchin is serious about the list of standards he gave to Raju, there’s simply no way Build Back Better will be passed in any form during this congress. Republicans look primed to take the House and possibly the Senate in November, and at that point, any hopes of passing it are dead for good.

Biden is trying to appear as though he is pivoting to a new strategy while actually just reiterating everything that didn’t work for him last year. The renewed effort around Build Back Better is no exception. Manchin wasn’t on board last year, and he isn’t on board now. If he sticks to his word today, he won’t be on board for at least the rest of this year.

The most important fact will remain: Democrats don’t have the votes.

#### No PC

Roberts 12/30 [William Roberts, "Biden will struggle to steer US agenda in 2022: Analysts", 12/30/21, https://www.aljazeera.com/news/2021/12/30/biden-will-struggle-to-steer-us-agenda-in-2022-analysis]

US President Joe Biden’s first year in office was a rollercoaster, marked by legislative victories and major political setbacks – and with midterm elections set for November, next year promises to be even tougher.

When Biden was inaugurated this past January, outgoing President Donald Trump’s supporters were still angling to overturn election results, the US Capitol was cordoned off by troops, the COVID-19 pandemic was raging, and the US economy was in shambles.

Today, Biden’s approval ratings are low and his signature policy proposals bogged down, as Republicans appear set to retake control of Congress.

“Under the circumstances, Biden’s done phenomenally well, getting what he did get done,” James Thurber, a professor of government at American University in Washington, DC, who is writing a book on Biden’s first year in office, told Al Jazeera.

Democrats in Congress pushed through a $1.9 trillion COVID-19 relief and economic stimulus package in March. Bipartisan majorities in the House and Senate passed a $1.2 trillion infrastructure plan in November and a $777bn defence budget in December.

But Biden’s flagship welfare and climate legislation – the $1.75 trillion, 10-year “Build Back Better” plan – has been blocked by Democratic in-fighting and Republican opposition. The Omicron variant of COVID-19 has caused a surge in infections and prices for food and fuel have been rising.

“People will still be disappointed and he will have a rough time in 2022 because it’s an election year,” Thurber said. “It will be an ugly year of confrontation, partisanship and gridlock.”

High stakes

It would be hard to overstate the stakes of the year ahead for Biden’s presidency. At risk in the November 2022 elections is the Democratic Party’s control of Congress, which will define the political landscape for the remaining two years of Biden’s term.

Democrats hold a narrow 221 to 213 majority in the House of Representatives and a controlling tie vote in the Senate, which is evenly split between Republicans and Democrats. Democratic control of Congress could easily be lost in November when all 435 House seats and a third of the 100-seat Senate are up for election.

Historically, in US politics, the party that controls the White House loses seats in Congress in the following election, as the out-of-power party mobilises its voters.

In jeopardy are Biden’s ambitious policy proposals ranging from addressing climate change to investing in childcare, to reforming the immigration system, to protecting reproductive rights for millions of women.

“The Republicans go into this cycle with huge structural advantages,” James Henson, director of the Texas Politics Project at the University of Texas at Austin, told Al Jazeera.

Declining poll numbers

Biden enjoyed a kind of honeymoon with the American public in his first six months in office, with his approval rating hovering above 53 percent and disapproval near 43 percent. But by August, those trends had flipped.

Today, Biden’s disapproval sits at 52 percent and approval at 43 percent, putting him within range of Trump’s historically bad ratings and below every other modern president at this point in their presidencies.

“The public is increasingly judging Biden relatively negatively. His approval rating is underwater, and strong disapproval is significantly higher than strong approval,” Kyle Kondik, an analyst at the University of Virginia’s Center for Politics, told Al Jazeera.

The weight that places on Democratic candidates was highlighted in the Virginia governor’s race this past November, when Republican Glenn Youngkin, a businessman endorsed by Trump, defeated Biden-backed Democrat Terry McAuliffe.

Fall of Kabul

While Biden’s job approval was falling slowly during the middle of the year, Afghanistan was a “catalysing event”, Kondik told Al Jazeera.

The sudden and unexpected fall of Kabul to the Taliban, against whom the US had waged war for two decades, raised doubts in voters’ minds about the Biden administration’s competency. A renewed migration crisis on the US border with Mexico, supply chain disruptions and inflation added to Biden’s woes.

Meanwhile, Biden’s inability to woo holdout Democratic Senator Joe Manchin to support his Build Back Better plan amplified voters’ doubts. “Presidents don’t do well with major cleavages in their own parties,” Thurber said. “It’s going to be a messy year.”

# 1AR

## CP

### 1AR – Capture

#### Electric regulatory capture is extremely likely because of revolving door

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]

B. Regulatory Capture

Legal and economic historians have not, however, unanimously endorsed the view that cost-of-service regulation followed from the theory that the utility industries were natural monopolies. Scholars have also suggested that public utility regulation reflected regulators’ attempts to support the industries that had managed to curry favor with energy regulators.

