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# Energy Emergencies vs. Manufactured Crises:

## The Limits of Federal Authority to Disrupt Power Markets

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Reliable electric service is built upon long-term planning and requires constant coordination among myriad actors. Industry protocols and market rules keep the system in balance by aligning operations with the laws of physics that govern the movement of electric energy. Economic incentives enshrined in law, market prices, and operational standards inform long-term investment decisions. Collectively, these protocols, rules, and incentives assist generators, utilities, and regional grid operators in meeting consumer demand at every instant.

Energy emergencies interrupt these complex but orderly operations. Such emergencies are usually characterized by supply shocks caused by infrastructure failure. Severe weather is the leading cause of such failures, and federal policymakers are increasingly turning their attention to cyber and physical sabotage.

Because genuine emergencies demand a swift and decisive response, several federal laws consolidate limited emergency control over the industry in the Department of Energy (DOE) or the President, temporarily empowering them to override existing law and order actions inconsistent with the contracts, prices, or protocols that govern the industry's day-to-day operations. These authorities, however, are narrow, as befits the nature of emergency response. Congress had specific types of threats in mind and limited the authorities granted to those needed to respond to a crisis. The statutes outline the conditions under which federal actors may assert emergency powers and enumerate those powers with specificity.

Since early 2017, the current Administration has flirted with invoking these powers to bail out coal-fired power plants. This paper examines statutes that provide federal agencies or the President with emergency powers over energy assets, including a law related to "defense critical materials" that is discussed in a leaked Administration document that purports to justify a bailout. We answer three key questions about these federal laws: 1) What conditions allow DOE to declare an "emergency" or to otherwise invoke these statutes? 2) What powers does DOE have under these statutes to alleviate emergency conditions or to respond to national security threats? And, 3) When do these statutory authorities expire once invoked?

We conclude that these statutes do not provide the authority this Administration seeks to prop up economically failing coal plants. We first outline the extensive frameworks in place to ensure the reliability of the electric grid. Then we survey the statutory authorities available to respond to grid emergencies. Finally, we detail the Trump Administration's proposals to support coal-fired generation and explain why the emergency statutes are a poor fit for these efforts.

# Keeping the Lights On: Resource Adequacy and Operational Standards

Reliable electric service requires that generation and delivery resources sufficient to meet demand operate in compliance with industry protocols and market rules. While these two components of reliability – resource adequacy and operational standards – were historically maintained with limited government oversight, today, the Federal Energy Regulatory Commission (FERC) is deeply involved. FERC regulates interstate power markets that incentivize steady power flows, approves and enforces reliability standards, and has indirect authority over resource adequacy in some regional markets.[1] No other federal government entity has authority relevant to the day-to-day provision of reliable electric service. This section offers an overview of reliability regulation in order to contrast it with the emergency authorities discussed in the next section.

## Reliability Before Regulation

Historically, the federal government had no oversight over the nation's interconnected electric networks. Electric utilities have a duty to deliver adequate service that is rooted in state or local laws.[2] These laws sanctioned monopoly service territories for utilities on the condition that utilities deliver reliable service. In the industry's earliest days, each utility owned all of the infrastructure that generated and delivered power to its ratepayers. Reliable service was premised on each utility building and effectively operating sufficient infrastructure.

By the 1920s, utilities routinely connected to each other to facilitate energy transfers during outages or to share generation resources to meet each utility's resource adequacy needs.[3] While sharing electric power is now a routine technical task, connecting neighboring utility systems involves much more than simply plugging in. Supply and demand must be in balance, and the voltage, frequency, and other operating parameters of the shared system must remain within safe limits.[4] To maintain the stability of their shared system, interconnecting utilities must coordinate their operations.

Increasing interconnectedness led to new arrangements. Regional "power pools" facilitated varying levels of cooperation and coordination among utilities. Some power pool agreements codified reliability standards among participants. Such standards might have, for example, prescribed for each utility the amount of generation capacity that could be brought online instantaneously to meet unplanned generator outages or demand spikes.[5] These private agreements were essential components of maintaining reliable electric service.

In 1935, the federal government entered the field of utility regulation. Congress passed the Federal Power Act (FPA), providing FERC with jurisdiction over rates, terms, and conditions for electric transmission and wholesale power sales in interstate commerce.[6] The FPA explicitly denied federal regulators any authority over "generation facilities" and specifically prohibited FERC from "compel[ling] the enlargement of generation facilities" to facilitate energy transfers to another utility.[7] Federal regulation of interstate power lines focused on the rates utilities charged for service and did not generally intrude on operations.

As the scale of interconnected systems grew, the industry coalesced around technical standards and began to formalize their implementation.[8] In the 1960s, utilities created two organizations for exchanging information about reliability, coordinating regional planning, and setting operational standards.[9] These organizations, which later consolidated into the North American Electric Reliability Council (NERC), operated without enforcement authority or direct government oversight. Reliability depended on industry's voluntary coordination rather than legal compliance. Nonetheless, utilities "universally" adopted NERC's operating and planning policies, standards, and procedures that covered emergency operations, facility connection requirements, system modelling, personnel training, system protection, control and restoration, and other areas.[10]

In the 1990s, industry restructuring facilitated by FERC reforms resulted in more diverse ownership of power plants and new operational practices. From 1995 to 2005, utility ownership of generation declined from nearly 90 percent of total capacity down to 63 percent as non-utility power producers purchased utility assets and constructed generators that competed in newly created wholesale power markets.[11] Meanwhile, in several parts of the country, utilities ceded operational control of the interstate transmission network to non-profit regional transmission organizations (RTO) charged with providing all generators and utilities non-discriminatory service. These dramatic changes in ownership and management led FERC to caution in 1998 that "issues concerning scheduling, curtailment, and reliability are becoming more complex."[12] Two years later, DOE similarly warned that, given this increasing complexity, "voluntary self-regulation of reliability issues may not be sufficient."[13]


FERC-Regulated Regional Transmission Organizations, courtesy of sustainableFERC.org

## Modern Reliability Regulation

Responding to these warnings and in reaction to a 2003 blackout in the northeast, in 2005 Congress amended the FPA to provide FERC with authority over reliability standards.[14] The law requires FERC to certify an organization to develop reliability standards, review and approve the organization's proposed reliability standards, and impose penalties on entities that violate those standards. By 2007, FERC had designated NERC as the nation's reliability organization and approved 83 proposed reliability standards that "collectively define overall acceptable performance with regard to operation, planning and design" of the interstate bulk-power system.[15] Today, NERC reliability standards cover a vast array of industry operations, from transmission scheduling to managing vegetation near high-voltage power lines to physical and cyber security of critical infrastructure.

FERC's oversight over RTO power markets aims to align industry incentives with reliable operations. Pursuant to FERC-approved rules, RTOs dispatch generators based on their offers to supply power. Prices reflect the cost of balancing supply and demand and vary by location to reflect the physical transmission system and actual power flows on the grid. For example, high prices in one location reflect a transmission constraint that prevents the movement of low-cost power into the area, requiring the RTO to dispatch higher-cost generators to meet local demand. RTOs also operate markets for grid reliability services needed to maintain steady power flows. In non-RTO regions, traditional power pool agreements and contracts among utilities and independent power producers achieve the same reliability goals. FERC also uses its authority over transmission tariffs to impose technical requirements that aim to bolster reliability.

FERC also regulates resource adequacy regimes that are codified in contracts for wholesale power or transmission service or RTO rules. FERC approves the rules for capacity auctions run by PJM, ISO-NE, and NYISO that ensure each region has sufficient resources to meet peak demand. The other FERC-regulated RTOs have rules that ensure each member utility owns or has contracted with sufficient capacity or that allow the RTO to contract with resources needed to meet any shortfall.

FERC-regulated RTOs also ensure that power plant retirements do not put reliability at risk. Several months prior to a planned retirement, a generator participating in an RTO market must notify the RTO of its to intent to shut down. If the RTO concludes that the proposed retirement will impair its ability to operate the transmission network reliably, the RTO may provide the generator a contract for its continued operation. The agreement carves the generator out of the market and pays it a rate that ensures it will recover its costs rather than the market rate. Once new resources come online, the RTO will not renew the contract.

States also play important roles in maintaining reliable electric service. In general, state utility regulators have exclusive authority over the distribution facilities that connect to homes and businesses[16] and may regulate utility operations and performance. States also have exclusive authority over siting new infrastructure, including facilities that are essential for reliability.

This system appears to be effective, at least at the federal level. NERC's annual "State of Reliability" reports, which summarize the day-to-day performance of myriad industry actors in maintaining reliable electric service, consistently find that the North American high-voltage system operates at a high level.[17] In addition, as discussed in more detail in the next section, energy emergencies are exceedingly rare. Market rules and operational protocols predictably and dependably maintain steady power flows.

