



Bipartisan Policy Center

Mitigating Unique Permitting Barriers to Specific Energy Technologies

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Introduction

To meet energy and climate goals, the United States needs to accelerate the deployment of a wide variety of energy technologies in areas such as critical minerals, carbon capture and storage (CCS), geothermal energy, and hydrogen. While all energy projects face some similar permitting challenges, specific technologies also face their own unique permitting hurdles. For example, while oil and gas projects can receive a categorical exclusion from the requirement to prepare an environmental impact statement (EIS) for test well projects, no such categorical exclusion exists for geothermal projects.

In July 2023, the Bipartisan Policy Center convened a private roundtable to explore the pros and cons of specific permitting reforms that tackle challenges unique to individual energy technologies. The workshop was conducted under Chatham House Rule and brought together experts on permitting and technology-specific regulatory challenges from across the political spectrum. This brief does not provide a comprehensive list of permitting reform options, rather it focuses on proposals that have been introduced in legislation this Congress, supplemented by suggestions from roundtable participants.

This roundtable and a separate roundtable that focused on permitting for nuclear energy projects were the fifth and sixth in a series of BPC-convened roundtables on permitting reforms. Prior roundtables focused on public engagement, linear infrastructure (transmission and pipeline), additional National Environmental Policy Act (NEPA) reforms, and judicial review. Rather than seek consensus, the goal of these roundtables has been to identify policies that would drive impact and are also politically viable.

Issue briefs from previous permitting roundtables may be accessed through the [BPC website](#)¹; they include:

1. [Public Engagement Roundtable](#)²
2. [Permitting Linear Infrastructure Roundtable](#) (i.e., transmission and pipelines)³
3. [Judicial Review Roundtable](#)⁴
4. [Remaining NEPA Reform Roundtable](#)⁵
5. [Nuclear Energy Licensing and Permitting Roundtable](#)⁶

Critical Minerals

Option: Expand the 2015 Fixing America's Surface Transportation Act (FAST-41) to include all federally regulated mining, processing, and refining projects for critical minerals

FAST-41 establishes a process for the coordinated and timely review of covered infrastructure projects involving multiple federal agencies, with the goal of reducing regulatory delays and expediting project approvals. There was broad support for FAST-41 at BPC's July 2023 roundtable: As one participant explained, this legislation offers a good model because it does not cut environmental or regulatory corners. Rather, FAST-41 aims to promote a more efficient and effective federal permitting process by increasing agency coordination and providing increased transparency.

Mining projects were not originally included in FAST-41, but a [2020 rule](#) from the federal Permitting Council added mining to the program.⁷ That rule, however, left out mineral processing and refining projects. Thus, roundtable participants discussed the value of adding processing and refining projects. This step was taken in September 2023, when the Permitting Council introduced a [new rule](#) covering all critical mineral mining, processing, and recycling projects under FAST-41.⁸ While generally

supportive of the council's action, roundtable participants had some concerns about establishing this policy through regulation rather than by statute.

Specifically, one roundtable participant emphasized the importance of adding critical minerals projects by changing the statutory language of FAST-41. This would ensure that future administrations do not reverse course and provide greater certainty for project developers. Furthermore, the Permitting Council's recent action was not without controversy: while it expanded FAST-41 eligibility to critical mineral processing and recycling projects, eligibility was narrowed to projects that involve critical minerals, rather than all mining projects (as under the earlier, 2020 rule).

Option: Allow the Environmental Protection Agency (EPA) to temporarily waive Clean Air Act and Solid Waste Disposal Act requirements for the processing of critical minerals if a shortage causes national security concerns

Under this policy option, a temporary waiver of any requirement under the Clean Air Act or Solid Waste Disposal Act could be issued by the EPA Administrator and the Secretary of Energy to allow for the processing or refining of critical minerals at a critical energy resource facility. [The Lower Energy Costs Act of 2023 \(HR1\)](#) includes a policy that would allow domestic mineral processing projects to receive a 90-day waiver if needed for national security concerns.⁹

Roundtable participants were generally skeptical of the efficacy of this policy. They noted that its benefits are unclear as long as the United States lacks a robust critical mineral processing industry to begin with. Further, the ability to access temporary waivers, by itself, is unlikely to drive investment in capital intensive domestic mineral processing projects. The prospect that such waivers would be available in the event of a future national security crisis would not convince developers to build projects today. Other participants worried that a future administration could overuse the temporary waiver option by issuing waivers on a rolling basis.

