



Permitting Modernization and Reform





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Table of Contents

Introduction	3
The Facts	3
Infrastructure Permitting Proves Time Consuming and Increasingly Risky.....	4
Natural Gas Infrastructure	8
Hydropower	10
Electricity Transmission	13
Federal Lands	16
Wind.....	17
Solar	18
Geothermal.....	18
Extraction.....	19
Federal Spending	20
Recent Developments in the Review Process	23
Recommendations and Conclusion	25

Introduction

Since 2005, the United States has led the world in reducing greenhouse gas emissions. While 2021 did see an increase in United States emissions, they were still below 2019 levels and are expected to continue to trend down.¹ Bringing on a new generation of clean energy infrastructure needed to assure reliable power and continued emissions reductions will require the development of new resources, technologies, and upgrades of existing infrastructure. The permitting maze, increased red tape, and legal delay, however, pose barriers to the deployment of clean technologies and access to the domestic resources necessary for a clean energy future. The existing scheme of federal, delegated, and state reviews and consultations is time-consuming, costly, and increasingly risky for developers. The result of the current system is a delay in deployment of technologies and resources necessary to reduce global emissions and abate climate change.

The National Environmental Policy Act (NEPA), in conjunction with varied statutory authority among state and federal agencies, has created an inefficient and complicated permitting system for developers of diverse types of infrastructure and resources to navigate. NEPA is triggered by federal decision making whether it be to disperse funds or issue a permit. The result is years of review and litigation.

The existing inefficient and complex permitting system in the U.S. not only delays the physical construction of a project, but it also increases costs, reduces its financial viability and, more broadly, increases risk for investors, thereby reducing the incentive to invest. An effective infrastructure policy should re-examine the law, identifying opportunities that could remove obstacles, accelerate deployment, and unleash private-sector investment.

Entrepreneurs, businesses, investors, and consumers alike would benefit from a demonstrated long-term commitment by the federal government through the passage of legislation that would effectively modernize and make the siting and permitting system more streamlined and efficient. Legislation is less susceptible to the changing policy initiatives of new administrations and reduces the risk associated with investing in innovative technologies. In particular, legislation should focus on improved inter-agency coordination and ensure timely decisions by cooperating agencies and state governments, provide expedited permitting processes for infrastructure that has been deemed a priority, and reduce the categories of projects subject to review.

The Facts

The United States has reduced its annual emissions by nearly a billion metric tons since 2005.²

Much of this reduction can be attributed to the reduction in emissions from the power sector. Until 2015, the power sector contributed the greatest percentage of domestic emissions.

¹ "United States Nationally Determined Contributions." *United Nations: Climate Change*, <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf>

² "U.S. Greenhouse Gas Emissions and Sinks." *U.S. Environmental Protection Agency*, (2020). <https://www.epa.gov/sites/production/files/2020-02/documents/us-ghg-inventory-2020-main-text.pdf>

That distinction now belongs to the transportation sector as the result of the significant emissions reductions in the power sector.³

Natural gas infrastructure provided consumers access to a lower cost and lower-emissions fuel source while higher-emissions, coal-powered generation capacity was retired.⁴ In addition, the diversification of power generation and improvements in energy efficiency contributed to the decline in power sector emissions.⁵ The adoption of utility-scale wind, solar, as well as rooftop solar resulted in a near doubling of net generation from these sources between 2010 and 2020.⁶ The installation of these sources, along with battery storage, is projected to continue growing.

The diversification of power sources in combination with their remote locations has created electric transmission challenges. The Department of Energy (DOE) estimates that transmission congestion — a problem caused by lack of transmission access — imposed \$4.8 billion in economic costs in 2016, and that cost is expected to rise.⁷

Infrastructure Permitting Proves Time Consuming and Increasingly Risky

Infrastructure projects are subject to varied permitting regimes depending on the type of infrastructure under review and its geographic location. While the permitting of some types of infrastructure is expressly within the authority of a federal agency, other types of infrastructure are subject to federal review because they are sited on federal lands or relying on federal spending. In either case, under the National Environmental Policy Act (NEPA), environmental review must be completed if a federal agency's decision regarding the project constitutes "a major federal action that may significantly affect the quality of the human environment." The goal of completing NEPA review is to identify the potential impact to the environment should the proposed activities take place and identify measures to mitigate that impact.

NEPA review includes a series of required steps. The agency conducting the review must determine whether to categorically exclude a project from review, complete an environmental assessment (EA), or require an environmental impact statement (EIS), the most fulsome option. Notice and comment periods allow the public to participate and express their views to inform the agency's review.

³ "Federal Vehicle Standards." *Center for Climate and Energy Solutions*, (10 March 2022), <https://www.c2es.org/content/regulating-transportation-sector-carbon-emissions/#:~:text=The%20transportation%20sector%20is%20the,58%20percent%20of%20transportation%20emissions.>

⁴ "U.S. Energy-Related Carbon Dioxide Emissions, 2018." *U.S. Energy Information Administration*, (November 2019). <https://www.eia.gov/environment/emissions/carbon/>

⁵ Selina Roman-White et al., "Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update," *National Energy Technology Laboratory*, (September 2019). <https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf>

⁶ "Net Generation from Renewable Sources: Total (All Sectors), 2010 – 2020." *U.S. Energy Information Administration*, (2021) https://www.eia.gov/electricity/annual/html/epa_03_01_b.html

⁷ "Dynamic Line Rating." *U.S. Department of Energy*, (June 2019). https://www.eenews.net/assets/2020/01/27/document_ew_02.pdf

"Renewable Electricity Futures Study." *National Renewable Energy Laboratory*, (2012). <https://www.nrel.gov/docs/fy13osti/52409-ES.pdf>

Following the publication of the final environmental document, the agency issues its Record of Decision (ROD). The ROD includes required mitigation measures that must be implemented during the project's development.