## Reliability Performance

### DELIVERY DISRUPTIONS

With more than half a million miles of high-voltage power lines connecting seven thousand generators to six million miles of distribution lines, the nation's power infrastructure is ubiquitous.[18] The vast scale of the electric generation and delivery systems portends the inevitability of blackouts. On utility-owned distribution systems, failure of a single wire can cause nearby consumers to lose power. High-voltage networks, by contrast, are designed and operated according to NERC standards and must be capable of withstanding scheduled and "reasonably expected" unscheduled outages of system components.[19] Nonetheless, multiple disturbances due to weather, fire, equipment failure, human error, sabotage, or other causes can result in widespread service interruption.[20]

Approximately 90% of all blackouts, as measured by minutes that a consumer is without power, are due to disturbances on utility-owned distribution systems.[21] These localized outages typically affect a handful of contiguous households or businesses. Although the industry does not standardize reporting of these small-scale events, evidence suggests that frequency and duration of these events varies and fluctuates across the country.[22] There are numerous potential explanations for the uneven performance, including weather, system topology (urban vs. rural), age of utility infrastructure, and utility spending on preventative maintenance.[23]

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The remaining 10% of blackouts are due to incidents on the interstate transmission system. Weather is the most prevalent cause of these large-scale outages.[24] In 2015, for example, weather caused all twelve outages that affected at least 250,000 consumers and 83% of the 35 outages that affected 50,000 to 250,000 consumers. Equipment failure was the next most frequent cause, responsible for the remaining 17 percent of these outages.[25]

The Northeast Blackout of 2003, which left 50 million people in the dark, illustrates how multiple disturbances can have cascading effects. Due to equipment failures and lack of preparation, utility engineers were unaware of the severe consequences of high-voltage power line outages caused by contact with overgrown vegetation. According

to a DOE-led task force report on the blackout, these simultaneous faults "triggered a cascade of interruptions on the high voltage system . . . such that within seven minutes the blackout rippled from the Cleveland-Akron area across much of the northeast United States and Canada. . . . more than 508 generating units at 265 power plants had been lost, and tens of millions of people in the United States and Canada were without electric power."[26]

Two years later, Congress specified that FERC-approved reliability standards must be designed to prevent such cascading failures.[27] Although reliability standards are now enforceable under federal law, implementation is imperfect. For example, in 2011 nearly three million customers in the southwest lost power when a single transmission line outage led to cascading failures across the high-voltage network. An initial post-incident report blamed operators' "inadequate situational awareness and planning" for allowing it to unfold across the region.[28] Subsequent investigations by FERC and NERC led to settlement agreements with four utilities, an RTO, and the regional entity delegated by NERC to monitor and enforce compliance. The settling parties agreed to pay a total of $37.9 million in fines and admitted to 21 reliability standards violations.[29]

Such investigations and fines can generate useful information and signal to industry the importance of complying with reliability standards. Of course, it is not possible to eliminate the risk of future incidents entirely. The flow of electric energy is dynamic, and disturbances manifest differently across the power network depending on the instantaneous conditions. Modern computing and communications technologies, spread across the grid and clustered in utility and grid operator control rooms, provide operators with information to support split-second decisions that may avert a cascading failure. But this connectivity and embedded intelligence exposes a new vulnerability to cyber threats.[30]

Cyberattacks by foreign adversaries or domestic terrorists have the potential for devastating consequences. Although cyberattacks on U.S. energy infrastructure to date have produced minimal consequences, a DOE report warns that more significant "attacks across the globe on energy systems should be viewed as indicators of what is possible."[31] The first confirmed hack to affect a power system left nearly a quarter million people in Ukraine without power for three to six hours in December 2015.[32] As with the major U.S. blackouts in 2003 and 2011, human error was a precipitating cause. Hackers gained access to distribution infrastructure by targeting utility IT personnel with an email phishing campaign.[33]

Physical sabotage could also cause widespread outages, although there have not been any major incidents in the U.S. A 2013 sniper attack in California that disabled seventeen high-voltage transformers failed to knock out power, but it highlighted the vulnerability of utility infrastructure.[34] A year later, FERC approved a reliability standard that requires robust security measures at critical transmission stations and substations that connect the interstate transmission network to utility distribution grids.[35] However, the requirement affects only a small percentage of the nation's substations.[36] Speaking at a FERC hearing in 2016, NERC's CEO speculated that it could take weeks or even months to restore service following coordinated attacks on

multiple sites.[37]

A cyber or physical attack on natural gas pipelines could also cause electricity outages. Nationwide, natural gas powered nearly one-third of all electricity generated in the United States in 2017, ending coal's century-long run as the industry's top fuel.[38] Although the U.S. has plentiful supplies of natural gas, an interruption in delivery due to a pipeline attack would cause most natural gas-fired power plants receiving fuel from that pipeline to shut down. Natural gas is delivered to power plants as it is consumed, and only some plants that primarily run on gas are capable of burning other fuels.[39] A 2016 NERC report unsurprisingly concluded that "areas with a growing reliance on natural gas-fired generation are increasingly vulnerable to issues related to gas supply unavailability."[40]

### GENERATION RESOURCE MIX

Fuel availability is not causing blackouts.[41] Today, the U.S. has far more generation capacity than needed to maintain reliable service[42] and abundant supplies of the fuels that power the grid.

Nonetheless, NERC has recently called attention to the growth of intermittent resources and the downturn in baseload generation. When combined with recent retirements of coal and nuclear plants, "the rapid addition of variable resources [is] altering the operating characteristics of the grid."[43] While NERC observes that these changes in the generation mix are "significant and rapid," it emphasizes that the industry is capable of managing associated challenges with careful planning and management.[44]

The reliability and resource adequacy regimes overseen by FERC and NERC are ostensibly resource-neutral. Yet, regulators long assumed that conventional plants – powered by fossil fuels, hydro, or nuclear – would dominate the system. Such plants are characterized by massive rotating generators that supply a steady and predictable amount of electricity. Traditionally, grid operators relied on these plants producing at or near capacity to meet the base level of consumer demand. These so-called baseload units tended to be high capacity, most economical to run at capacity, and incapable of adjusting their output on a short-term basis. As demand changed throughout a given day, system operators brought more flexible plants online and scheduled them to vary their output in concert with forecasted demand.[45]

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The growth of intermittent renewables, combined with the dramatic decline in the cost of natural gas, have disrupted this entrenched operational model. Modern natural gas-fired plants generate cheaper energy than traditional baseload plants in many regions of the country. Meanwhile, flexible resources are needed to smooth the variable output of wind and solar plants. Traditional baseload generators are

inflexible and therefore incapable of complementing intermittent generators.[46] These dynamics, as well as other factors, have disadvantaged traditional baseload plants economically, leading many of them to go offline.[47]

NERC has recognized that system operators and planners need to "adapt."[48] With many traditional baseload generators retiring or operating less frequently, other resources must provide so-called Essential Reliability Services (ERS). NERC recommends that FERC "support new [RTO] market products and/or changes to market rules that support the provision of" these services and ensure that all resources technically capable of providing those services are allowed to do so.[49] More broadly, NERC expects that solutions will include "some mix of market approaches, technology enhancements, and reliability rules or other regulatory rule changes."[50]

# Energy Emergency Authorities

As the previous section cautioned, no amount of planning can prevent all grid emergencies. Congress has therefore enacted laws that empower executive actors to respond to emergencies that threaten energy supply. Each of these statutes contains important limitations, however. First, they are only triggered when the President or the DOE declares that specified emergency conditions exist. Second, they authorize only a limited set of actions in response to those emergency conditions. Finally, those actions must cease when the emergency comes to an end.

This section examines these limits in the context of emergency provisions from four federal laws: the Federal Power Act (FPA),[51] the Fixing America's Surface Transportation (FAST) Act,[52] the Natural Gas Policy Act of 1978 (NGPA),[53] and the Public Utility Regulatory Policies Act (PURPA).[54] It also discusses the Defense Production Act (DPA),[55] a statute that authorizes market interventions by the federal government for national defense purposes. While its structure is different from that of the first four statutes, the DPA's purpose is similar in that it authorizes the federal government to exercise extraordinary powers of limited duration in order to address exigent circumstances.

Another statute, the National Emergencies Act, enables the President to unlock approximately 120 emergency authorities embedded in other statutes. However, apart from provisions related to the DPA (discussed below), it is not apparent how any of these authorities could be used to mandate actions by the power sector and thus this paper does not discuss the Act further.[56]

Crucially, none of these emergency authorities was intended to substitute for the comprehensive system of electricity market regulation, reliability oversight, and long-term planning detailed in Part I. Instead, these laws are scalpels, designed to address particular exigencies of limited duration.

## The Federal Power Act

Section 202(c) of the Federal Power Act authorizes the Secretary of Energy to take action to ensure continued operation of the electric grid during periods of emergency. This section has been invoked a handful of times in response to natural disasters as well as other supply events.[57] The Secretary of Energy may exercise Section 202(c) authorities either during a war in which the United States is engaged or by determining that an emergency exists.[58]

Section 202(c) identifies four specific circumstances that may support an emergency finding. The Secretary may make such a finding based on 1) a "sudden increase in the demand for electric energy," 2) a "shortage of electric energy," 3) a shortage "of facilities for the generation or transmission of electric energy," 4) or a shortage of "fuel or water for generating facilities."[59] In addition, a catch-all provision allows the Secretary to conclude that an emergency exists because of "other causes."[60]

Congress added this section in response to concerns about power shortages during wartime as well as during "[d]rought and other natural emergencies," suggesting that Congress had in mind shortages linked to emergency events rather than garden variety resource adequacy concerns.[61] Although the statute does not connect emergencies to violations of NERC's reliability rules, in practice the most recent DOE orders aimed at ensuring compliance with NERC standards.[62]

No formal declaration of emergency is required.[63] In practice, the Department of Energy issues orders that explain the relevant emergency, thus providing a basis for judicial review of the Department's justifications for intervention.[64] As detailed in the Appendix, DOE has invoked Section 202(c) eight times since 2000. Two invocations came in response to hurricane damage.[65] One came in the wake of the California Energy Crisis.[66] Two required operation of a controversial underwater cable under Long Island Sound.[67] And three invocations overrode market-based retirement decisions by power plant owners.[68]

> "While the statute grants the Secretary discretion to craft a remedy, it does not write a blank check. Section 202(c) orders must be limited to actions the Secretary determines will 'best meet the emergency' and 'serve the public interest.'"

Once the Secretary finds that an emergency exists, she may "require by order such temporary connections of facilities and such generation, delivery, interchange, or transmission of electric energy as in [her] judgment will best meet the emergency and serve the public interest."[69] The Secretary has invoked Section 202(c) authority in the past to require that power plants continue to run, that energy or services be delivered to specific market actors, that transmission lines be operated, and that interconnections be made.