Participants also strongly agreed that this option, because it involves waiving Clean Air Act requirements, is politically controversial. The general consensus at the roundtable was that the limitations of this policy, combined with its political controversy make it a policy to avoid.

Option: Require mining companies to provide financial assurance in their reclamation plans

This option would mandate that mining companies provide financial assurance in reclamation plans. Financial assurance can help ensure that reclamation costs do not fall on state or local communities if mining

companies abandon their operations. Such assurance could decrease local opposition to mining projects.

A roundtable participant began the discussion by noting that the inclusion of financial assurance in reclamation plans is already standard practice in the United States. But this assurance often takes the form of self-bonding or corporate guarantees, both of which are tied to the value of the company. If a company goes bankrupt, funding for reclamation efforts may also disappear. Financing mechanisms are needed that do not put reclamation efforts at risk if companies go bankrupt.

There was general consensus among roundtable participants that mining companies should be required to pay for reclamation. However, there was no consensus on more assured financial mechanisms or tools to replace the current reliance on self-bonds and corporate guarantees.

Option: Create incentives for third parties to clean up abandoned mines, including by limiting liability for organizations that undertake cleanup efforts

The United States has over 140,000 abandoned hardrock mines, of which 22,500 pose environmental hazards [according to the Government Accountability Office \(GAO\)](#).¹⁰ Companies that operate mines today are responsible for the cleanup and decommissioning of these mines. However, most of America's abandoned mines date back to the 19th and early 20th centuries, before modern laws on mining reclamation and sustainability were introduced. Many of these mines remain a source of local environmental pollution, particularly when they continue to contaminate nearby water sources with toxic metals. Because their original owners are no longer operating, however, nobody is responsible for the cleanup. And third-party organizations that might want to undertake cleanup efforts are often discouraged from doing so because getting involved might make them liable for the mines and associated environmental hazards.

The 2021 Bipartisan Infrastructure Law (BIL) included [\\$725 million](#)¹¹ to help finance the mapping and cleanup of abandoned mines across America via grants to states and tribes. However, the BIL did not address liability concerns for third parties that voluntarily undertake to clean up these sites. The bipartisan would tackle this issue by limiting liability for such organizations.¹²

Participants broadly agreed that the cleanup of abandoned mines was important to gain public support for new mining projects; they also shared the view that addressing liability concerns and providing incentives for third-party cleanup efforts could make a significant difference. Overall, there was strong support for this policy.

Option: Provide enhanced guidance to mine operators by organizing pre-consultation meetings, designating cross-agency case workers, and improving reference materials

New mine projects are often subject to regulatory requirements set by multiple agencies, such as the U.S. Forest Service (USFS) and Bureau of Land Management (BLM). If a mine developer changes plans after submitting an application, there is generally little guidance available to help the developer avoid regulatory delays. This policy option aims to help companies navigate different circumstances so they have a better understanding of how project changes would impact the regulatory process. An additional objective is to increase agency coordination during reviews and pre-consultation efforts so that regulators and project developers alike have better information to navigate the regulatory process.

Roundtable participants strongly supported increased agency coordination, particularly better information sharing between the USFS and BLM. Participants also saw the value of clear guidance and pre-consultation meetings. However, some participants also noted that the USFS and BLM lack the technical expertise to address all issues with mining projects. Therefore, one participant suggested increased coordination with the U.S. Geological Survey (USGS), which specializes in subsurface geology and can provide helpful expertise on technical questions.