Activities that are subject to categorical exclusion (CE) “do not individually or cumulatively have a significant effect on the human environment and ... therefore, neither an environmental assessment nor an environmental impact statement is normally required.”⁸ According to Council on Environmental Quality (CEQ), an agency within the Executive Office of the President that is responsible for developing implementation procedures for NEPA, “the use of categorical exclusions can reduce paperwork and save time and resources.”⁹ The designation of activities as categorically excluded by federal agencies reduces the number of activities subject to NEPA and may prevent years of review time for projects.

Due to the varied activities subject to NEPA and the varied lead agencies conducting the review, the duration of review can vary widely and impact the issuance of the ROD. Figure 1 below highlights the varied lengths of time to receive a ROD, particularly when subject to the completion of an EIS between 2010 and 2018 for an energy or mining project. While some agencies can complete review and issue a ROD in under two years, the majority take over three years. The CEQ's data does not reflect the need to conduct supplemental EIS review or the adoption of an EIS by a cooperating agency, each of which can delay developers' ability to construct infrastructure.

The Federal Highway Administration found that the average time to complete NEPA review increased from 2.2 years in the 1970s, to 4.4 years in the 1980s, to 5.1 years in the 1995 to 2001 period, to 6.6 years in 2011 when looking at all projects subject to NEPA.¹⁰ According to the CEQ, the average was 4.5 years when considering projects subject to an EIS that received a ROD between 2010 and 2018 across over a dozen agencies.¹¹

⁸ “Categorical Exclusions.” NEPA | National Environmental Policy Act - Categorical Exclusions, *Council on Environmental Quality*, <https://ceq.doe.gov/nepa-practice/categorical-exclusions.html>

⁹ Ibid.

¹⁰ Horst, Mudge, Ellis, and Rubin. “40 Proposed US Transportation and Water Infrastructure Projects of Major Economic Significance.” *AECOM*. <https://www.hsdl.org/?view&did=804626>

¹¹ “Environmental Impact Statement Timelines.” *Council on Environmental Quality*, (December 2018). https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timelines_Report_2018-12-14.pdf

Federal Agency	Average Review Time (Years) <i>Notice of Intent to Record of Decision</i>
Western Area Power Administration	3.2
Fish and Wildlife Service	3.2
Forest Service	3.7
Army Corps of Engineers	4.8
Tennessee Valley Authority	1.3
Rural Utilities Service	3.2
Office of Surface Mining Reclamation and Enforcement	5.1
Nuclear Regulatory Commission	3.7
National Park Service	5.9
Federal Energy Regulatory Commission	2.7
Department of Energy	3.3
Bureau of Reclamation	10.3
Bonneville Power Administration	3.3
Bureau of Ocean Energy Management	1.9
Bureau of Land Management	3.7
Bureau of Indian Affairs	1.6

Figure 1: Years to Complete EIS Review for Energy and Mining Projects¹²

The completion of an EIS requires the issuance of a notice by the lead agency to alert the public that a review will take place, the issuance of a draft EIS, the collection and integration of the comments within the EIS, and finally, the issuance of the final EIS. Figure 2 below highlights the extent to which NEPA review dominates the total timeline associated with a ROD for energy and mining projects.¹³ The preparation of the draft EIS generally takes significantly longer than the other phases of review.

¹² "Environmental Impact Statement Timelines (2010-2017)." *Council on Environmental Quality*, (December 2018). https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timelines_Report_2018-12-14.pdf

¹³ "Fact Sheet: CEQ's Proposal to Modernize its NEPA Implementing Regulations." *Council on Environmental Quality*, (January 2020). <https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/01/20200110FINAL-FACT-SHEET-v3.pdf>

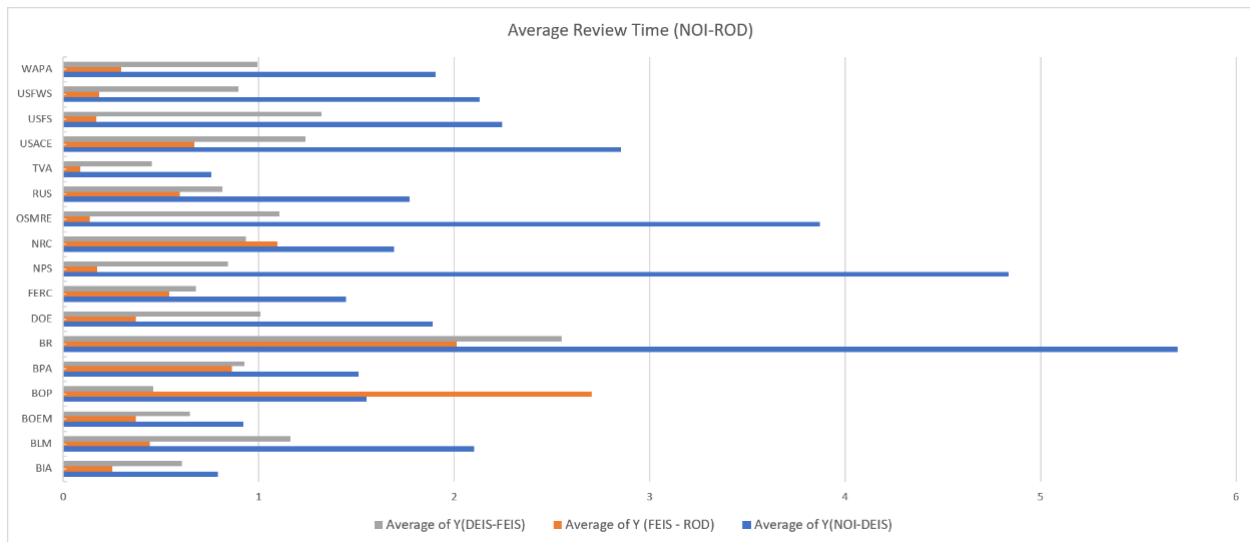


Figure 2. Duration of Review, Source: CEQ Data

NEPA review can be conducted on a project or site-specific basis and on a programmatic basis.¹⁴ Programmatic review may result in either an EA or EIS and is intended to allow an agency to consider the impact of a policy, plan, or program that would result in decision making. The results of the programmatic review inform the agency’s decision-making process when undertaking project specific approval. The project, however, will be the subject of an independent NEPA review. In effect, the programmatic review creates another basis for legal claims that may delay projects intended to benefit from the policy in question. On the other hand, it may expedite the review of each project that falls within an area or agency plan if tiering is employed to incorporate the programmatic EIS findings.¹⁵