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Section 202(c) orders must be limited to actions the Secretary determines will "best meet the emergency" and "serve the public interest." Indeed, the Senate Report on the Federal Power Act emphasizes the restricted nature of these powers, noting that the "emergency powers . . . which were indefinite in the original bill have been spelled out with particularity in section 202(c) and appropriately limited to periods of war or other emergency."[70] While actions taken under 202(c) are not constrained by reliability rules or market prices nor subject to environmental laws or regulations,[71] some constraints do apply. For example, if the parties affected cannot agree on the terms that would enable them to carry the order out, the Secretary may prescribe such terms, including compensation and reimbursement, by supplemental order.[72] These terms must comport with the statutory "just and reasonable" standard, and are ultimately determined by FERC.[73] Additionally, actions taken pursuant to a 202(c) order must minimize adverse environmental impacts "to the maximum extent practicable."[74]

As noted above, Section 202(c) allows the Secretary of Energy to "require by order such *temporary* connections of facilities and such generation, delivery, interchange, or transmission of electric energy as in [his] judgment will best meet the emergency . . ."[75] In terms of duration, the key word here is "temporary."[76] Orders may not extend indefinitely. Those that conflict with environmental laws or regulations expire within 90 days of their issuance and may be renewed only after consultation with the federal agency with primary expertise in the relevant environmental interest.[77] Orders should include conditions that the agency determines are necessary to minimize environmental impacts.[78]

In the past, the Secretary has put in place 202(c) emergency orders that have lasted a single day and others that been renewed for nearly two years.[79] In the latter case, DOE allowed a coal-fired power plant to continue periodic operations notwithstanding its contribution to local exceedances of National Ambient Air Quality Standards in violation of the federal Clean Air Act.[80] The nearly two-year duration provided a potential opportunity to test the limit of the term "temporary," but the order was not challenged in court.

## The Fixing America's Surface Transportation Act

The FAST Act, whose emergency provisions have not yet been invoked, gives the Secretary of Energy broad powers to respond to an attack on the electricity grid or to a disruption caused by a geomagnetic storm. While the Secretary has significant discretion to address such disruptions, these interventions are designed to be extremely brief in duration.

Under the FAST Act, the President may declare a "grid security emergency" when there is an "occurrence or imminent danger" of either "a malicious act using electronic communication or an electromagnetic pulse, or a geomagnetic storm event" that "disrupts" the operation of equipment that is "essential to the reliability" of critical infrastructure," or "a direct physical attack" on critical infrastructure that affects its reliability.[81] Importantly, only the effects of particular events on specific infrastructure, and not the event themselves, trigger the Act's authorities.

The Act applies to disruption of two types of infrastructure. "Critical electric infrastructure" is defined as "a system or asset of the bulk-power system, whether physical or virtual, the incapacity or destruction of which would negatively affect national security, economic security, public health or safety, or any combination of such matters."[82] "Defense critical electric infrastructure," meanwhile, means electric infrastructure in the continental United States "that serves a facility designated by the Secretary of Energy as critical to the defense of the United States" and that is "vulnerable to a disruption of the supply of electric energy provided to such facility by an external provider."[83]

In order to declare a grid security emergency, the President must provide the Secretary of Energy with a written directive or determination.[84] The President must also "promptly notify congressional committees of relevant jurisdiction" of the justification for this directive or declaration as well as its contents.[85]

The FAST Act provides few details about the nature of an emergency response. It merely states that "[t]he Secretary may, with or without notice, hearing, or report, issue such orders for emergency measures as are necessary in the judgment of the Secretary to protect or restore the reliability of critical electric infrastructure or of defense critical electric infrastructure during such emergency."[86] The Secretary's actions are not constrained by FERC-regulated reliability rules or other market rules.

However, the FAST Act authorities are not wholly without limit. All actions must be tied to the protection of critical infrastructure. In addition, before taking action under the Section, the Secretary must consult "to the extent practicable"[87] with various state and non-state actors.[88]

While FAST Act authorities are not narrowly defined, the duration of such actions is strictly limited to the emergency period. Orders for emergency measures expire 15 days after their issuance.[89] The Secretary may reissue emergency orders for subsequent 15 day periods, but only if the President has provided a written determination that the grid security emergency "continues to exist or that the emergency measure continues to be required."[90]

## The National Energy Act of 1978

While aimed at natural gas supply rather than directly at the electricity grid, the emergency authorities in the NGPA and PURPA give the federal government important powers to keep the lights on in the case of natural gas supply disruptions. As will be discussed in the next section, the current Administration has argued that the potential for natural gas supply interruptions are a grave threat to the electricity grid's "resilience" and may justify action to support generators fueled by coal and uranium. Because provisions of the National Energy Act provide the President with authority to restore gas service to the power sector in the event of an emergency, however, they undermine claims that the federal government would be powerless to address a natural gas supply emergency.

Two laws allow the President to declare a natural gas supply emergency if he finds that (1) a "severe" natural gas shortage that endangers the supply of high-priority users either exists or "is imminent" and that (2) other alternatives have been exhausted and that using the authorities described in this section is

therefore reasonably necessary.[91] High-priority users include residential and low-capacity commercial consumers, and any users "the curtailment of which the President determines would endanger life, health, or maintenance of physical property."[92] This final clause could include the power sector.

During a natural gas supply emergency, the President may authorize interstate pipelines and local distribution companies to contract for the purchase of emergency supplies of natural gas on terms and conditions that the President deems "appropriate."[93] These emergency contracts may not exceed four months in duration, except that they may be renewed upon Presidential authorization.[94] He may also order the construction and operation of natural gas pipelines if "necessary" to carry out a contract or order under the Act.[95]

If the President is notified by a state governor that a shortage of natural gas in that state exists or is imminent and that state authority is inadequate to protect high-priority users from a supply interruption,[96] he may allocate supplies of natural gas among interstate pipelines, local distribution companies, and high-priority users.[97] Before making such allocations, the President must find that doing so is reasonably necessary to assist in meeting the demands of high-priority users.[98] He must also consider the relative availability of alternative fuel.[99] If there is disagreement about the compensation owed for natural gas or transportation under a Presidential order, the President must hold a hearing and prescribe compensation according to statutory guidelines.[100]

Finally, the President may require fuel-switching at power plants that are able to burn petroleum products rather than gas. He may prohibit any electric power plant or major fuel-burning installation from burning natural gas if he determines that (1) the plant or installation has the ability to burn petroleum products without damage and without interfering with operational requirements; (2) significant quantities of natural gas that would have been burned by the plant or installation can be made available during the emergency for a high-priority use; and (3) that petroleum products for use by the plant or installation will be available during the emergency period.[101] When an order to burn petroleum projects results in "imminent and substantial endangerment" to health, the President may exempt the plant or installation from the order.[102]

Emergency declarations under the Act expire when the President finds that the shortage no longer exists or is no longer imminent, or 120 days after the declaration, whichever is earlier.[103] However, the President may extend the emergency declaration if he finds that the same criteria required for the original declaration are met.[104] Within 90 days of the termination of a natural gas supply emergency, the President must report to Congress on how he has exercised his authorities with respect to the allocation of natural gas supplies.[105]

## The Defense Production Act

Unlike the statutes discussed above, exercise of DPA authority is not premised on the declaration of an emergency per se. While no emergency declaration is required to invoke the Act's authorities, however, most actions must be justified by reference to national defense.[106] The DPA is also distinct from the

statutes discussed above in that it does not allow the federal government to override reliability rules or to subvert energy market prices. However, the government may itself act as a market participant or subsidize industry.

### TITLE I

Title I authorizes the President to require "the allocation of, or the priority performance under contracts or orders . . . relating to, materials, equipment, and services in order to maximize domestic energy supplies."[107] This authority allows the President to require that suppliers prioritize the government's orders of goods and services over orders from other customers. The President may only do so if he makes a series of findings, including that the subject materials, services, or facilities are "scarce, critical and essential" to "maintain or expand exploration, production, refining, [or] transportation," to "conserve energy supplies, or "to construct and maintain energy facilities."[108] The President must also find that these actions "cannot reasonably be accomplished without exercising" the section's authorities.[109] The President has delegated his authority to make these findings and to take action under this section to the Secretary of Energy.[110]

The President also has more general authority to prioritize performance of contracts that are "necessary or appropriate to promote the national defense," as long as the contracts concern "critical and strategic materials."[111] The Act expressly designates energy a "strategic and critical material."[112]

Crucially, Title I is directed at sellers, not buyers. These authorities may not be used to require private actors to buy things they do not want. Title I's authorities were invoked during the California Energy Crisis to require natural gas sellers to prioritize and perform contracts with PG&E, which needed gas deliveries to meet consumer demand.[113] The government also invoked Title I during the construction of the Trans-Alaska Pipeline to help the pipeline's developer obtain materials on a priority basis.[114]

### TITLE III

Title III authorizes the President to make loans or loan guarantees to companies in various industries, but only if certain threshold criteria are met. In order to make a loan, the President must 1) identify a shortfall in particular industrial resources or materials essential for national defense;[115] and 2) find that financial assistance is not otherwise available from private sources on reasonable terms.[116] If the loan is made during a period of national emergency, it must be the most cost-effective, expedient, and practical method for meeting the need and the Secretary of the Treasury must deem the interest rate reasonable.[117]

Title III also authorizes the President to purchase industrial resources and to encourage "exploration, development, and mining of critical and strategic materials, and other materials."[118] The phrase "industrial resources" includes "any raw materials" as well as "commodities."[119] This authority, too, hinges on a finding that the resource is "essential to the national defense."[120]

There are several important constraints on the exercise of these authorities. Government

commitments may not exceed $50 million unless specifically authorized by law.[121] The President can disregard this cap by declaring an emergency under the National Emergencies Act or by determining "that a specific guarantee is necessary to avert an industrial resource . . . shortfall that would severely impair national defense capability."[122] In addition, loan guarantees must not be used primarily to prevent financial insolvency or bankruptcy unless the President details to Congress how the insolvency or bankruptcy "would have a direct and substantially adverse effect upon defense production."[123] Finally, for direct purchases, purchase price is limited by prevailing market prices unless a determination is made that supply "could not be effectively increased at lower prices or on terms more favorable to the Government" or that "such purchases are necessary to assure the availability to the United States of overseas supplies."[124]

Because the Defense Production Act requires no declaration of emergency, its authorities do not have the same kind of time limitations as FPA 202(c) or the FAST Act. However, to the extent that the justification for invoking any of the DPA's authorities is a national emergency declared by Congress or the President, those invocations should expire upon the declared end of the emergency.