Option: Establish royalties for critical minerals extracted from federal lands

A controversial option is to transform the current lease-based policy for mining on public lands into a royalties-based policy. Hardrock mining is the [only extractive industry](#) that does not pay royalties for operating on public lands.¹³ According to a [recent report](#) by the Interagency Working Group on Mining Laws, Regulations, and Permitting, a 2% royalty on gross revenue from the sale of minerals extracted from public lands in 2019 would have generated \$98 million.¹⁴ A royalty rate of 8% would have generated \$392 million. Currently, mine operators are only [required to pay](#) a processing fee of \$20, a location fee of \$40, and a maintenance fee of \$165 for every 20 acres of public land they use.¹⁵

Roundtable participants discussed the idea of establishing royalty fees for minerals extraction and the potential impacts of this policy on the domestic mining industry. The discussion began with an acknowledgment that royalties would increase the financial burden for domestic mining projects on public land. Most participants agreed that a policy that increases costs and reduces incentives for domestic mining could be seen as counterproductive to current efforts by Congress and the White House to promote investment in U.S.-based mining and processing capacity and diversify away from Chinese mineral imports. Several participants pointed

out that domestic mineral producers already struggle to be cost-competitive with low-cost Chinese products.

In the context of an economically robust domestic minerals industry, by contrast, many participants agreed that a royalty system makes sense in concept. Royalties might be more palatable if they are tied to programs that benefit nearby communities, such as a remediation fund or watershed restoration fund. With the current effort to reshore supply chains and compete with cheaper Chinese imports in mind, however, there was general recognition that now is not the best time to introduce the new fees.

Additionally, there was broad concern about whether a royalties policy could attract political support in Congress. The current leasing scheme has been in place since 1872. Changing this long-standing structure would be difficult and would likely need to be paired with other policies designed to support the domestic mining industry, such as policies to enable more efficient permitting or reduce other barriers to investment.

Carbon Capture and Storage (CCS)

Option: Establish enforceable timeline for EPA to process State Class VI primacy applications

EPA recently designated a new category of wells, Class VI, for the geologic sequestration of carbon dioxide (CO₂). Such wells are needed to enable the deployment of carbon management projects, which are expected to play a critical role in achieving climate goals. [ClearPath estimates](#) that a minimum of 650 Class VI wells will be needed for geologic storage of CO₂ under a net-zero-by-2050 scenario.¹⁶ Permit applications for this class of wells are generally processed by the EPA; approval can take up to [six years](#).¹⁷ The idea of giving states primacy over the permitting of Class VI wells is gaining attention as a way to speed the deployment of carbon storage projects. A recent [BPC blog](#)¹⁸ discusses the role of state primacy:

State primary authority, or “primacy,” is the ability for a state to carry out EPA’s authority under the Safe Drinking Water Act in approving a specific type of permit. This [approach to processing permits](#) has been used for decades for other classes of permits and has the advantage of leveraging state geologic survey expertise on a state’s unique geology when evaluating a permit application. The UIC [Underground Injection Control] program has [granted primacy authority](#) for many different classes of wells in 31 states

and three territories, but only two* states have primacy for Class VI permits today—North Dakota and Wyoming.

As EPA expands staff expertise to process permits at the federal level, state primacy authority can play a complementary role to ensure project developers are not stuck waiting for permit approvals before continuing to develop a carbon management project.

Fortunately, several states: Louisiana, Texas, West Virginia, and Arizona have taken steps toward primacy approval. Louisiana is the furthest along in the process, with [EPA issuing a proposed rule](#) for primacy in April 2023. [*Update: Since publication of this blog, Louisiana’s Class VI primacy application was approved on December 28, 2023.]

With many states seeking Class VI primacy, roundtable participants discussed establishing a timeline for EPA to review these primacy applications. Currently, there is no enforceable timeline for EPA to issue final decisions on Class VI primacy applications. In the interim, Class VI projects must continue to go through the EPA permitting process. While participants broadly supported timelines, they were skeptical that a statutory timeline would be effective. Instead, there was general support for increasing transparency and better standardizing the primacy application process. Many participants agreed with the idea of establishing milestones for EPA action as part of the review process. This would give applicants greater clarity about their progress through the permitting process. Another participant suggested that the EPA could send a letter to the applicant after 180 days that outlines updates, challenges, progress, and an expected completion date.