When a project triggers NEPA review it is also subject to review under various other federal statutes, including the Clean Air Act, Clean Water Act, Endangered Species Act, and National Historic Preservation Act, among others. These environmental statutes may be carried out by way of cooperative federalism, the delegation by federal statute of duties to state governments in establishing and enforcing environmental standards. In particular, the Clean Air Act and Clean Water Act call for state governments to establish schemes to ensure their resources are appropriately managed. As a result, multiple federal and state agencies become involved in the permitting process and each has the ability to delay the completion of NEPA review or outright halt it by failing to issue the necessary permits.

¹⁴ "Memorandum for Heads of Federal Departments and Agencies." *Council on Environmental Quality*, (December 2014).

https://ceq.doe.gov/docs/ceq-regulations-and-guidance/Effective_Use_of_Programmatic_NEPA_Reviews_Final_Dec2014_searchable.pdf

¹⁵ "40 CFR § 1501.11 - Tiering." *Legal Information Institute*, Cornell Law School, <https://www.law.cornell.edu/cfr/text/40/1501.11>

In addition, state agencies must also carry out the programming resulting from state statutes which can result in additional reviews and permitting. For example, a state government may have its own environmental policy statute that triggers a State Environmental Policy Act (SEPA) review, or consider its state designated endangered species. Finally, localities require permitting for construction activities, such as road use.

Delays in this process also slow innovation and plague development of emerging technologies. An inefficient permitting process poses a significant barrier to the implementation of novel technologies, like advanced nuclear, as well as the consumption of natural resources that serve as components of these technologies, like domestic critical minerals mining.

Natural Gas Infrastructure

The United States has approximately three million miles of natural gas pipelines.¹⁶ Since 1990, natural gas consumption in the United States has increased by 58 percent.¹⁷ As a result of innovative technologies and practices that have dramatically lowered the cost of natural gas, U.S. natural gas production has increased by 48 percent since 1990 and has served as an economic engine and a potential geopolitical asset.¹⁸ The United States' increased utilization of natural gas over the last ten years has also resulted in 2.7 billion metric tons of avoided greenhouse gas (GHG) emissions — 50 percent more than renewables over the same period.¹⁹

Much of the avoided emissions are the result of the replacement of coal as a power generation fuel stock as well as increased natural gas turbine efficiency. As a result, natural gas is the single greatest contributor to the world-leading emissions reductions in the United States. Equally noteworthy is that that U.S.-produced and -transported natural gas is among the lowest in terms of lifecycle emissions.

In 2019, a National Energy Technology Laboratory study found that U.S. liquefied natural gas (LNG) can actually play a significant role in reducing global emissions.²⁰ For example, compared to U.S. LNG, life-cycle emissions of Russian natural gas exports are 41 percent higher when exported to Europe and 47 percent higher when exported to Asia.²¹ If the European Union were simply to replace its current imported Russian natural gas used for electricity generation with U.S. LNG, over 70 million metric tons of global greenhouse gases could be avoided annually.²²

¹⁶ "Natural Gas Pipelines." *U.S. Energy Information Administration*, (December 2019). <https://www.eia.gov/energyexplained/natural-gas/natural-gas-pipelines.php>

¹⁷ "U.S. Natural Gas Total Consumption." *U.S. Energy Information Administration*, (April 2020). <https://www.eia.gov/dnav/ng/hist/n9140us2A.htm>

¹⁸ "U.S. Natural Gas Gross Withdrawals." *U.S. Energy Information Administration*, (April 2020). <https://www.eia.gov/dnav/ng/hist/n9010us2a.htm>

¹⁹ "U.S. Energy-Related Carbon Dioxide Emissions, 2018." *U.S. Energy Information Administration*, (November 2019). <https://www.eia.gov/environment/emissions/carbon/>

²⁰ Selina Roman-White et al., "Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update," *National Energy Technology Laboratory*, (September 2019). <https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf>

²¹ *Ibid.*

²² Assuming 35 percent of EU electricity generated from natural gas is sourced from Russia (244 million megawatt hours) and 297 kgCO₂e lower life-cycle emissions per megawatt hour from U.S. supply.

The current domestic and global utilization of U.S.-produced natural gas was made possible by the network of gathering lines at the site of production, pipelines that move gas hundreds of miles in interstate commerce, and distribution systems that deliver it to end users. A permitting process that hinders further infrastructure development is counter to the economic and geopolitical interests of the United States, and counter to reducing global emissions.

The Federal Energy Regulatory Commission (FERC) permits both natural gas pipelines and LNG terminals. In an effort to reduce review time, FERC instituted a “pre-filing” process that allows developers to present a planned project to FERC staff to identify potential issues earlier in the process in advance of filing a formal application. FERC acts as the lead agency in completing the onerous NEPA review and issuing a Certificate of Public Convenience and Necessity as a ROD various federal and state agencies contribute to the review. Construction of a project is contingent upon completion of all these additional reviews. As a result, a single state agency can delay the construction of a natural gas project that has otherwise been approved by a federal agency and granted eminent domain, or outright halt its construction by denying permits.

