



To: Interested Parties

From: Jeremy Symons, Center for Energy & Environmental Analysis

Subject: Will permitting reform “solve” the 2,000 GW interconnection queue?

Date: August 5, 2026

Summary

As developers await approval from regulators and utilities to connect to the regional grid, unnecessary interconnection delays can adversely slow the buildout of utility-scale wind, solar, battery and electric transmission projects. [FERC](#) and [regional grid operators](#) have instituted significant reforms (for example, replacing grid reliability studies for each individual project with more comprehensive studies covering clusters of similar proposals). Their goal is to speed the process. Although the reforms are promising and provide anecdotal evidence of progress, they are too recent to quantify whether the timeline for interconnection approval will be significantly shortened.

The renewable energy and battery industries argue that further permitting reforms are needed from congress to solve the “backlog” of projects awaiting interconnection, specifically citing the 2,000 gigawatts (GW) of energy generation and storage currently in the interconnection queue across the United States.

For this memo, I explored the likely contributions of permitting reform in speeding renewables, and whether the 2,000 GW number sheds light on the clean energy case for permitting reform. After analysing the queue and comparing to pending permit reform proposals in Congress, I conclude that the 2,000 GW number is more likely to mislead than inform the discussion, for the following three reasons:

- (1) **As a result of the 2024 elections and the surge in AI-driven demand for new gas-fired electric power, the script has flipped and natural gas is now poised to be the biggest winner of a 2026 permitting reform deal than solar, wind, and batteries.**

The 2,000 GW currently in the interconnection queue includes natural gas. From 2024 to 2025, the amount of gas in the queue nearly doubled (even as the renewable energy queue fell significantly), and the amount of pending gas now exceeds the total amount of wind power in the queue.

The surging amount of gas has upended the likely impact of permitting reform. When permitting reform first gained prominence among clean energy proponents, President Biden was president, the IRA was in place, the surging demand of gas power for AI was not fully understood, and natural gas capacity in the queue was low. The world today is completely different. Demand for new gas is surging and the Trump administration will use every tool at its disposal – including any new permitting reform authorities – to speed gas while waging war on wind, solar and batteries.

Consequently, the script has flipped since 2024. The gas industry is poised to be the biggest winner of permitting reform. Among all the provisions being considered for permitting reform, the most consequential would benefit gas by giving the president unconstrained powers to categorically exclude major power projects and pipelines from NEPA without court review. Not coincidentally, the gas lobby is a leading proponent of getting permitting reform across the finish line in 2026.

- (2) **Congressional permitting reform proposals currently under consideration will have uncertain and likely marginal impacts on the scale and pace of renewable energy and transmission:** The potential impact of permitting reform proposals on speeding renewable energy projects is highly speculative. NEPA – a top target of permitting reform proposals – has little bearing on the interconnection queue backlog. According to multiple recent studies of renewable energy permitting, the evidence shows that NEPA affects only a small share of renewable energy projects, and projects with an EIS are, on average, completed at the same pace or faster than those that do not require an EIS. According to a 2025 study by Resources for the Future, the total amount of solar and wind projects delayed by NEPA from 2009 through 2023 through court challenges amounted to less than 4 GW, which is less than 1% of the current backlog.

Transmission proposals aimed at speeding regional interconnection to the grid are welcome, but also speculative and unquantified, especially when considering that implementation will depend on how the Trump administration responds.

- (3) **The queue of solar, wind and battery overstates planned investment and delivery of renewable energy.** While there is anecdotal evidence that abundant clean energy projects are “stuck” in the interconnection queue, the vast majority of pending projects have been proposed in the last 3 years. 1,893 GW has been proposed in the past three years (it is unclear how much of that is no longer in the queue, but presumably most of it). Further, 549 GW of capacity has already neared the permitting finish line and has a draft or executed interconnection agreement (IA) in hand. It’s also worth noting that the interconnect queue casts a wide net, comprising a wide array of speculative ventures that are unlikely to be developed in any scenario. Historically (2000-2019), only 13% of capacity that submitted interconnection requests reached commercial operations. The 600 GW decline in the interconnection queue between 2023 and 2025 is attributed in large part to tougher criteria and fees to discourage speculative projects in some regions.