Option: Allow EPA to issue aquifer exemptions for Class VI wells as is allowed for other well types

Currently, EPA aquifer exemptions are available for Class I, II, III, IV, and V wells, but not Class VI wells. [Aquifer exemptions](#) allow underground sources of water that do not and will not serve as a source of drinking water to be used by energy, mining, and other companies for oil or mineral extraction or disposal purposes in compliance with the Safe Drinking Water Act.¹⁹ According to EPA regulations, to inject fluids into an aquifer, the aquifer must have more than 10,000 parts per million (ppm) total dissolved solids (TDS). Drinking water sources typically have TDS below 3,000 ppm. For most types of wells, waivers are allowed on a case-by-case basis if TDS is between 3,000 and 10,000 ppm. This type of waiver is not allowed for Class VI wells. EPA can, however, issue an injection depth waiver for Class VI wells, which is a different waiver process than the aquifer exemptions that can be given to Class I, II, III, IV, and V wells. The option of allowing EPA to grant aquifer exemption waivers would provide parity among all six well classes.

Participants agreed that exemptions should be consistent across all well classes, noting that Class VI wells should not have to clear a higher bar. A participant added that if fracking fluid can be injected into an aquifer with an aquifer exemption, CO₂ should be allowed as well. Another participant noted that this policy option is worth pursuing, but might only be relevant to a handful of projects based in the Rocky Mountains. Overall, there was broad support for this policy, but also a recognition that its impact would be limited.

Option: Establish a categorical exclusion for adding carbon capture, utilization, and storage (CCUS) to an existing power plant or industrial facility

According to the Council on Environmental Quality (CEQ): “A categorical exclusion (CE) is a class of actions that a Federal agency has determined, after review by CEQ, do not individually or cumulatively have a significant effect on the human environment and for which, therefore, neither an environmental assessment nor an environmental impact statement is normally required. The use of categorical exclusions can reduce paperwork and save time and resources.”²⁰ Recently, the Department of Energy proposed a new categorical exclusion for certain battery storage systems.²¹ Roundtable participants discussed the value of establishing a new CE for the installation of CCUS technology at an existing power plant or industrial facility.

For CCUS projects that are required to go through the National Environmental Protection Act (NEPA) process, there was general agreement that a CE would accelerate the process and would be helpful. Participants noted that adding CCUS at an existing facility reduces other kinds of emissions, as well as greenhouse gas emissions, which provides health benefits in addition to climate benefits. But participants also noted that CCUS technology lacks support from some stakeholders, so this option may face political opposition.

Option: Establish a categorical exclusion for adding additional direct air capture (DAC) facilities to an operational DAC hub

As recommended in BPC’s 2022 report “[The Role of Categorical Exclusions in Achieving Net-Zero by 2050](#),”²² this policy would establish a new CE for adding additional DAC facilities at an existing DAC hub.

“The Infrastructure Investment and Jobs Act appropriated \$3.5 billion for four regional DAC hubs. These hubs will consist of several elements, including DAC facilities, carbon dioxide sequestration wells, carbon dioxide transportation infrastructure, power generation, and carbon dioxide utilization facilities. These hubs will have “room to grow” and it is expected that additional DAC facilities, including pilots, demonstration projects, and commercial scale facilities, will be added on to existing hubs over

time. As DOE is doing the initial permitting review for each hub, they should do a programmatic review that includes designating a categorical exclusion for adding additional DAC facilities to an operational DAC hub.”

Roundtable participants recognized that a CE could accelerate numerous future projects considering that DAC hubs are federally funded and therefore subject to the NEPA process. Participants also noted that because the initial DAC hub infrastructure will have already gone through the NEPA review process, adding additional facilities at the same site would likely have minimal environmental impact. Overall, there was strong support for this policy, with one participant declaring that it could be considered the “poster child” of what a categorical exclusion should be used for.