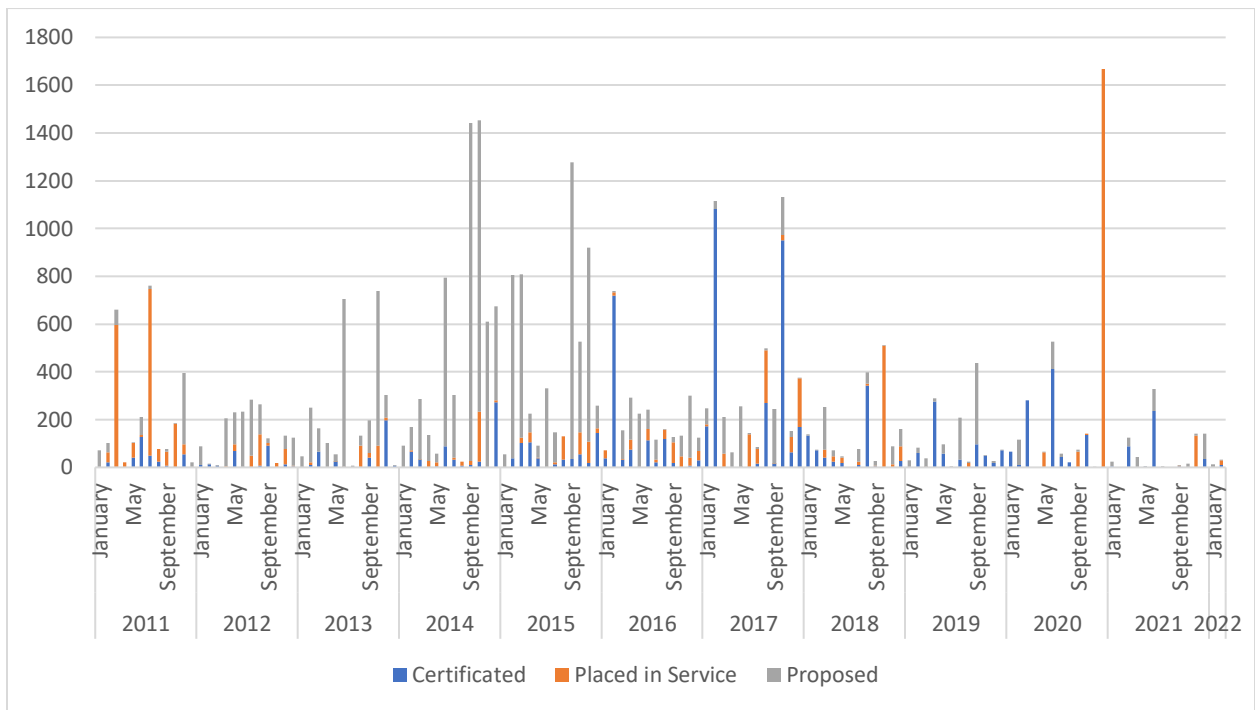


Figure 3. Natural Gas Pipeline Applications, Source: FERC Infrastructure Reports

The chart above demonstrates the status of pipeline projects before FERC from 2011 through the first quarter of 2022. From 2012 through 2015, a relatively high number of miles were proposed by way of a formal application. In turn, throughout the following few years, 2016 through 2020, the number of certificated pipelines, those that have completed NEPA review and received approval, increased. Most strikingly, however, the number of pipeline miles placed in service was relatively low except for October 2018 and December 2020.

These spikes of pipeline mileage placed in service reflect the delay associated with cooperating agency permits, like Clean Water Act (CWA) permits delegated to the state and ESA consultations completed by the Fish and Wildlife Service (FWS), as well as litigation.

A state's involvement has consequences beyond its borders. For example, New York State has opposed the construction of any new natural gas pipelines.²³ As a result, the ability to service areas of high demand, like the New York metropolitan area, or areas beyond, like New England, becomes limited. In New England, this means not only higher prices for consumers, but also burning fuel oil rather than natural gas, which creates unnecessary greenhouse gas emissions.²⁴ Alternatively, natural gas has been imported as LNG to New England, but from geopolitical adversaries, such as Russia. Not only has restricting infrastructure unnecessarily led to American dependence on Russia for energy, but it has also resulted in significantly higher global greenhouse gas emissions.

Hydropower

Hydropower has provided renewable electric power in the United States for over a century, and in 2021, contributed 31.5 percent of electricity generated from a renewable source.²⁵ Unlike renewable wind and solar, hydropower can provide reliable baseload energy to the grid. It has proven beneficial in stabilizing the grid and provides opportunities for energy storage by way of pumped storage.²⁶ Existing processes for the permitting of hydropower facilities, however, require years, if not decades, of review. This is particularly troubling because of the opportunities provided by electrifying nonpowered dams (NPD) and increasing reliable renewable generation capacity while minimally impacting the environment.

²³ Markind, Daniel, "Fed Regulators Push Back Against Gov Cuomo's Gas Pipeline Stonewalling," *Forbes*, (September 2019). <https://www.forbes.com/sites/danielmarkind/2019/09/09/ferc-pushes-back-against-state-governors-interfering-with-interstate-pipelines/>

²⁴ "Natural Gas Infrastructure Constraints." *ISO New England*. <https://www.iso-ne.com/about/what-we-do/in-depth/natural-gas-infrastructure-constraints>

²⁵ "Electricity Explained: Electricity in the US." *US Energy Information Administration*, (April 2022). <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

²⁶ "Hydropower Explained: Where Hydropower is Generated." *US Energy Information Administration*, (March 2022). <https://www.eia.gov/energyexplained/hydropower/where-hydropower-is-generated.php>