Background and Purpose of this Analysis

Congressional negotiators are rushing to try to cut a deal on “permitting reform” in time for the lame duck session following the November elections. The odds are anyone’s guess, but congressional insiders may be getting more optimistic (online betting odds surged above 75% in early July in favor of a deal happening this year [before the market betting was shut down](#)). After a closed-door negotiation this week between top Democratic and Republican Senators, Senator Sheldon Whitehouse said the meeting went “smoothly.”

“We still have work to do, but everybody continues to be optimistic,” Whitehouse said, according to [Politico](#).

Democrats and the clean energy industry are seeking interconnection reforms (such as [this proposal](#) from Sen. Heinrich) to allow solar, wind, and storage to connect faster to the grid. According to Heinrich:

“Today, more than 2,000 gigawatts (GW) of energy generation and storage — more than twice the nation’s existing electric generation capacity — are waiting in interconnection queues, with projects spending more than five years on average waiting to connect and roughly five years before they begin operating.... Moving projects through the interconnection process faster is one of the quickest ways to increase energy supply, strengthen grid reliability, and help lower electricity costs.”

Republicans, the oil and gas industry, and the tech lobby – as well as some Democrats – are seeking NEPA rollbacks contained in the [House-passed SPEED Act](#) in order to speed construction of gas power, gas pipelines, and AI hyperscale data centers (see Appendix for an analysis of how the gas and tech industry will take advantage of the SPEED Act, if enacted).

The American Petroleum Institute and American Clean Power Association have [teamed up](#) to push to get a deal done this year while Republicans control both chambers of congress. As the oil and gas industry and renewable energy industries would both benefit from a deal, it’s not at all clear whether a bargain would increase or reduce greenhouse gas emissions. After all, US GHG emissions only go down if new renewable energy sources displace existing fossil fuel energy [sources](#).

The purpose of this analysis is to explore whether the amount of proposed power generation and storage projects in the interconnection queue shed any light on the potential clean energy and climate costs/benefits of a permitting reform deal.

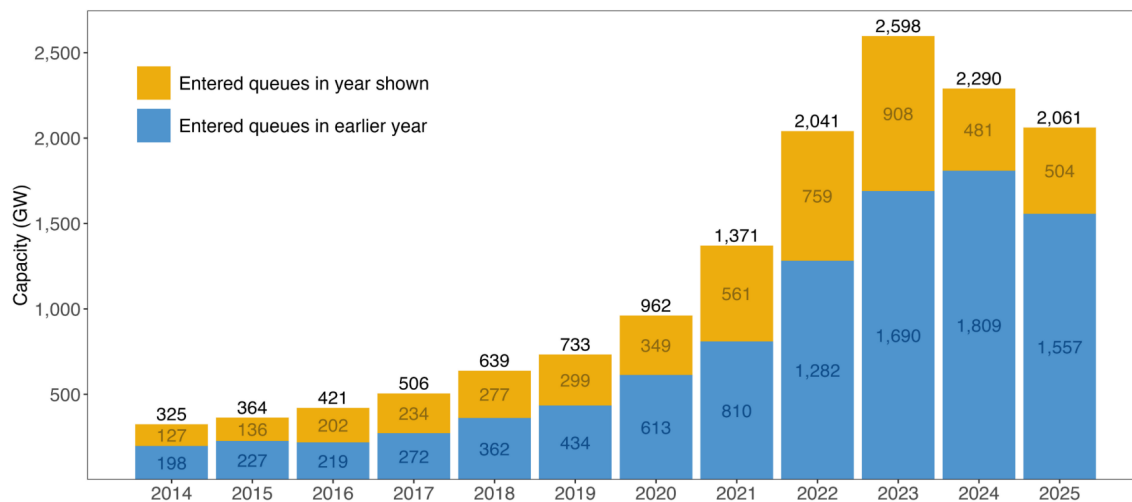
The Interconnection Queue

Source: [Berkeley Labs](#)

There is wide agreement that the interconnection process takes too long. RMI has a [good overview](#) of the reasons for those delays and suggested reforms. FERC and regional grid

operators are already implementing some significant reforms, such as [FERC Order 2023](#) to speed the work of assessing projects' impact on the grid. Although the reforms are promising and providing anecdotal evidence of progress, they are too recent to quantify whether the timeline for interconnection approval will be significantly shortened.