The DPA also limits the duration of specific actions. Agreements to purchase under Title III may not extend for more than ten years, for example.[125] The most important temporal limitation on DPA authority, however, is that the Act itself sunsets in 2025.[126] Each version of the Act since its original passage has included a similar sunset provision.[127]

* * *

Each of the statutes discussed in this section provides the president with some authority to intervene in electricity operations during emergencies or to promote the national defense. What they do not contemplate, however, is the fabrication of a crisis in order to provide the president greater control over the grid and its resources. And yet, as the next section will argue, that is precisely what the Administration has proposed.

# Manufacturing a Crisis to Bail Out "Fuel-Secure" Generators

The Trump Administration's efforts to bail out aging and uncompetitive baseload plants, particularly those powered by coal, began almost immediately. Initially, DOE sought to rewrite RTO market rules to increase rates paid to baseload plants. When FERC rejected that plan in January 2018, the Administration and its allies shifted tactics and considered invoking energy emergency authorities. In March, a nuclear and coal plant owner filed a FPA 202(c) request that sought a region-wide carve-out from prevailing low wholesale prices for coal and nuclear plants. While the Administration was taking comment on that filing, it was hatching its own scheme to predicate a bailout on national defense.

This section documents the Administration's 18-month campaign to bail out unprofitable power plants. It demonstrates that while the Administration's goal has remained consistent, its narrative has shifted. DOE initially suggested that "fuel-secure" resources are necessary for reliability, then pivoted to a nebulous concept dubbed "resilience," and finally national security.

## Secretary Perry Claims Baseload Generators Are Necessary; Staff Finds Otherwise

Energy Secretary Rick Perry kicked off his campaign to bail out baseload coal and nuclear plants in April 2017, ordering DOE staff to study whether "regulatory burdens . . . are responsible for forcing the premature retirement of baseload power plants" and whether markets "are adequately compensating [for] attributes such as on-site fuel supply and other factors that strengthen grid resilience."[128] The letter telegraphed Secretary Perry's desired result, declaring that "baseload power is necessary to a well-functioning grid," and vaguely asserting that "many have questioned the manner in which baseload power is dispatched and compensated [and] [s]till others have highlighted the diminishing diversity of our nation's electric generation mix, and what that could mean for baseload power and grid resilience." In short, according to Perry, "[g]rid experts have expressed concerns about the erosion of critical baseload resources."

Two weeks later, Secretary Perry reiterated the letter's main points at an industry conference, emphasizing DOE's study would review "regulatory burdens placed by the previous Administration on baseload generators."[129] In prepared remarks, Perry asserted that "no reasonable person can deny that the thumb, and in some cases the whole hand, has been put on the scale to favor certain political outcomes" in energy markets, and called out the previous Administration's "hostility to coal." Responding to a question about whether the federal government might preempt state renewable energy policies, Secretary Perry defended the proposition by appealing to national security interests, singling out the nuclear industry as particularly relevant to national defense. The salient link, according to Perry, was the industry's workforce, not the "baseload" characteristics of its power plants.[130]

The next week, EPA Administrator Scott Pruitt joined the campaign to support baseload plants, and in particular coal. In several media interviews, he claimed that the grid "need[s] solid hydrocarbons on-site that you can store, so when peak demand rises, you've got solid hydrocarbons to draw on."[131] He called coal a "safeguard to preserve the grid" in the event of an attack on U.S. infrastructure.[132] Pruitt also connected coal's share of the power generation market to national security. He claimed that "[w]hen we're at less than 30 percent . . . that creates vulnerabilities to attacks on infrastructure."[133] Administrator Pruitt did not specify which "vulnerabilities" would be exposed or explain how he arrived at 30 percent as the tipping point.

By the summer of 2017, West Virginia Senator Joe Manchin and interim FERC Chairman Neil Chatterjee joined the growing chorus from Washington touting the importance of coal. While touring a coal-fired power plant in his home state with Secretary Perry,

Senator Manchin contrasted the large pile of coal outside the plant with natural gas delivery, which he said can be interrupted by cyber or physical attacks. He told reporters that "the country has to decide, how much uninterruptible power do you want."[134]

One month later, Chairman Chatterjee said on FERC's podcast that as a Kentucky native he has "seen firsthand . . . how important the contribution coal makes to an affordable and reliable electric system." He expressed his "commit[ment] to the resilience and reliability of our electric system," which he noted "are essential to national security," and said he "believe[s] baseload power . . . including our existing coal and nuclear fleet . . . need to be properly compensated to recognize the value they provide to the system."[135]

"DOE's report is noteworthy for its failure to explicitly support Secretary Perry's key assertions in his initial letter that were later echoed by Administrator Pruitt and Chairman Chatterjee."

Two weeks later, in late August, DOE released the study that Secretary Perry ordered in April. The bulk of the report summarizes industry data and highlights excerpts from documents published by DOE, NERC, and industry sources. This content is generally uncontroversial. The document is noteworthy, however, for its failure to explicitly support Secretary Perry's key assertions in his initial letter that were later echoed by Administrator Pruitt and Chairman Chatterjee.

First, DOE's report does not endorse Secretary Perry's assertion that "baseload power is necessary." As an initial matter, DOE staff reports that resource adequacy is sufficient across the country despite recent retirements. The report connects baseload plants to the provision of Essential Reliability Services that keep the grid stable.[136] Rather than identifying specific types of plants needed to deliver those services, DOE staff recommends (three times) that FERC create "fuel and technology-neutral markets" for ERSs.[137] Staff also suggests recent baseload closures necessitate the development of "a comprehensive strategy for long-term reliability and resilience," but it does not say that maintaining baseload or fuel-secure generators must be a component of that plan.

Second, the report contradicts Secretary Perry's hypothesis about the connection between "regulatory burdens" and retirements of baseload generators. Instead, DOE staff found that "[t]he biggest contributor to coal and nuclear plant retirements has been the advantaged economics of natural gas-fired generation."[138] Obama-era environmental regulations are listed last among second-tier factors, including flat demand for electricity and increased penetration of intermittent renewable sources.

Third, the report contradicts the substance of Secretary Perry's unattributed statement regarding "the diminishing diversity of our nation's electric generation mix, and what that could mean for . . . grid resilience." Perry's claim about "diminishing diversity" was simply wrong. DOE staff found that

at a national level "the grid was, on average, more diverse in 2016 than in 2002 in terms of both capacity and generation."[139] On the connection between fuel diversity and resilience, Perry was correct in a limited sense. DOE's report quotes a May 2017 NERC conclusion that "fuel diversity and security provides best assurance for resilience," but that claim is limited to extreme weather events in regions where the grid is heavily reliant on natural gas fired generation.[140]

Fourth, the report explains, rather than "questions," the "manner in which baseload power is dispatched and compensated." DOE staff describes how the dramatic economic shift in natural gas generation and growth of intermittent renewables upended bedrock assumptions embedded in wholesale electricity market operations.[141] These "changes in the Nation's generation mix have generally reduced revenues for incumbent baseload generators in wholesale markets."[142] The report finds the "issue of revenue insufficiency and generator retirements . . . complex" because "each plant has its own cost structure and plant revenues can differ . . . in a single market."[143] But rather than concluding that baseload retirements due to revenue insufficiency are necessarily a problem that must be fixed, DOE staff hypothesizes that generator profitability "*could* become a public policy concern if so much generation is financially challenged that the reliability or resilience of the [bulk power system] become threatened."[144] Critically, the report does not say that reliability or resilience is actually at risk.

## DOE Proposes to Pay Merchant Coal and Nuclear Plants

Nonetheless, just weeks later, DOE declared in a notice of proposed rulemaking (NOPR) filed at FERC that "the resiliency of the nation's electric grid is threatened by the premature retirements of" baseload plants.[145] In focusing on "resiliency," DOE's filing marked a shift in the campaign's message. While DOE staff could not reinforce Secretary Perry's key talking points about baseload power in its report, the report did raise questions about "resilience." As a threshold matter, the report found that "more work is needed to define, quantify, and value resilience," and recognized the ongoing efforts of RTOs to do just that.[146] The report recommended that DOE "support" industry efforts to "enhance system resilience," and that RTOs should "further define criteria for resilience."[147]

But DOE's NOPR, entitled the "Grid Resiliency Pricing Rule,"[148] hijacked those efforts and capitalized on the ambiguity surrounding resilience by claiming that the resilience benefits of baseload power plants justify guaranteed profits for plants situated in certain RTO markets. As discussed above, market prices reflect power flows on the grid, with high prices in a particular geographic area reflecting local transmission bottlenecks. DOE's NOPR asserted that this pricing scheme is insufficient because it fails to account for the value of on-site fuel storage, which DOE claimed significantly contributed to systemwide resilience.

This deficiency in the RTOs' pricing scheme, according to DOE, could have dire consequences. The NOPR urged FERC to "protect the American

people from energy outages expected to result from the loss of this fuel-secure generation capacity" by finalizing DOE's proposed pricing scheme. This "expectation" was unsupported by any claims about resource adequacy concerns or violations of NERC reliability standards. DOE relied solely on supposed threats to "resiliency," a term it did not define and that FERC had never used in connection with wholesale rates.

The NOPR proposed to remedy the identified resilience problem by providing special compensation to coal and nuclear plants that have 90 days of on-site fuel supplies and do not recover their costs from state-set retail rates (also known as merchant generators). Instead of receiving the rate set by RTO auctions, these plants would receive rates based on their costs that would assure their profitability. DOE's proposed rates would shield these generators from competition and ensure that they remain operational regardless of market prices.