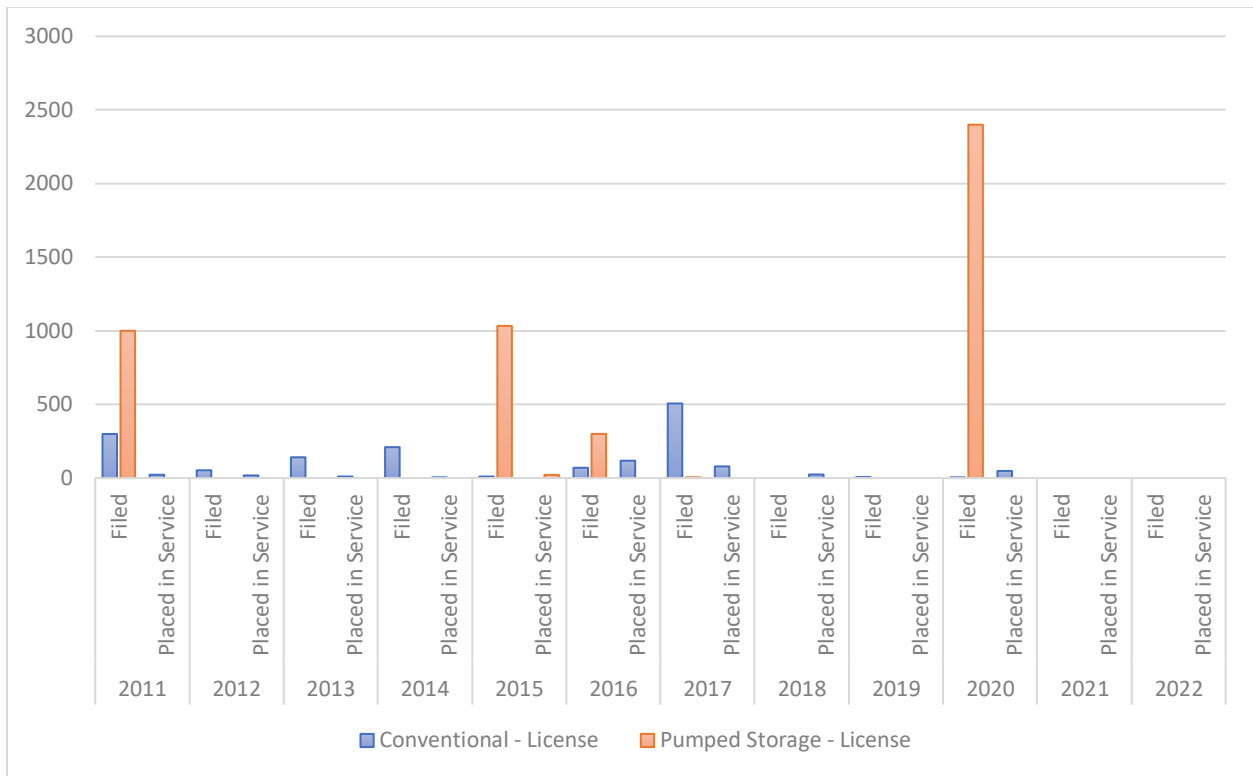


Figure 4. Hydropower Applications, Source: FERC Infrastructure Reports

The FERC licenses hydropower facilities, including the construction of new facilities, the electrification of existing dams, and re-licensing existing hydropower facilities. The FERC provides several processes for licensing. An applicant for a newly licensed facility may use one of three existing processes, an integrated (ILP), traditional (TLP), or alternative licensing process (ALP). These three processes all require completion of NEPA review.²⁷ The variations in licensing are the product of attempts to improve the process by initiating NEPA review earlier and reducing duplicate efforts when re-licensing a facility. Similar to companies planning to build natural gas pipelines or LNG facilities, hydropower developers may pre-file a project with the FERC staff to gain the agency’s input in preparation of application materials by providing a Notice of Intent (NOI) and a pre-application document (PAD). The applicant then develops application materials.²⁸ In addition, applicants must obtain a preliminary permit for site development that is valid for three years and may be extended for an additional two years in order to maintain priority on the selected site while studies are completed.²⁹

²⁷ "Licensing Processes: Integrated, Traditional and Alternative Licensing Processes." *Federal Energy Regulatory Commission*, (July 2020). <https://ferc.gov/industries-data/hydropower/licensing/licensing-processes>

²⁸ "Licensing." *Federal Energy Regulatory Commission*, (May 2022). <https://ferc.gov/licensing>

²⁹ "Report On the Pilot Two-year Hydroelectric Licensing Process for Non-powered Dams and Closed-loop Pumped Storage Projects and Recommendations Pursuant to Section 6 Of the Hydropower Regulatory Efficiency Act Of 2013." *Federal Energy Regulatory Commission*, (May 2017). p. 5, HYPERLINK "<https://ferc.gov/sites/default/files/2020-05/final-2-year-process.pdf>" <https://ferc.gov/sites/default/files/2020-05/final-2-year-process.pdf>

The chart above demonstrates the capacity proposed in applications filed with the FERC and the capacity placed in service on an annual basis. While applications for conventional hydropower and pumped storage capacity have been filed throughout the past decade, very little has been placed in service.

Over twenty years ago, the FERC conducted a review of its licensing performance throughout the 1980s and 1990s. It found that median licensing times increased substantially from one decade to the next – 30 months for the 111 relicensing applications filed between January 1982 and May 1992 and 43 months for those licensed from January 1, 1993 through December 31, 2000.³⁰ The additional year of review time was attributed to:

The great volume of the Class of 93 cases;

*The persistence of **post-application disputes over the scope of necessary studies** and the failure of resource agencies and license applicants to seek dispute resolution during pre-filing consultation;*

Commission efforts to promote settlements;

*The establishment in 1993 of a policy in licensing cases to issue draft environmental analyses (EAs) for comment. **This added about six months to the process;***

*Starting in 1994, in an attempt to better obtain the views of all stakeholders, additional scoping procedures were added, **extending processing time a few months;***

*An **increase in the number of joint NEPA documents** with other federal agencies, requiring additional time for coordinated preparation and joint review;*

***Increased issuance of state water quality certification** (as opposed to waiver of certification), and **untimely receipt of water quality certification.**³¹*

The factors identified by FERC staff twenty years ago continue to pose challenges to developers seeking review of not only hydropower dams but also other infrastructure subject to NEPA review.