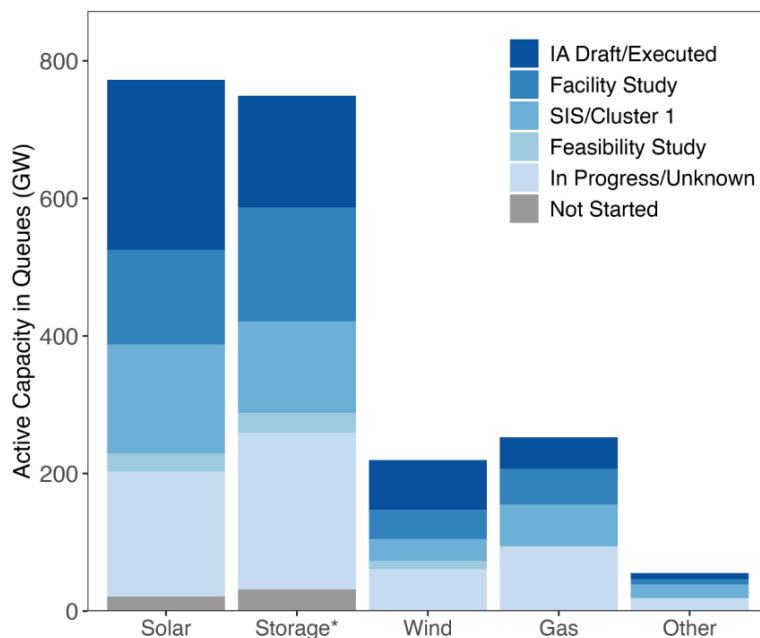
Total (cumulative) active capacity in queues decreased 10% in 2025 to 2,061 GW; new (annual) requests were roughly stable from 2024-2025



Note that some requests can be submitted and withdrawn in the same year; this chart only includes capacity remaining as of the end of each year. Therefore, the yellow bars are lower than the total capacity of new requests in a given year (as shown on slide 11). See <https://emp.lbl.gov/queues> to access an interactive data visualization tool.

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The 2,000 GW number represents the maximum power capacity of projects seeking to connect to the grid. While the number is enormous, it reflects a surge of recent projects – 1,893 GW has been proposed in the past three years. Further, as shown in the adjacent figure from Berkeley, 549 GW of capacity has already neared the permitting finish line and has a draft or executed interconnection agreement (IA) but has not yet reached commercial operations, including 256 GW of solar, 161 GW of storage, 76 GW of wind, and 45 GW of gas.



NEPA's Impact on Renewable Energy

[Multiple studies](#) have found that NEPA is not the primary holdup for renewables.

According to a [2025 study by Resources for the Future](#), only a small share of solar and wind projects required a NEPA review and the reviews did not delay projects, as they happened alongside the project development and interconnection timelines:

"We find that the solar and wind projects subject to NEPA review account for only a small fraction of the total utility-scale renewable capacity brought online from 2010 through 2023. These renewable projects completed the formal NEPA process in less time than the average time for all project types across all federal agencies."

According to another comprehensive review of litigation against utility-scale solar and wind projects (2009-2023) [by Resources for the Future](#):

"Ultimately, we find that wind and solar projects that faced court challenges have similar development timelines to wind and solar projects without court challenges."

They conclude that NEPA court challenges significantly delayed or halted 7 projects amounting to less than 4 GW. This demonstrates that NEPA is not the main story behind the 2,000 GW interconnection backlog.

Many transmission projects are also subject to NEPA. A 2024 study by Niskannen Center and Clean Air Task Force examined hundreds of transmission projects and found that the EIS process, with a media time of 3.7 years, was not a major factor except with the longest and most complex inter-state transmission lines:

"Lines that required an EIS make up only a small fraction, 3.5%, of all newly built electric transmission lines. However, they make up a proportionally larger share, 26%, of total new line miles."

How much of the interconnection backlog will be solved by a permitting reform deal?

The effect transmission reform will have on unlocking the interconnection queue is highly uncertain. There are no proven silver bullets for fixing the interconnection queue. America's grid operators, regulators, regulated utilities, investors, merchant operators, and demand load developers are a complex ecosystem.