Geothermal

Option: Establish categorical exclusions for geothermal test wells

This policy would establish a new CE for geothermal test wells on federal land, creating parity with oil and gas test well projects that already have a CE. This policy was also recommended in BPC’s 2022 report “[The Role of Categorical Exclusions in Achieving Net-Zero by 2050](#).”²³

“The vast majority of viable geothermal resources exist on federal land, meaning most geothermal exploration is subject to NEPA review. Creating a new categorical exclusion at DOI for geothermal exploration on federally managed lands would facilitate investment in geothermal energy and empower clean energy companies to develop geothermal energy by reducing the high up-front costs and uncertainty associated with lengthy environmental reviews for small-scale test drilling.”

As with other CE-related policy options, roundtable participants broadly supported a new CE for geothermal wells. The general view was that there is no reason oil and gas test wells should receive a CE but geothermal test wells should not. Since the nation’s geothermal resources are largely located on federal land, this policy could have a large impact on the geothermal industry.

Option: Clarify that geothermal lease reinstatement is not a ‘major federal action’ under NEPA

The Fiscal Responsibility Act [lists](#) specific actions that are not considered “major federal actions,” and therefore do not trigger the NEPA process.²⁴ This policy option would add geothermal lease reinstatement to the list of actions that are exempt from NEPA review. The initial construction of a new geothermal facility would still be subject to NEPA but subsequent reinstatements would be exempt.

Roundtable participants broadly supported this option. They saw no reason that a geothermal project that had already received approval would need to continue going back through the NEPA process for reinstatement.

Option: Require annual federal lease sales for geothermal energy

The Department of Interior (DOI) is currently required to hold lease sales for geothermal resources at least once every two years. These lease sales allow federal land to be developed for geothermal projects. Roundtable participants considered changing the current requirement so that geothermal lease sales must be conducted annually. This would put geothermal lease sales on par with lease sales for offshore wind and oil and gas projects, which benefited from recent BIL provisions that require federal agencies to conduct annual lease sales for those type of projects.

Participants had no objections to making this policy change and saw the value of accelerating the rate at which federal land is made available for geothermal development. There was broad consensus that it makes sense to standardize annual lease sale requirements across various clean energy technologies.

Option: Establish a 30-day timeline for reviewing geothermal drilling permits (GDPs)

Developers of geothermal projects on federal land must receive a GDP before they can break ground. [GDPs are typically issued](#) by the BLM based on an environmental assessment (EA) that results in a “finding of no significant impact” (FONSI) or a “determination of NEPA adequacy.”²⁵ A GDP issued on the basis of an EA can take about five months.²⁶ A provision that would require GDPs to be completed within 30 days of submission was included in [the Lower Energy Costs Act of 2023 \(H.R.1\)](#).²⁷

While roundtable participants generally approved of permitting timelines that help accelerate the decision-making process, there were questions about the feasibility of a 30-day timeline. Participants did not believe that BLM has the staff capacity or expertise needed to meet accelerated permitting deadlines. Some participants suggested that this policy could put the agency under pressure to increase administrative capacity. Others thought that it

would need to be paired with legislation that helps BLM staff up, whether through increased appropriations or staffing authorities. Overall, there was some skepticism that this policy change, pursued on its own, would work as intended. Timelines in general, however, were viewed as positive, so a timeline that is greater than 30 days but shorter than five months, could be productive, as long as agency staffing and resources are sufficient to achieve this goal.

Option: Clarify that geothermal projects on state or private lands in which the federal ownership interest is less than 50% are not subject to federal permitting requirements

Roundtable participants discussed another policy provision in [the Lower Energy Costs Act of 2023 \(HRI\)](#)²⁸ clarifying that geothermal projects are not subject to federal permitting requirements if the project is located on land in which the federal government does not own at least 50% of the subsurface mineral estate. This clarification would put geothermal projects in-line with oil and gas projects, which are already exempt from federal permitting requirements in these cases.