Upon reviewing project performance between 2003 and 2018, FERC found that 28 percent of applicants seeking to construct new facilities were licensed or received a waiver from licensing requirements within 2 years. The FERC went on to look at the impact of cooperating agency consultations and delegated reviews on the duration of licensing, in particular, CWA, NHPA, ESA and FPA. The FERC found that “the most common cause of long-delayed proceedings is untimely receipt of state water quality certification under the Clean Water Act.”³²

³⁰ “Section 603 (Comprehensive Review of Hydro Licensing) May 8, 2001.” *Federal Energy Regulatory Commission*, (November 2021). <https://ferc.gov/media/section-603-comprehensive-review-hydro-licensing-may-8-2001>

³¹ “Section 603 (Comprehensive Review of Hydro Licensing) May 8, 2001.” *Federal Energy Regulatory Commission*, (November 2021). P. 32, <https://ferc.gov/media/section-603-comprehensive-review-hydro-licensing-may-8-2001> (emphasis added)

³² *Ibid.* Page 5.

According to a report issued by the Department of Energy that investigated the potential for electrification at nonpowered dams, in 2012 about 2,500 dams provided 78 gigawatts (GW) of conventional and 22 GW of pumped-storage hydropower, while there were more than 80,000 non-powered dams.³³ While some of these were considered too small or lacked appropriate documentation DOE found that an additional 15GW of new hydropower could be generated, or an addition equal to 15 percent of the hydro fleet. In addition, DOE found that, "... many of the monetary costs and environmental impacts of dam construction have already been incurred at NPDs, so adding power to the existing dam structure can often be achieved at lower cost, with less risk, and in a shorter timeframe than development requiring new dam construction. The abundance, cost, and environmental favorability of NPDs, combined with the reliability and predictability of hydropower, make these dams a highly attractive source for expanding the nation's renewable energy supply."

Electrifying existing non-powered dams could result in an additional 15GW of hydropower capacity while minimally impacting the environment.

The Hydropower Regulatory Efficiency Act (HREA) of 2013 called on FERC "to investigate the feasibility of the issuance of a license for hydropower development at non-powered dams and closed-loop pumped storage projects in a two-year period."³⁴ The result was a pilot two-year review process and the successful review of an application to electrify a non-powered dam within the allotted two-year period. The two-year process planned by FERC staff included a six-month pre-filing period.

Upon conducting the pilot project review, FERC held a workshop to consider the lessons learned and gain the perspective of additional agencies, companies, and organizations on the potential for employing the process. Agency staff voiced concern about the ability of staff to complete expedited reviews under a two-year timeline if multiple projects sought expedited review simultaneously due to limited resources. Similarly, agency staff questioned whether projects that were not expedited would be a lower priority and subject to even lengthier reviews due to resource constraints.

FERC concluded that the existing review processes available to applicants allowed for the issuance of a decision within two years of pre-filing. As a result, no changes to the licensing processes were made. Instead, FERC provided updated guidance for applicants.

Electricity Transmission

According to the National Renewable Energy Laboratory (NREL), increased availability of electric transmission assets is essential for the deployment of new clean energy assets:

³³ Hadjerioua, Yaxing, and Shih-Chieh. "An Assessment of Energy Potential at Non-Powered Dams in the United States." *Wind and Water Power Program*, U.S. Department of Energy, (April 2012). https://www.energy.gov/sites/prod/files/2013/12/f5/npd_report_0.pdf

³⁴ "Report on the Pilot Two-Year Hydroelectric Licensing Process for Non-Powered Dams and Closed-Loop Pumped Storage Projects and Recommendations Pursuant to Section 6 of the Hydropower Regulatory Efficiency Act of 2013." *Federal Energy Regulatory Commission*, (May 2017). <https://ferc.gov/sites/default/files/2020-05/final-2-year-process.pdf>

As renewable electricity generation increases, additional transmission infrastructure is required to deliver generation from cost-effective remote renewable resources to load centers, enable reserve sharing over greater distances, and smooth output profiles of variable resources by enabling greater geospatial diversity.³⁵

While a natural conclusion from NREL’s study is that more transmission would alleviate the challenges of integrating new facilities to the grid, siting and constructing new transmission lines is cumbersome and time-consuming, dissuading financing. Inability to effectively site and build transmission lines has harmed consumers directly in the form of “transmission congestion” — the higher costs consumers pay when they cannot access the least-cost source of electricity generation. In 2019, a Department of Energy report to Congress estimated transmission congestion costs in 2016 were \$4.8 billion and expected to grow.³⁶