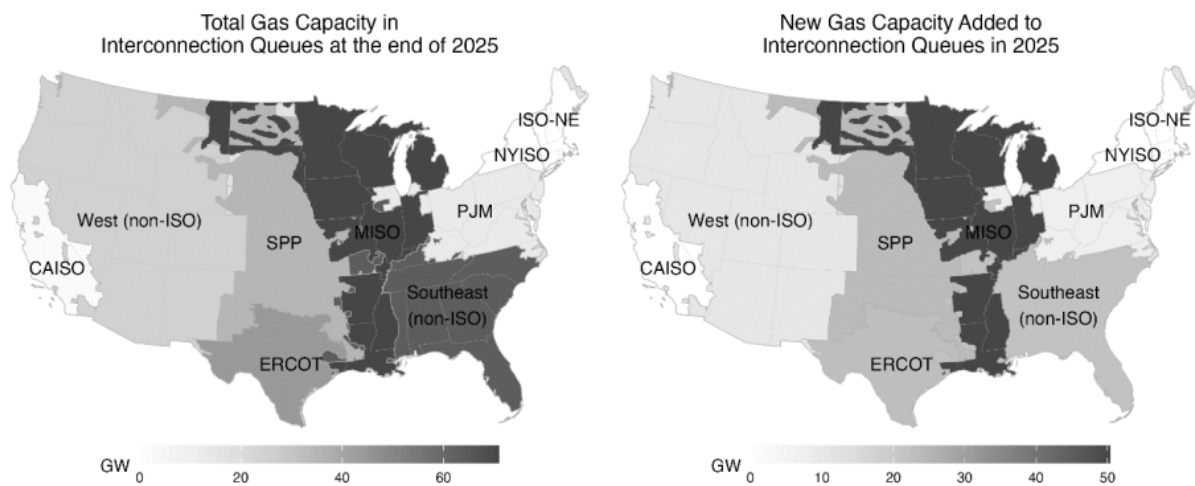
Multiple attempts at transmission reform, specifically with regard to interstate transmission lines, have been enacted over the years with little to show for it. Newer reforms, such as efforts to cluster reliability studies to avoid project-by-project assessments – are still being worked through.

The next phase of interconnection reform will likewise be an experiment with uncertain impact. The relative increase in clean energy deployment – to be judged against the relative increase in new gas power and pipelines from the same deal – is a guessing game.

Compounding this problem: the strong-arm tactics of the Trump administration to wage war against clean energy has shown no signs of melting away in the face of congressional resolve to pursue an all-of-the-above energy deal. With only two years left in his term, Trump will do exactly what he has done to date – defy the law and fight court verdicts all the way to the supreme court, leaving projects in limbo for years. Trump has already defied lower court rulings to reinstate wind energy permits and leases, rolling over “red lines” drawn by Senate Democrats as the price to continue negotiations.

It's not just Trump. The American Clean Power Association had to [withdraw its support](#) from the final permitting bill that passed the House due to Republican amendments further undermining congressional efforts to reinstate wind permits. House Republicans said the bill would not have made it across the finish lines without the anti-wind changes.

What Is the impact of permit reform in locking in long-term natural gas power supplies?