Following DOE's filing, FERC invited the public to submit comments on the proposal. "In order to assist [FERC] Staff in understanding the implications of the proposed rule," staff issued two dozen questions about the NOPR and requested that commenters consider them in their responsive filings.[149] The highly unusual document reflected the unprecedented procedure invoked by DOE, the scope of the rule that seemed to counteract two decades of FERC support for competitive markets, and the paucity of details in the NOPR. The document's first question, "what is resilience," addressed the NOPR's threshold failure to define the proposal's key term. FERC staff also questioned numerous assertions in the NOPR, implicitly suggesting that many of DOE's statements and conclusions were simply unsupportable.

Nearly all of the comments filed by electric industry participants reflected staff's skepticism and urged FERC to reject the NOPR.[150] PJM, the RTO that was effectively singled out by the proposal's definition of eligible plants,[151] was unsparing in its criticism. PJM summarized that "[w]hile claiming to address an imminent threat to the 'resilience' of the electric grid from looming retirement of so-called 'fuel-secure' baseload resources, the DOE NOPR fails to demonstrate that any such threat is imminent, that retirements are to blame, that competitive markets and specifically capacity markets are forcing retirements that would not have otherwise occurred, or that its proposed solution will actually address the perceived problem."[152] In short, PJM concluded, the "DOE NOPR misidentifies a problem, misstates the cause, and then proposes a radical solution that is antithetical to clear Congressional and Commission policy in favor of promoting competitive energy markets."

On January 8, 2018, FERC rejected the NOPR, concluding that RTO market prices were not defective as DOE had alleged and that DOE's proposal would not result in just and reasonable rates. FERC therefore concluded that the NOPR "did not satisfy [the] clear and fundamental legal requirements under . . the FPA."[153] FERC also initiated a new proceeding whose goals include "develop[ing] a common understanding . . . of what resilience of the bulk power system means and requires" and "understand[ing] how each RTO and ISO assesses resilience."[154] As of the publication of this paper, FERC has yet to act in that proceeding in response

to numerous comments filed by industry and stakeholders.

## Industry Allies and DOE Reinforce Bailout Push

FirstEnergy, a utility holding company that owns electric distribution companies, vertically integrated utilities, and merchant coal and nuclear plants, was the only power sector company to provide unqualified support for the NOPR. The company's comment warned that "fuel-secure" resources are "needed to keep the lights on in times of crisis," and criticized market rules for "fail[ing] to recognize or compensate generators with ample on-site fuel for those benefits."[155] The company's strategy of amplifying DOE's long-standing talking points and bolstering the NOPR with affidavits from industry experts and tariff language to implement DOE's proposal reflected the company symbiotic relationship with the Administration on its campaign to bail out uneconomic plants.

Administration responses to Freedom of Information Act requests and media reports reveal that FirstEnergy and Murray Energy, a coal mining company, pushed the Administration to bail out aging coal plants and suggest that the companies may have developed the core ideas underlying Secretary Perry's initial letter and the NOPR. Two weeks before Perry issued his April 2017 memo, the Murray Energy CEO sent Perry an "action plan for reliable and low cost electricity" that proposed DOE "issue an emergency directive to have an immediate study done of the security and resiliency of our electric power grids," and "direct that no power plants having an available fuel supply of at least forty-five days be closed" for a two-year period.[156] Using language that would later appear in the NOPR, the document also stated that RTO markets should be reformed to "value fuel security [and] fuel diversity . . . that only baseload generating assets, especially coal plants, can provide." Murray sent EPA Administrator Pruitt a similar document.[157]

> "Letters from Murray in August 2017 claimed that the companies were in close contact with top Administration officials, including the President and Secretary Perry, about a bailout."

Meanwhile, less than two weeks after he was sworn in as Secretary of Energy, Secretary Perry was scheduled to meet with FirstEnergy CEO Chuck Jones.[158] On a call with company investors a month later, Jones said that he had personally met with Administration officials about bailing out coal plants.[159] According to Politico, in the spring and summer of 2017 the President's former campaign manager Corey Lewandowski spoke to top Administration officials about a bailout on behalf of FirstEnergy and arranged for meetings between the FirstEnergy CEO and the President.[160]

Letters from Murray in August 2017 claimed that the companies were in close contact with top Administration officials, including the President and

Secretary Perry, about a bailout. One letter sent to a White House aide states that the company is "desperate for the President to . . . order Energy Secretary Perry to invoke section 202(c) of the Federal Power Act for FirstEnergy's merchant [coal] plants."[161] The letter claimed that President Trump, his top economic adviser Gary Cohn, Secretary Perry, Chuck Jones, and Murray discussed a bailout. Murray's letter further alleges that during one of those conversations the President told Secretary Perry that he "wants this [bailout] done."

Two weeks later, Murray sent a letter to Secretary Perry, copying numerous Administration officials, to follow up on a prior conversation with Perry's chief of staff about invoking 202(c). Murray again advocated for a two-year moratorium on coal plant closures and warned that failure to do so would result in FirstEnergy Solution's bankruptcy. It further claimed that the PJM market is "fundamentally flawed" because "the valuable attributes of baseload coal and nuclear generation [are] taken for granted."

DOE's decision to propose a market rule rather than invoke emergency powers under 202(c) did not change the bottom line for FirstEnergy and Murray. The NOPR's focus on merchant coal and nuclear plants in PJM aligned with the companies' facilities. FirstEnergy Solutions, the merchant generation arm of FirstEnergy that would declare bankruptcy in March 2018, owns plants exclusively in PJM. Murray is the largest coal producer in the region, and nearly half of its sales are to coal plants in PJM. The two companies are also business partners – two-thirds of all coal burned at FirstEnergy Solution Plants is mined by Murray.[162]

## DOE Continues to Focus on Resiliency as FirstEnergy Asks DOE to Declare an Emergency

January 8, 2018, the day that FERC rejected the NOPR, marked the end of the "bomb cyclone," a twelve-day weather pattern that caused unusually cold temperatures in much of the eastern United States.[163] The price of natural gas spiked, primarily due to high demand for heating, and some power plants that usually burn natural gas switched to other fuels. As a result, wholesale electricity prices soared across the PJM, New England, and New York markets.

Following the bomb cyclone, DOE featured a National Energy Technology Lab (NETL) report on the "critical role of thermal units during extreme weather events" on its website.[164] DOE's summary of NETL's March 2018 study highlights the report's finding "that without the resilience of coal plants—its ability to add 24-hour baseload capacity—the eastern United States would have suffered severe electricity shortages, likely leading to widespread blackouts." DOE's synopsis echoed the NOPR's conclusions about the 2014 "Polar Vortex," a cold-weather pattern that also caused high energy prices.[165] The NOPR claimed that coal and nuclear units were critical for maintaining reliability and resiliency in 2014, but it ignored a NERC report that painted a more complex picture of baseload generators' performance during the Polar Vortex.[166]

PJM responded with its own analysis of the bomb cyclone that criticized NETL for "reach[ing] some sweeping conclusions that are not supported by the specific facts."[167] PJM explained that coal's share

of power generation rose during the bomb cyclone because natural gas was a more expensive fuel, as demand for natural gas heating spiked. The generation mix, according to PJM, was consistent with its normal economic dispatch of power plants and did not reflect any special "resilience" attributes of coal-fired power plants. Moreover, PJM had sufficient reserves available, undercutting NETL's claim there would have been "severe electricity shortages" without the above average contributions of coal-fired plants.

Just two days after DOE released NETL's report, FirstEnergy filed a request with DOE, asking that it declare an emergency under FPA 202(c) "due to the recent and imminent critical reduction in nuclear and coal-fired generation capacity" in the PJM region.[168] FirstEnergy's core arguments echo the NOPR's claims; both documents blame low prices that render merchant coal and nuclear plants unprofitable on PJM's rules, which do not "value" the plants' "fuel security and resiliency" attributes.[169] The company embellishes the NOPR's narrative by highlighting the NETL report on the bomb cyclone to paint a dire picture of the PJM region's electric system.

FirstEnergy's request for a region-wide bailout was even broader than the relief that DOE proposed in the NOPR. The company slashed the NOPR's 90-day fuel requirement, asking DOE to require PJM to sign four-year contracts with any plant that has 25 days of fuel on-site. Two days after it sent its request to DOE, FirstEnergy Solutions filed for bankruptcy.[170] As of this paper's publication, DOE has not formally responded to FirstEnergy's request.

## DOE Pivots to National Security

As DOE was accepting comments on FirstEnergy's 202(c) filing, it was developing yet another bailout proposal, which deviated substantially from the NOPR in its legal mechanisms and rationale. While DOE's prior focus was on deficiencies in the RTOs' pricing scheme, its new focus was national security, a concern that received only passing references in Perry's initial letter and the NOPR. A leaked DOE document dated May 29, 2018 outlined the rationale for compensating fuel-secure generation facilities, asserting that "resources that have a secure on-site fuel supply. . . are essential to support the Nation's defense facilities, critical energy infrastructure, and other critical infrastructure."[171] The document was intended to accompany a DOE order, although that order has never been released.

The leaked May 29 document elaborates that "to promote the national defense and maximize domestic energy supplies, federal action is necessary to stop the further premature retirements of fuel-secure generation capacity while DOE, in collaboration with other federal agencies, the States, and private industry, further evaluates national security needs and additional measures to safeguard the Nation's electric grid and natural gas pipeline infrastructure from current threats." The memo claims that the FPA and DPA provide DOE with authority to order RTOs and utilities to sign two-year contracts with certain fuel-secure facilities while it conducts studies pursuant to the FAST Act to identify defense critical electric infrastructure. Notably, this two-year window matches the two-year moratorium requested by Murray in 2017. In addition, the memo hints at the creation of a "Strategic Electric

Generation Reserve to promote the national defense and maximize domestic energy supplies," although it does not provide any details.