Participants broadly supported this policy on the basis that it would establish parity between geothermal and oil and gas projects in terms of federal permitting requirements. A participant noted that this change would help resolve complicated issues of intermingled land ownership. In the west, where federal land ownership is extensive, intermingled ownership and “checkerboarding” commonly result in situations where the federal government has a minority stake in the subsurface mineral estate of a property. This change would give developers greater clarity about which projects will and will not be subject to NEPA review.

Hydroelectric Power

Option: Affirm a 2-year licensing process for next-generation hydropower resources

The Federal Energy Regulatory Commission (FERC) has sole authority over licensing hydropower projects. A [2021 DOE report](#) found that, on average, FERC takes five years to review and issue a license for a new hydropower project and 7.6 years to relicense an existing hydropower project.²⁹ This policy, which was included in the bipartisan [Hydropower Clean Energy Future Act](#), would establish a mandatory 2-year timeline for FERC to complete a licensing review for next-generation hydropower projects.³⁰ The legislation defines “next generation” as a hydropower project “that utilizes

turbine and generation technology, an energy storage method, or a measure to protect, mitigate and enhance environmental resources, that is not in widespread, utility-scale use in the US as of the date of enactment.”

Roundtable participants saw the potential benefit of an accelerated timeline for licensing certain types of hydropower projects, including non-utility sized projects, such as projects in an irrigation, water supply, industrial, agricultural, or water conduit system. However, some participants did not believe two years is a reasonable timeline for more intensive projects. Projects that add infrastructure to existing dams raise significantly fewer licensing and environmental issues than projects that construct new dams. Participants emphasized the significant clean energy potential of powering existing dams that currently lack hydropower infrastructure.

Option: Exempt small hydropower projects that do not have significant environmental impacts from FERC licensing requirements

Under this policy option, small hydropower projects that do not have significant environmental impacts would be exempt from the FERC licensing process. The option was included in the [Hydropower Clean Energy Future Act](#)³¹, which defines “small hydropower projects” as projects with an installation capacity of less than 40 megawatts (MW). Relative to [DOE’s definition](#)³² of small hydropower projects, which is currently set at a much lower threshold of 10 MW, the 40-MW threshold would allow a larger number of projects to qualify for an exemption.

While roundtable participants did not take a position on specifically what size project should qualify as “small,” there was agreement that this policy option could be worthwhile, provided there is a reasonable process for assessing environmental impact, such as a programmatic review. If the conclusion is that a project will not have a significant impact, it should not be required to go through FERC’s lengthy licensing process.

Option: Exempt closed-loop pumped storage projects that do not utilize federal land or impound navigable waters from FERC licensing requirements

Closed-loop pumped storage projects involve two reservoirs that are entirely separated from other bodies of water. Energy is stored by moving water between the reservoirs, spinning a turbine in the process. This policy option would exempt such projects from FERC’s hydropower licensing process, provided they are not located on federal land and do not impound navigable waters.

There was consensus among roundtable participants that closed-loop pumped hydro projects should be exempt from the FERC hydropower licensing process because they are, by definition, completely contained and do not interact with other bodies of water. A few participants noted

that this policy change will have a relatively small impact in the near term because there are not many closed-loop pumped storage projects. However, as the need for energy storage increases with the expanded deployment of intermittent renewable generators, this policy may have greater impact.

Conclusion

It is clear that additional, technology-specific policy reforms could be useful, in combination with the more broad-based permitting changes discussed in previous briefs, to achieve a more efficient overall permitting system for energy projects. BPC remains committed to educating stakeholders about promising options for permitting reform that help advance the broadly shared goals in terms of energy reliability, affordability, and reduced emissions while maintaining protections for the environment and public health and safety. The next issue brief in this series will provide a comprehensive analysis of all the permitting reform policies discussed in our roundtable meetings to date in an effort to identify those options that are most likely to be impactful and attract bipartisan political support.

Endnotes

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