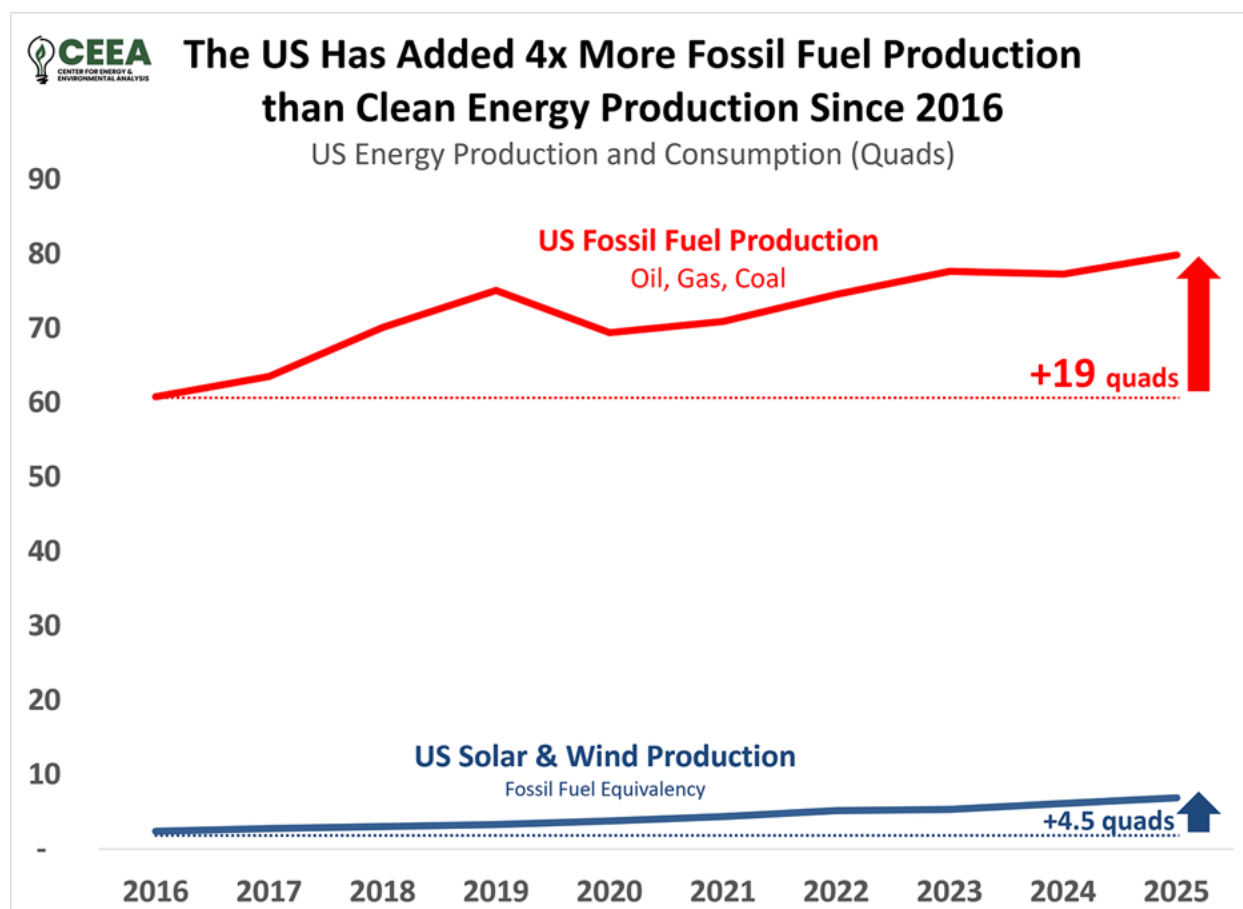


Natural gas accounts for 250 of the 2,000 GW in the queue. Notably, the amount of gas in the queue almost doubled last year – just a snippet of the surge that is underway to power AI hyperscale data centers. This surge is a five-alarm warning bell that gas is going to be a big beneficiary of a permitting reform deal. I explore this in detail from the perspective of statements gas companies are making to investors – in my recent Substack [here](#).

Most claims that permitting reform will benefit climate are based on pre-2025 energy forecasts that don't reflect the political and market upheavals of the past 18 months.

From a climate perspective, the question of what happens to fossil fuels matters. Despite more than a trillion dollars of US clean energy investments over the past decade, US fossil fuel production has surged and consumption has not declined. It's a problem of scale as well as the oil and gas industry's success in finding new markets (exports, petrochemicals, data centers) to offset any market share losses to renewables.

US fossil fuel production has increased by an amount more than four times larger than the growth of solar and wind since 2016 — 19 quadrillion Btus of increased fossil fuel production between 2016 and 2025, compared to 4.5 quads of equivalent solar and wind production.⁴



The lesson from recent history, therefore, is that we need to pay close attention to what the oil and gas industry is planning, and what it hopes to get out of any deal.

There has not been any published, quantified analysis of the GHG impacts of a permitting reform deal that include both the benefits for clean energy companies — mostly via grid interconnection reforms — and the benefits for fossil fuel companies from the SPEED Act, which would give President Trump the power to exclude new gas power and pipeline projects from NEPA by prohibiting court reviews of his actions.

Any discussion of permit reform should acknowledge and explore the oil and gas industry's goals in backing this effort, especially since the political balance of power in Washington heavily favors the oil and gas industry, whose top ask is giving President Trump unchecked power to exempt new gas power projects and pipelines from NEPA (as contained in the SPEED Act).

"Clean energy is cheaper" does not mean "clean energy wins." Notably, most gas deals – such as Microsoft's 2.7 GW [deal](#) with Chevron – lock companies into purchasing gas power for 20 years. This is critically important in terms of how the gas industry is seeking to use permitting reform to lock in deals that insulate the industry from renewable energy's increasing economic advantages.

Whether through private long-term contracts or the backing of utility regulators, the gas industry's plans to lock in new gas dependency are a huge problem for the transition to clean energy, because the intrinsic advantage of solar and wind is that they have minimal operational costs to procure energy once they are built. Gas, on the other hand, costs more to build and requires additional cash to pay for gas supplies. If the upfront costs of gas are removed from the equation, then cleaner alternatives have a much steeper hill to climb to outcompete gas. Once locked in and paid for, new gas power plants will be very hard to shake loose from firm power supplies.