> "In pivoting to national security, DOE conceded that the nation's electric system is reliable and entirely abandoned the NOPR's claims about deficient RTO rules."

Characterizing itself as a "national security agency," DOE claimed responsibility for ensuring the electric sector can withstand "multi-point attacks or other increasingly likely events of unprecedented magnitude and scope." In pivoting to national security, DOE conceded that the nation's electric system is reliable and entirely abandoned the NOPR's claims about deficient RTO rules. Instead, DOE simply asserted that "all U.S. critical infrastructure depends on fuel-secure electric generation" and that such fuel-secure facilities "promote our national defense."

The issue, then, according to DOE, "is not whether our Nation's electric system has operated or is currently operating at a high level of reliability. Rather, it is whether the Nation's electric power system is adequately prepared and resourced to withstand a high-impact electricity system disruption caused by an attack, natural disaster, or other incident." This system-based problem statement contrasts with the NOPR's plant-specific approach that would have assured a plant's profitability regardless of costs or benefits to ratepayers. Importantly, the leaked document did not identify the fuel-secure plants that comprise a resilient system.

## Bailout Efforts Fizzle as a DOE Lawyer Becomes a FERC Commissioner

On June 1, 2018, the Administration implicitly acknowledged its behind-the-scenes efforts to revive the NOPR through energy emergency laws and the DPA. The White House Press Secretary issued a statement endorsing DOE's longstanding position that "impending retirements of fuel-secure power facilities are leading to a rapid depletion of a critical part of our Nation's energy mix, and impacting the resilience of our power grid." The statement revealed that the President had "directed Secretary of Energy Rick Perry to prepare immediate steps to stop the loss of these resources" and notes that the President "looks forward to receiving [Perry's] recommendations."[172] Those recommendations, if they ever arrived on the President's desk, have never been revealed to the public.

Secretary Perry told reporters in late September that support for coal plants was "still being bandied around the White House."[173] In October, however, Politico reported the bailout has been shelved "amid opposition from the President's own advisors on the National Security Council and National Economic Council."[174] The article claimed that DOE "remains united behind a plan to keep the coal plants running" but that DOE "struggled to provide the White House with details on which plants would get funding and who would pay" as well as a legal

basis. Politico suggested that DOE may nonetheless rollout a bailout plan down the line, as the President "frequently changes his mind, and the idea could re-emerge in advance of the president's reelection campaign."

Two months later, the U.S. Senate confirmed Bernard McNamee as a FERC Commissioner. McNamee had worked at DOE through most of its efforts to bail out baseload plants and was a key architect of the NOPR.[175] Should DOE ultimately issue an order using its emergency authorities that compels purchases of wholesale energy, the resulting contracts would likely be challenged at FERC as unjust and unreasonable while parties also litigate in federal court about DOE's authority to issue the order. McNamee's appointment provides DOE with an ally in any such proceeding and raises the possibility that FERC itself might raise rates for baseload plants through its regulation of RTO market rules.

# The Misuse and Abuse of Energy Emergency Authority

The various tactics described in the previous section illustrate that the Administration is searching for statutory tools that will enable it to funnel money to ailing baseload plants. Congress has never passed a law that provides this authority, however. None of the statutory energy emergency authorities described above can be transformed into bailout vehicles for the Administration's preferred fuel source.

While the Administration has yet to make a new, formal proposal to bolster particular, the leaked DOE Memorandum offers some insight into potential actions that might be part of a bailout attempt. First, DOE might order wholesale market operators to contract for power from coal-fired plants even when those resources do not or would not clear wholesale markets. Second, DOE might require that utilities operating outside of RTO markets continue to purchase energy from coal-fired generators on terms set by "existing or recent" contracts.[176] Notwithstanding the delay in rolling out its programs, we can expect DOE's timelines to be short if it does take formal action. In the leaked memorandum, DOE noted that "immediate action is needed to stop [so-called "fuel-secure" baseload generation that have announced retirement dates] from being deactivated."[177]

Part of the trouble with DOE's approach is factual. Its own documents reveal shifting rationales to justify unprecedented federal intrusion into power markets. Perry's initial memo declared that baseload generators are "necessary to a well-functioning grid." But when his own staff failed to back that assertion, DOE vaguely insisted that coal and nuclear plants provide uncompensated "resilience" attributes. After industry excoriated DOE's NOPR and FERC rejected it, DOE changed strategies to focus on worst-case scenarios and national defense. In essence, the administration's efforts to support baseload generators, and coal in particular, have been framed as a "solution in search of a problem."[178]

The administration also faces legal barriers. The

various statutory solutions they have proposed or contemplated—under the Federal Power Act, the FAST Act, and the Defense Production Act—are non-starters. A bailout is precluded by the statutory text and would be inconsistent with the purposes animating these laws. Moreover, that DOE felt compelled to assemble a defense of its actions by drawing on three different statutes demonstrates the weakness of its position. When it comes to legislative delegations, addition of statutory authorities does not create anything greater than the sum of its parts.

In the remainder of this paper we explain why the plain text of these statutes makes them a poor fit for the administration's efforts to save coal. When Congress drafts statutes, its members do not (and indeed cannot) predict all of the future circumstances in which those laws might apply. In order to maintain flexibility, Congress frequently chooses to use broad language so that its edicts can be applied to new problems without the need for legislative amendment.[179] But this flexibility is not infinite.[180] The administration's efforts to extend energy emergency statutes to address longer-term resource adequacy and fuel diversity concerns and to support specific fuel sources stretches these laws to the point of breaking.[181]

## Triggering Events

The first problem with using Federal Power Act 202(c), the FAST Act, or the Defense Production Act to require or set prices for purchases of coal-fired electricity in wholesale markets relates to the circumstances under which these Acts may be invoked. As discussed, in order to exercise the authorities of FPA § 202(c), the DOE must either cite an ongoing war in which the United States is engaged or determine that "an emergency exists."[182] The DOE's own regulations define an "emergency" for purposes of FPA § 202(c) as "an *unexpected* inadequate supply of electric energy."[183]

"The various statutory solutions they have proposed or contemplated are non-starters. A bailout is precluded by the statutory text and would be inconsistent with the purposes animating these laws."

Coal plant retirements have not resulted in a supply shortage in the United States. And the wording of 202(c) precludes future worst-case-scenario predictions from triggering 202(c) authorities. The Eighth Circuit helpfully distinguished 202(c) authorities from those of §202(b), which also allows FERC to order energy exchanges between utilities. The latter, but not the former, apply "to a crisis which is likely to develop in the foreseeable future but which does not necessitate immediate action on the part of the Commission."[184]

Furthermore, any decline in coal-fired generation is the result of coal's inability to compete in the economic marketplace rather than structural incapacity. An industry coalition explained in a letter to the DOE, "FirstEnergy's true problem is not that there is an emergency on the grid, but that its power plants lose money at current market prices."[185] As a

result, the market for coal-fired power is dwindling. DOE's regulations make clear that section 202(c) is *not* meant to address this sort of scenario where parties fail to agree to terms for the sale of power. Section 202(c), the D.C. Circuit confirmed, "is aimed at situations in which demand for electricity exceeds supply and not at those in which supply is adequate but a means of fueling its production is in disfavor."[186]

Describing the coal industry's economic woes as an emergency under the FAST Act is even more far-fetched. The FAST Act permits the President to declare a "grid security emergency" only when there is an "occurrence or imminent danger" of either "a malicious act using electronic communication or an electromagnetic pulse, or a geomagnetic storm event" that "disrupts" the operation of equipment that is "essential to the reliability" of critical infrastructure," or "a direct physical attack" on critical infrastructure that affects its reliability.[187] Only the effects of particular events on specific infrastructure, and not the event themselves, trigger the Act's authorities.

The DOE memorandum asserts that the FAST Act gives it broad authority to "respond as needed to the threat of cyber and physical attacks on the grid."[188] But those threats must be concrete and impending, not merely speculative. Webster's New International Dictionary (2d ed. 1934) defines "imminent" as "threaten[ing] to occur immediately."[189] Webster's Third gives its meaning as "ready to take place: near at hand."[190] And Random House defines it as "likely to occur at any moment: impending."[191] These definitions are consistent with the common meaning of imminence, which the average person would understand as indicating immediacy. Consequently, the President may invoke the FAST Act only in the face of a known and immediate cyber or physical attack or a geomagnetic storm that impacts the reliability of critical infrastructure.

The leaked DOE memorandum suggests that the Secretary plans to use its FAST Act authority to designate so-called "fuel-secure electric generation capacity" as critical electric infrastructure. It asserts that the electric power system's "resilience" (ability to recover from a high-impact event such as a multi-point cyber attack), is negatively impacted by fossil and nuclear plant retirements.[192] But that designation of resources as critical is only the Act's first statutory requirement. Events disrupting that infrastructure or negatively impacting its reliability must also have in fact occurred or be "imminent" in order for DOE to invoke the Act's other authorities.

No evidence has been offered that such impacts are likely in the immediate future. We are not arguing that catastrophic risks to energy infrastructure be ignored even if they are of low probability. Indeed, the federal government should prepare for and counter such risks through effective planning, infrastructure hardening, and disruption of criminal schemes.[193] But action under the FAST Act is not the proper vehicle for such longer-term planning. Indeed, the Act's short timelines for action are likely to produce ill-considered decisions that do little to enhance reliability or resiliency in the longer term.

Finally, the DPA does not support a bailout of coal-fired power plants. Title I of the DPA, as it relates to energy, may only be used to require sales and priority allocation of materials deemed "scarce, critical and essential to conserve energy supplies"

or to "construct and maintain energy facilities."[194] Given the record U.S. production of natural gas and oil, as well as electricity from wind and solar,[195] and repeated statements by the Administration touting the nation's global "energy dominance," it would be incongruous to find that coal-fired power is essential to "conserve" energy supplies.