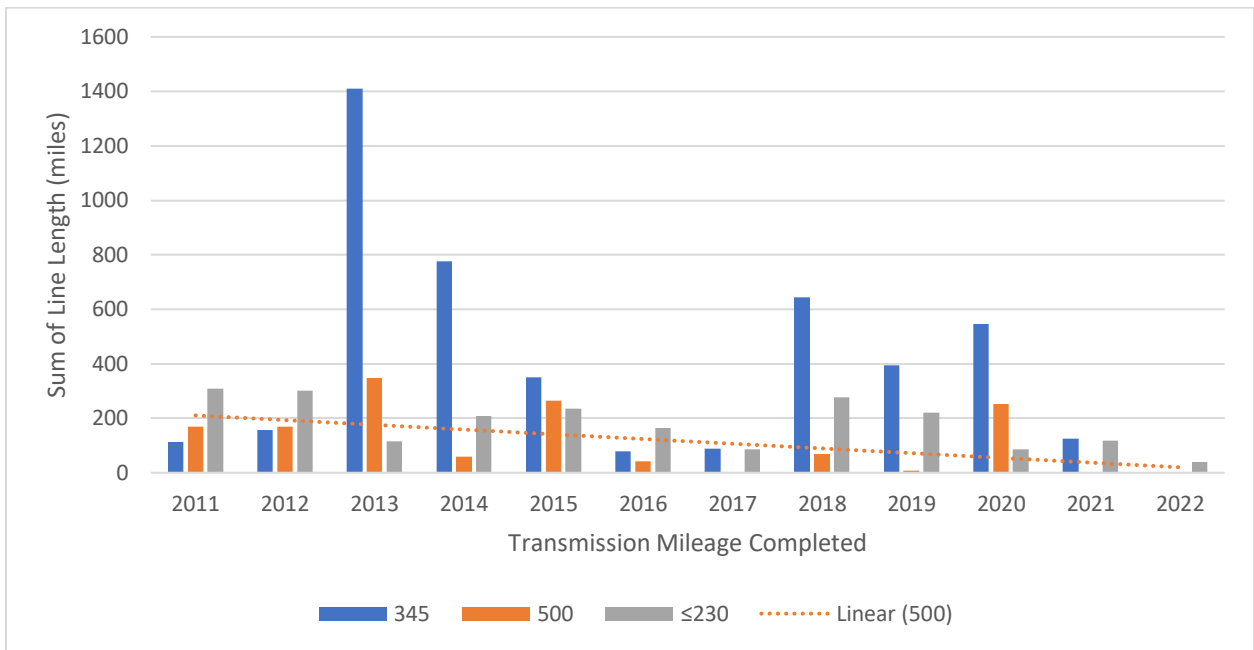


Figure 5. Electric Transmission Construction, Source: FERC Infrastructure Reports

The chart above shows the completed transmission mileage for three different voltages — less than or equal to 230, 345, and 500 kilovolts (kV). The most efficient long-distance, high-voltage (500 kV) lines are a relatively small share of completed projects.³⁷ Throughout the past decade, their construction has declined despite the growing number of renewable generation assets brought online as demonstrated by the trend line.

³⁵ “Renewable Electricity Futures Study,” National Renewable Energy Laboratory, (2012). <https://www.nrel.gov/docs/fy13osti/52409-ES.pdf>

³⁶ “Dynamic Line Rating.” U.S. Department of Energy, (June 2019). https://www.eenews.net/assets/2020/01/27/document_ew_02.pdf

³⁷ “IIJA: Efforts to Address Electric Transmission for Reliability, Resilience, and Renewables.” Congressional Research Service, (December 2021). <https://crsreports.congress.gov/product/pdf/IN/IN11821>

Under the Energy Policy Act of 2005, the Department of Energy was directed to identify National Interest Electric Transmission Corridors (NIETC) by conducting a congestion study every three years. After completing a congestion study, the DOE identified the southwest and mid-Atlantic areas as the sites of transmission congestion and constraint. The studies, however, were not intended to result in any federal action. DOE pointed out that³⁸ the designation of a corridor:

DOES NOT constitute a finding that additional transmission capacity must be built in the affected area;

DOES NOT mean that additional transmission is the only, or the best solution to resolve the congestion; – rather, DOE encourages that local generation, demand response and energy conservation options also be considered;

DOES NOT propose, direct or permit anyone to build a transmission facility; and

DOES NOT equate to a determination of a route for a proposed transmission facility; or an endorsement of one or more transmission solutions to the congestion problem.

The Energy Policy Act of 2005, however, also gave FERC new permitting authority. FERC was authorized to site transmission within the corridors identified by DOE if

“(1) a State in which the transmission facilities are to be constructed or modified does not have authority to (i) approve the siting of the facilities or (ii) consider the interstate benefits expected to be achieved by the proposed construction or modification of transmission facilities in the State;

(2) the applicant for a permit is a transmitting utility under [the Federal Power Act] but does not qualify to apply for a permit or siting approval for the proposed project in a State because the applicant does not serve end-use customers in the State; or

(3) a State commission or other entity that has authority to approve the siting of the facilities has— (i) withheld approval for more than 1 year after the filing of an application seeking approval pursuant to applicable law or 1 year after the designation of the relevant National Corridor, whichever is later; or (ii) conditioned approval in such a manner that the proposed construction or modification will not significantly reduce transmission congestion in interstate commerce or is not economically feasible.”³⁹

Historically, state governments permitted transmission infrastructure. As a result, developers seeking to develop an interstate transmission line need to complete multiple unique permitting processes in each state impacted by facilities. As interpreted by courts, FERC’s new backstop authority, however, has limited ability to overrule the state. If a state agency denies an application because, for example, it finds the interstate transmission line would provide few benefits to its impacted communities, FERC cannot overrule, as a denial is not considered “withheld.” Instead, the state would have to fail to act on an application for more than one year to trigger FERC authority. In addition, it is difficult to route an interstate transmission line without encountering state owned lands, like parks, highways, and rivers, that present the state with an opportunity to refuse facilities.

³⁸ “FACT SHEET: Designation of National Interest Electric Transmission Corridors, As Authorized by the Energy Policy Act of 2005.” Department of Energy, https://www.energy.gov/sites/prod/files/edg/media/NIETC_Fact_Sheet.pdf

³⁹ “2020 National Electric Transmission Congestion Study.” Office of Electricity, Department of Energy, (September 2020). <https://www.energy.gov/oe/downloads/2020-national-electric-transmission-congestion-study>

Federal Lands

The federal government owns 28 percent of land in the United States. Most of this land is administered by the Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), National Park Service (NPS), and the Forest Service (FS).⁴⁰ Various statutes task these agencies with not only preserving flora and fauna, but also putting the land to use, including mining, oil and gas exploration, and renewable project development.