In a conversation with Jigar Shah, he noted that behind-the-meter gas turbines are extremely expensive to run and will not be dispatched in the long run because clean energy will be cheaper, and so there is little risk of lock-in. Behind-the-meter gas is an increasing share of power for AI hyperscale data centers. Those economics become more complicated, however, with larger, co-located power plants (backed by long-term contracts) and new power plants constructed by regulated utilities.

Appendix

HOW THE SPEED ACT STRIPS COMMUNITIES OF THEIR VOICE IN FEDERAL DECISIONS ON GAS POWER AND GAS PIPELINES

The top “permitting reform” goals of the fossil fuel and technology lobbies are to change NEPA to make it easier for corporations to build the energy needed for data centers – especially the gas turbines, gas pipelines, and electric power substations needed for power. These industries thrive on keeping communities in the dark and threatening communities with legal action.

NEPA provides two essential building blocks for good decision making: transparency and community engagement.

Before NEPA was enacted in 1969, many communities weren’t aware the government had greenlighted consequential projects until the bulldozers arrived. NEPA opened the secretive dealings between corporations and government agencies to public scrutiny, requiring transparent assessments of the impacts of big projects and an opportunity for affected communities to directly engage. Those tenets quickly became “[one of America’s most successful exports](#)” as similar laws were adopted across the globe.

In 2025, Trump [issued an executive order](#) directing his administration to bypass NEPA by abusing a provision of the law called “categorical exclusions.” Trump’s move preys on a commonsense provision of NEPA frequently used to ensure that NEPA does not create red tape for actions that typically don’t have a significant environmental impact. For example, FEMA has a categorical exclusion for deploying emergency aid and for search and rescue operations.

Now, Trump wants to broadly give these exclusions as part of a new pay-to-play system for tech and gas companies. According to the executive order, any corporation committing at least \$500 million to build a data center and associated “natural gas pipelines, ... natural gas turbines, coal power equipment” and other equipment would get a free pass.

Here’s the problem for industry: An executive order does not supersede the law. It’s risky to rely on Trump’s executive order and associated regulation rollbacks because NEPA is still the law of the land, and the courts might tell developers to go back to the drawing board since they failed to comply with the law.

The solution for industry is to get congress to change the law in two profound ways that are cleverly hidden in the SPEED Act:

(1) Blank Check to Trump: The SPEED Act specifically prevents the courts from reviewing Trump’s decisions of what qualifies for categorical exclusions.

(2) Permanent Permits: The SPEED Act attempts to make government permits permanent by prohibiting federal agencies from amending or revoking permits except under circumstances that are far narrower than current law. Aside from fraud and breach, which are difficult to prove, the only grounds for agencies to revoke a permit would be very narrow circumstances. Namely, an agency would have to prove that revoking a permit is necessary to “prevent specific,

immediate, substantial, and proximate harm or damage to life, property, national security, or defense.”

This proposal completely turns federal permitting on its head. Environmental and energy permits are required by laws that protect the broad interests of the public against the narrow interests of corporations. The power to revoke permits allows the government to continue to steward the public interest. If the oil and gas lobbyists get their way and permits are permanent, then every permit issued by the federal government bestows a new “right” to private corporations.

Consider, for example, the deep water oil drilling permits issued before the Deepwater Horizons disaster. Under the SPEED Act, the government would have had no authority to require updated permits based on the lessons learned.

Democrats are particularly interested in permanent permits because they are hyper-focused on reversing Trump’s moves to revoke offshore wind permits. As one lawyer pointed out to me, the “national security” exception in the SPEED Act is the same loophole Trump relied on to cancel the wind permits in the first place, and there would be nothing to stop him from doing it again.

It’s hard to underestimate the dangers of these two items in combination: If this bill passes, then President Trump could invite companies to submit waves of permit applications — including their current plans and anything they might hypothetically want to do. The courts and communities could do nothing to stop the Trump administration from rubber stamping the permits...now or forever.

As [this opposition letter from 150 organizations](#) points out, there are many additional ways that the SPEED Act strips communities of their power. But frankly, if the tech and gas industries succeed in getting permanent permits and an exclusion from NEPA, then they won’t even need the rest.