Title III's loan guarantees must be connected to government contracts related to the national defense,[196] and may be used to prevent financial insolvency or bankruptcy only if the President details to Congress how such insolvency or bankruptcy "would have a direct and substantially adverse effect upon defense production."[197] Title III also permits the President to purchase industrial resources and to encourage "exploration, development, and mining of critical and strategic materials, and other materials."[198] This authority, too, hinges on a finding that the resource is "essential to the national defense."[199]

The DOE memo claims only that a robust domestic industrial base is essential to national security, and that coal, nuclear, oil and natural gas are together "critical strategic components" of this base. Even if the Administration did attempt to connect coal-fired power specifically, or some combination of coal- and nuclear-fired power, to national defense, and a reviewing court deferred to DOE's blanket assertions, permissible Administration actions would provide little relief to coal-fired power plants, as discussed below.

## Authorized Actions

Emergency statutes limit the nature of the government's response to crisis. Neither the FPA nor the DPA provides the Administration with the authority it seeks. The FAST Act is also an unsuitable vehicle for a bailout because interventions are strictly limited in terms of invocation and duration, as described above and in the next section.

FPA section 202(c) gives the Secretary authority to order such temporary connections of facilities and such generation, delivery, interchange, or transmission of electric energy as in [her] judgment will best meet the emergency and serve the public interest."[200] The requirement that the Secretary's actions "best meet the emergency" requires a narrow fit between those actions and the specific emergency identified.[201] By contrast, the remedy FirstEnergy sought in its petition—providing financial support for every merchant coal and nuclear plant across utility territories in thirteen states—would be both unprecedented and inconsistent with statutory authority.

Even if DOE were to use its 202(c) authority to require purchases of electricity (which it has never done), the prices governing sales of electricity under 202(c) are limited by the Federal Power Act's "just and reasonable" standard.[202] FERC is charged with resolving disagreements about what this standard requires.[203] Even if the Secretary sought to require purchases of uneconomic coal-fired generation at above-market prices, FERC would have to concur. Given the Commission's preference for using market mechanisms to set wholesale rates and its response to the DOE NOPR, this seems unlikely.

Title I of the DPA is of little use to the Administration, since it allows the government to require sales of "scarce" resources, but not purchases. Coal plants are willing to produce power for sale, but there are no buyers at the prices required to keep those plants in business.[204] The cost advantages of other sources (namely natural gas but also, in many parts of the country, renewable power) mean that utilities are uninterested in purchasing coal-fired power and coal plants are routinely shut out of wholesale auctions.[205] The problem, therefore, is one of surplus, not scarcity.

Title I contains no authority to compel purchases of an unwanted commodity. The DOE memo cites past invocations of Title I in energy-related contexts in an effort to demonstrate the statute's applicability. But its examples only reinforce the conclusion reached here.

During the California energy crisis, Energy Secretary Bill Richardson ordered natural gas sellers to perform and prioritize contracts to sell gas needed for electricity generation to PG&E.[206] Pursuant to the Act, sales were to be on the same terms as existing contracts between PG&E and sellers identified in the order who may have been reluctant to sell to the financially distressed utility.[207] And during the construction of the Trans-Alaska pipeline, various materials were prioritized for sale to the Alyeska pipeline company.[208] No price terms were discussed in the orders. In both cases, there were willing (indeed, eager) buyers for the commodities specified in the orders. By contrast, here, utilities, RTOs, and other buyers are uninterested in purchasing coal-fired power.

Although neither DOE's memo nor FirstEnergy's petition expressly contemplated loans to struggling plants, Title III could be invoked to provide loans or loan guarantees that are tied to government contracts related to national defense. This very limited authority has caveats, however. The President or Congress must declare a national emergency if the industrial resource or critical technology shortfall is not identified in the budget the President submits to Congress.[209] And even if the President argued that ailing coal plants are somehow connected to contracts relating to national defense,[210] loan guarantees aimed at[211] preventing financial insolvency or bankruptcy must prevent a "*direct and substantially adverse* effect upon defense production."[212] As FirstEnergy's request for emergency action under FPA § 202(c) suggests, it would likely use a government loan under Title III to stave off bankruptcy.[213] And because the DOE's current justification for supporting coal relies on an attenuated causal connection to national security, it would be challenging for the President to show that coal-fired power plant bankruptcies' effect on "defense production" would be either "direct" or "substantially adverse."

The President's final option under Title III would be for the federal government to subsidize or to purchase coal-fired electricity. To do so, he would have to argue that *coal-fired* power is an "industrial resource" that is "essential to the national defense" and that absent Presidential action U.S. industry cannot reasonably be expected to produce that resource in a timely manner.[214] Alternatively, the President can invoke the authority by declaring an emergency under the National Emergencies Act.

Explicit financial limitations in the DPA render it ill-suited to propping up an entire industry, or even a segment of an industry, over the medium- or long-term. Loans and subsidies under Title III may not exceed $50 million unless specifically authorized by law.[215] That amount of money would provide just two dollars per megawatt-hour for the annual output of FirstEnergy Solutions' three merchant coal plants, which already earn approximately $30 per megawatt-hour from sales to PJM. Such small payments would be unlikely to make the plants profitable, and would be reduced to just pennies per megawatt-hour if relief were extended to plants across the region, as FirstEnergy has requested.[216]

The $50 million cap may be waived "during periods of national emergency" or where the President determines "that a specific guarantee is necessary to avert an industrial resource . . . shortfall that would *severely impair* national defense capability."[217] Here again, the President would need to demonstrate not merely a connection between the domestic coal-fired power industry and national defense, but that a shortfall in electric power produced specifically by coal plants would "severely impair national defense capability." Without such a showing, a meaningful coal plant bailout would require Congress to allocate additional funds.

In short, while the President might try to manufacture facts that connect coal-fired power plants to national defense and address the specific findings required under the law, the actions authorized by the DPA are ill-suited to prop up a nation-wide industry. Regardless of whether the President purported to make the findings required by the DPA or invoked the National Emergencies Act, the President's determination would likely be scrutinized in federal court. While courts customarily give deference to Executive Branch judgments regarding national defense,[218] that deference is not unlimited, especially where courts are not being asked to second-guess military decisions by the armed forces themselves.[219] And where, as here, there is tension between a statutory directive and the President's actions, courts properly serve a mediating function.[220]

Finally, the FAST Act gives the Secretary significant discretion to craft remedies in response to a grid security emergency. However, these responses are limited to those deemed "necessary . . . to protect or restore the reliability of critical electric infrastructure or of defense critical electric infrastructure during such emergency."[221] And as the next section will show, these responses are limited to 15-day periods, making them an ineffective vehicle for sustained industry support.

## Duration of Remedies

None of the identified statutes supports long-term interventions. Of the three, the FAST Act was designed for the most targeted responses. Any emergency measures taken under that Act expire 15 days after issuance.[222] Although they may be reviewed for subsequent 15 day periods, this may only be done if the President provides a written determination that the grid security emergency "continues to exist or that the emergency measure continues to be required."[223]

Orders under FPA § 202(c) must be "temporary."[224] If they conflict with environmental laws or regulations, they expire after 90 days (although they are

renewable for additional 90 day periods).[225]

The DPA's timelines are the least restricted of the three statutes. However, individual agreements to purchase under Title III may not extend for more than ten years.[226] And because the DPA itself sunsets in 2025, its availability as an ongoing source of authority is uncertain.[227] These durational limitations are consistent with these statutes' general purpose: to target emergency scenarios and to provide stopgap authority that lapses when the emergency or threat ceases.

# Conclusion

Change in any industry can be disruptive, particularly one that, like the electricity industry, relies on century-old technologies. Unlike natural disasters or incidents of sabotage, generator turnover will not suddenly trigger a major blackout or energy emergency. With robust planning and operational excellence, the industry can manage the ongoing transition to an increasingly renewable-powered system using existing planning and rulemaking processes.

Framing everyday policy conundrums as emergencies is a favorite tool of presidents seeking to expand their own authority.[228] But as the above discussion of energy statutes shows, only a genuine emergency is sufficient to unlock the limited powers Congress delegated to the President to intervene in power sector operations. Moreover, as described above, even if properly invoked, these laws carefully confine the ability of the executive branch to subvert market prices and bypass industry protocols.

Lawmakers, regulators, and system actors are confronting genuine questions about adapting the power system to modern challenges, from introducing greater levels of renewable generation to mitigating climate impacts. But these complex challenges are properly dealt with in the context of existing reliability frameworks and established stakeholder processes. They are not the sort of questions that lend themselves to effective resolution by reflexive reaction to imagined emergencies.

# Appendix: DOE Invocations of Federal Power Act Section 202(c)

| Date | Name | Emergency | Type of Emergency | Duration |
|---|---|---|---|---|
| 2000 | California Independent System Operator (generation) | California Energy Crisis | • Shortages of electric energy, generation facilities, water used to generate electricity<br>• Unusual volatility of electricity and natural gas markets<br>• Other reasons | 1.5 months |
| 2002 | Cross-Sound Cable Company (transmission) | Availability of energy on Long Island | • Shortages of electric energy, generation facilities, transmission facilities<br>• Other causes | 1.5 months |
| 2003 | Cross-Sound Cable Company (transmission) | Northeast/Midwest Blackout | • Shortages of electric energy, generation facilities, transmission facilities<br>• Other causes | 9 months |
| 2005 | CenterPoint Energy (transmission) | Hurricanes Rita & Katrina | • Shortages of electric energy, transmission facilities<br>• Other causes | 1-2 days |
| 2005 | Mirant Corporation (generation) | "Reasonable possibility" of blackout | • Shortages of electric energy, generation facilities, transmission facilities<br>• Other causes | 18 months |
| 2008 | CenterPoint Energy (transmission) | Hurricane Ike | • Shortages of electric energy, generation facilities, transmission facilities<br>• Other causes | 2 weeks |
| 2017 | Grand River Dam Authority (generation) | Generator retirement/ lightning | • Shortages of electric energy, generation facilities<br>• Other causes | 3 months |
| 2017 | Dominion Energy Virginia (generation) | Generator decision to cease production | • Shortages of electric energy, generation facilities<br>• Other causes | 21 months |

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175 Appendix to Harvard Electricity Law Initiative Comment, FERC Docket AD18-7, Dec. 6, 2018, (excerpt from U.S. Senate Committee on Energy and Natural Resources, Answers to Questions for the Record Submitted by Mr. Bernard L. McNamee, Questions from Sen. Cantwell and Sen. Sanders).