There is evidence that the capture theory accounts for at least part of the sudden rise of utility rate regulation. Utility regulation was immensely profitable for the energy companies that managed to use it to shield themselves from competition, and prominent public service commissioners worked for the industries they regulated before and after becoming commissioners.48 Insull himself stood to benefit if regulators accepted his economic argument because doing so would have the convenient effect of shielding his electricity franchises from competition.

It is perhaps unsurprising, therefore, that energy companies such as those operated by Insull would lobby for public utility regulation. When a regulator or legislature designated a business a public utility, the business would generally be shielded from competition and enjoy a protected stream of revenue. From the perspective of utilities, it was clearly preferable to have a captive customer base than to be forced to compete with other railroad and energy companies.

### 1AR – PDCP

#### Expand’ extends.

Murphy ’47 [Loren E; September 18; Chief Justice on the Supreme Court of Illinois; Westlaw, “Fed. Elec. Co. v. Zoning Bd. of Appeals of Vill. of Mt. Prospect,” 398 Ill. 142]

The question is squarely presented as to whether the placing of the neon signs on the towers expanded the use to which the property had been previously devoted. The restrictive part of the ordinance which prohibits expansion refers to the nonconforming \*\*362 use of the property. Literally, it provides that the use may be continued but it cannot be \*146 expanded. Webster's International Unabridged Dictionary defines the word ‘expand,’ to extend, to enlarge. The application of such definition to the word ‘expanded’ as contained in section 10 would mean that the use that was being conducted on the premises at the time of the adoption of the ordinance could not be extended or enlarged. The placing of the neon signs on the towers did not expand or enlarge the use to which the property was devoted. It may have been installed for advertising purposes, hoping that it would result in a gain of its business, but there is nothing in the record which indicates that such advertising would be followed by any expansion or enlargement of the laboratory experiments that were being conducted on the property. Zenith had the right to continue its nonconforming use and the right to advertise that use and the products it was handling, so long as it did not expand the use to which the property was devoted when the ordinance was adopted.

#### ‘Scope’ means the law’s breadth.

Parsons ’14 [Honorable Donald F Jr; February 18; Vice Chancellor of the Court of Chancery of Delaware; Westlaw, “Vichi v. Koninklijke Philips Electronics, N.V.,” 85 A.3d 725]

As an initial matter, I reject the proposition that the determination of who can invoke a choice of law provision must precede the analysis of the provision's validity and scope. The “scope” of a choice of law provision refers to how broadly or narrowly that provision applies and includes the question of whether the provision created enforceable rights in third parties.310 The only case Philips N.V. cites in support of its assertion that Delaware law should govern whether it can invoke the choice of law clause merely stands for the proposition that a Delaware court will apply its own conflict of laws rules to determine which jurisdiction's substantive law will govern the claims before it.311 As noted previously, under Delaware conflict of laws rules, the scope of a valid choice of law provision is determined by the law of the selected jurisdiction—in this case, England.

#### 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.”).

## DA

### 1AR – Impact

#### Farming is becoming sustainable – new innovations are key.

**Shellenberger ‘20** [Michael; Founder and President of Environmental Progress, Former President of the Breakthrough Institute; “Apocalypse Never: Why Environmental Alarmism Hurts Us All,” ISBN: 0063001705,9780063001701]

s **technology** becomes more available, crop yields will **continue to rise**, even under higher temperatures. Modernized agricultural techniques and inputs could increase rice, wheat, and corn yields five-fold in sub-Saharan Africa, India, and developing nations.26 Experts say sub-Saharan African farms can increase yields by nearly 100 percent by 2050 simply through access to fertilizer, irrigation, and farm machinery.27

If every nation raised its agricultural productivity to the levels of its most successful farmers, global food yields would rise as much as 70 percent.28 If every nation increased the number of crops per year to its full potential, food crop yields could rise another 50 percent.29

Things are **headed in the right direction** regarding other **environmental measures**. **Water pollution** is **declining** in relative terms, per unit of production, and in absolute terms in some nations. The use of water per unit of agricultural production has been declining as farmers have become **more precise** in **irrigation** methods.

High-yield farming produces **far less nitrogen pollution run-off** than lowyield farming. While rich nations produce 70 percent higher yields than poor nations, they use just 54 percent more nitrogen.30 Nations **get better** at using nitrogen fertilizer **over time**. Since the early 19**60s**, the Netherlands has **doubled** its yields while using the **same amount** of fertilizer.31

High-yield farming is also better for **soils**. Eighty percent of all degraded soils are in poor and developing nations of Asia, Latin America, and Africa. The rate of soil loss is twice as high in developing nations as in developed ones. Thanks to the use of fertilizer, wealthy European nations and the **U**nited **S**tates have adopted **soil conservation** and **no-till** methods, which **prevent erosion**. In the **U**nited **S**tates, soil erosion **declined 40 percent** in just fifteen years, between 1982 and 1997, while yields rose.32