176 Leaked DOE Memo at 3; FirstEnergy Solutions Request for Emergency Order Pursuant to Fedeeral Power Act Section 202(c).

177 Leaked DOE Memo at 16. DOE made a similar claim in the 2017 NOPR. DOE NOPR at 46945 ("Immediate action is necessary to ensure fair compensation in order to stop the imminent loss of generators with on-site fuel supplies . . . ."). If the Administration truly views the need as urgent, however, it is surprising that they would delay formal action.

178 Jennifer A Dlouhy, Trump Prepares Lifeline for Money-Losing Coal Plants, Bloomberg (May 31, 2018), https://www.bloomberg.com/news/articles/2018-06-01/trump-said-to-grant-lifeline-to-money-losing-coal-power-plants-jhv94ghl.

179 *See* Freeman and Rossi, *Old Statutes, New Problems*.

180 Justice Scalia offered a memorable illustration when he noted that although use of the term "yellow" in a statute might be ambiguous, it clearly could never mean "purple." U.S. v. Home Concrete & Supply, LLC, 566 U.S. 478, 498 n.1 (2012).

181 To the extent that this effort specifies the contexts in which federal energy emergency authorities may *not* be exercised, it is consistent with the National Infrastructure Advisory Council's recent recommendations that federal emergency authorities be examined. NIAC, Surviving a Catastrophic Power Outage: How to Strengthen the Capabilities of the Nation 8 (Dec. 2018 Draft), https://www.dhs.gov/sites/default/files/publications/NIAC%20Catastrophic%20Power%20Outage%20Study_508%20FINAL.pdf.

182 16 U.S.C. § 824a(c). *See also Amendment of Regulations Under the Fed. Power Act; Part 32-Interconnection of Facilities; Emergencies; Transmission to Foreign Country,* 52 F.P.C. 1554, 1559 (Nov. 29, 1974) ("The *sine qua non* of Commission action under 202(c) is an emergency.").

183 10 CFR § 205.371 (emphasis added) (stating that, if the trigger of a supply shortage is economic and the result of parties' failure to agree to terms, no emergency will be declared "unless the inability to supply electric service is imminent."). The statute's inclusion of "other causes" as a basis for an emergency declaration should not be read as a broad grant of authority. The *ejusdem generis* canon of statutory construction dictates that this general phrase be interpreted in light of the specific items preceding it. *See Regulations Under the Fed. Power Act; Part 32-Interconnection of Facilities; Emergencies; Transmission to Foreign Country,* 52 F.P.C. 1554, 1558 (Nov. 29, 1974) (noting that

the phrase implies causes *related* to those specifically enumerated). As an example of "other causes," consider the 202(c) order in the wake of the California Energy Crisis in which DOE cited "[u]nusual volatility of electricity and natural gas markets" as a justification for declaring an emergency. DOE Order, Dec. 14, 2000, https://www.energy.gov/sites/prod/files/202%28c%29%20order%20December%2014%2C%202000%20-%20California.pdf.

184 *Otter Tail Power Co. v. Federal Power Commission*, 429 F.2d 232, 234 (1970).

185 Industry Memo to Rick Perry at 5, https://info.aee.net/hubfs/Trade%20Associations%20Letter%20and%20Legal%20Analysis%205-7-18.pdf.

186 *Richmond Power and Light of City of Richmond, Ind.* v. FERC, 574 F.2d 610, 615 (1978).

187 16 U.S.C. § 824o-1(a)(7). The DOE has not publicly designated specific assets that it deems "critical." The statute defines "[c]ritical electric infrastructure" and "defense critical electric infrastructure" and tasks DOE with identifying the latter. 16 U.S.C. § 824o-1(a)(4), (c).

188 Leaked DOE Memo at 34.

189 Webster's New International Dictionary of English Language 1245 (2d ed.1934) (cited in *Meghrig v. KFC W., Inc.*, 516 U.S. 479, 485 (1996)).

190 Webster's Third New International Dictionary (Merriam-Webster 1993). *See also Bucek v. Continental Cas. Ins. Co.*, 378 F.3d 284, 291 (3d Cir. 2004) (citing Webster's Third New International Dictionary 1130 (1st ed. 1966)

191 *Id.* (citing *The Random House Dictionary of the English Language* 957 (2d ed. 1987).

192 Leaked DOE Memo at 2.

193 *See* recommendations in U.S. Government Accountability Restaurant, Critical Infrastructure Protection: Protecting the Electric Grid from Geomagnetic Disturbances (Dec. 2018), https://www.gao.gov/assets/700/696140.pdf.

194 50 U.S.C. §4511(c)(2).

195 *See* Energy Information Agency, FAQs, What is U.S. Electricity Generation by Energy Source?, https://www.eia.gov/tools/faqs/faq.php?id=427&t=3.

196 As noted above in Section II, this requirement may be waived during a period of national emergency declared by Congress or the President. 50 U.S.C. § 4532(a).

197 50 U.S.C. § 4531(e)(2).

198 50 U.S.C. § 4533(a)(1).

199 50 U.S.C. § 4533(a)(5). The statute requires the President to make three additional findings.

200 16 U.S.C. § 824a(c)(1).

201 *Id.*

202 *Id.*

203 10 C.F.R. § 205.376.

204 *See* Martha C. White, Even With Trump as Cheerleader, the Coal Industry Can Only Decline, NBC News (June 1, 2017), https://www.nbcnews.com/business/energy/even-trump-cheerleader-coal-industry-can-only-decline-n767216.

205 U.S. Energy Information Administration, Tbl. 6.7.A, Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels, https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_a (showing declining coal capacity factors).

206 Department of Energy, *Temporary Emergency Natural Gas Purchase and Sale Order* (Jan. 19, 2001).

207 *Id.* While the Order noted that the Secretary of Energy would resolve any disagreements as to contractual terms, by law the authority to determine whether contractual rates are just and reasonable lies with FERC. *See* 16 U.S.C. § 824(c)(1).

208 *See* note 114.

209 50 U.S.C. § 4533(e)(1)(A).

210 50 U.S.C. § 4533, §2092(a).

211 50 U.S.C. § 4531, §2092(a).

212 50 U.S.C. § 4531(d)(2) (emphasis added).

213 FirstEnergy Request for an Emergency Order Pursuant to Federal Power Act Section 202 at 8.

214 50 U.S.C. § 4533(a). The President can avoid these requirements only by declaring a national emergency or determining that the action is needed to avert an industrial resource shortfall "that would severely impair national defense capability." 50 U.S.C. § 4533(a)(7).

215 50 U.S.C. § 4531(e)(1)(C), § 4532(c)(3), § 45333(a)(6)(C). *See also* 160 Cong. Rec. H7002-04 (daily ed. Jul. 29, 2014) (statement of Rep. Campbell) ("These programs are usually small, typically less than $15 million, and in the history of the DPA, going back to the Korean war, only three have exceeded $50 million, each of which was specifically authorized by Congress.").

216 Data from the Energy Information Administration shows that FirstEnergy's three coal plants – Bruce Mansfield, Sammis, and Pleasants – generated nearly 22 million megawatt hours in 2017, which would yield a subsidy of $2.30 per megawatt-hour. EIA, Form 923, https://www.eia.gov/electricity/data/eia923/. In 2017, the average per-megawatt-hour energy price was $30.99. Monitoring Analytics, PJM State of the Market Report, https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2017.shtml.

217 50 U.S.C. § 4531(e)(1)(D), § 4532(c)(4), § 4533(a)(7).

218 *Natural Resources Defense Council, Inc. v. Winter*, 502 F.3d 859, 862 (2007).

219 In contrast to the civilian determination here, the cases most commonly cited in favor of deference to the executive on matters of national security typically involve determinations made by the military or by the President as Commander-in-Chief. *See, e.g.* Department of Navy v. Egan, 484 U.S. 518, 529-30 (1988) (stressing the importance of deference to military determinations of security clearance eligibility); *Gilliam v. Miller*, 973 F.2d 760, 762 (9th Cir. 1992) (noting that deference to military decision-making is appropriate due to the special function

of the military in our constitutional structure); *Hammond v. Lenfest*, 398 F.2d 705, 715 (2d Cir. 1968) (noting that "the federal courts have traditionally afforded the military the broadest possible discretion in military matters and questions which turn on the national defense.").

220 *See United States v. Am. Tel. & Tel. Co.*, 551 F.2d 384, 392 (D.C. Cir. 1976) ("Thus, the cited cases do not establish judicial deference to executive determinations in the area of national security when the result of that deference would be to impede Congress in exercising its legislative powers").

221 16 U.S.C. § 824o-1(b)(1).

222 16 U.S.C. § 824o-1(b)(5)(A).

223 16 U.S.C. § 824o-1(b)(5)(B).

224 16 U.S.C. § 824a(c)(1).

225 16 U.S.C. § 824a(c)(4).

226 50 U.S.C. § 4533(b)

227 50 U.S.C. § 4564(a).

228 For a history of such invocations, see Brennan Center for Justice, A Guide to Emergency Powers and Their Use (2018), https://www.brennancenter.org/analysis/emergency-powers. *See also* Chris Edelson, Emergency Presidential Power (2013) (surveying unilateral invocations of presidential emergency power in the national security context).