BLM, which is housed within the Department of Interior, administers over 700 million acres of subsurface mineral estate while the Bureau of Ocean Energy Management (BOEM) administers offshore lands.⁴¹ Offshore leases have typically been used for oil and natural gas extraction, but more recently, have been opened to the development of offshore wind projects. Resource planning is conducted to define the scope of resources accessible to industry and the public and results in resource management plans that include NEPA review.

The Energy Act of 2020 directed the Secretary of the Interior to improve coordination of project permitting for geothermal, solar, and wind projects on federal land. It also established the goal of permitting 25 GW of renewable energy on public lands by 2025. In the fiscal year 2021 report to Congress required by the Act, BLM provided details regarding the renewable energy projects that were permitted during the past year, as well as those undergoing review and subject to approval in coming years, including interconnect transmission projects. While over 5,000 MW were approved in 2020 and 2021, BLM is reviewing an additional 29,000 MW of solar, 2,000 MW of wind, and 188 MW of geothermal generation capacity. Expedited pathways for permitting should be provided to developers seeking to build on land that has been subject to a resource management plan and includes the resource in question.

According to a Bureau of Land Management report, an additional 56 staffers are necessary to successfully review permits for energy projects.

BLM points out that in order to meet the permitting requirements “an additional 56 full-time employees would be needed to substantially improve permitting coordination and appropriately prioritize and sustain the implementation of the BLM’s permitting improvement program for onshore renewable energy.”⁴² It goes on to explain that an additional 10 employees would likely be needed following an unexpected number of applications received by the agency in certain states.

⁴⁰ “Federal Land Ownership: Overview and Data.” *Congressional Research Service*, (December 2020). <https://sgp.fas.org/crs/misc/R42346.pdf>

⁴¹ Ibid.

⁴² “Public Land Renewable Energy – Fiscal Year 2021.” *Bureau of Land Management*, Department of the Interior, (March 2022). https://www.blm.gov/sites/blm.gov/files/docs/2022-04/BLM%20Public%20Land%20Renewable%20Energy%20FY21%20Report%20to%20Congress%20v4%20508_0.pdf

Wind

In 2005, BLM completed a programmatic EIS to consider wind energy and amended 52 resource management plans to reflect the potential for development.⁴³ This has not necessarily resulted in significant development to date: “Currently, about 5 percent of total producing utility-scale wind energy capacity in the United States is generated from facilities on public lands.”⁴⁴ The limited use of federal lands has been attributed to the difficulties of permitting; in particular, mitigating impacts on bird populations.

Public lands are only responsible for about 5 percent of wind power generated.

The United States has only recently begun developing offshore wind projects. In 2019, the Block Island Wind Farm (which is in state rather than federal waters) began operating while onshore wind power has existed for decades.⁴⁵ In January, BOEM approved the construction of the South Fork Wind Farm located in federal waters between Rhode Island and New York. In February, BOEM conducted an auction to lease areas on the coast of New York and New Jersey known as the New York Bight. The lease offering resulted in winning bids from six companies.⁴⁶ And in May, BOEM issued an EA which found there would be no significant impact in offshore leasing near Humboldt, California, and auctioned leases off the coast of North Carolina.⁴⁷ These leases, however, will only be a success if developers can manage to obtain permits and construct the facilities in a timely fashion. Several attempts to construct offshore wind power in the United States in the past have been unsuccessful due to permitting and litigation.

⁴³ “Wind Energy Development Programmatic EIS Information Center.” *Bureau of Land Management*, Department of the Interior, <https://windeis.anl.gov/>

⁴⁴ “Wind Energy.” *Bureau of Land Management*, Department of the Interior, <https://www.blm.gov/programs/energy-and-minerals/renewable-energy/wind-energy>

⁴⁵ “Offshore Wind Energy.” *Office of Energy Efficiency and Renewable Energy*, Department of Energy, <https://windexchange.energy.gov/markets/offshore>

⁴⁶ “Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf.” *Offshore Wind Hub*, Department of the Interior, (May 2022). <https://offshorewindhub.org/resource/1956>

Bennett, James. “South Fork Construction and Operations Plan Approval Letter.” *Offshore Wind Hub*, (February 2022). <https://offshorewindhub.org/resource/1813>

⁴⁷ “Humboldt Wind Energy Final EA.” *Offshore Wind Hub*, Department of the Interior, (May 2022). <https://offshorewindhub.org/resource/1947>

Tamborrino, Kelsey. “Offshore Wind Auction Offers Test for Industry Interest in the Southeast.” *POLITICOPRO*, (May 2022). <https://subscriber.politicopro.com/article/2022/05/offshore-wind-auction-offers-test-for-industry-interest-in-the-southeast-00031555>

Solar

Solar generation increased from about 5 million kWh in 1984 to about 164 billion kWh in 2021, of which 68 percent was generated by utility-scale plants, 30 percent by distributed/small-scale systems, and 2 percent by utility-scale solar thermal-electric plants.⁴⁸ In total, however, utility-scale solar generation was responsible for 2 percent of utility-scale power generation in 2020.⁴⁹

About 870,000 acres of BLM land are prioritized for solar development.⁵⁰ BLM completed a programmatic EIS for Solar Energy Development in six Southwestern States, the Western Solar Plan to develop utility-scale solar in Arizona, California, Colorado, Nevada, New Mexico, and Utah.⁵¹

In 2016, areas were designated Solar Energy Zones (SEZ), highlighted as appropriate for solar development, and have been or are scheduled to be leased to developers.⁵² Additional geographic areas within BLM's jurisdiction were made available for leasing during the Trump administration. While this area was not exclusively designated a SEZ, it has supported solar leasing.

Although a programmatic EIS was completed, project developers' proposals are subject to NEPA review, as well. In addition, the leasing rates offered by the BLM are not competitive and lead developers to site on private land.

Geothermal

The production of geothermal energy is dependent on the geological quality of the Earth's crust. The areas that are best suited to serve as geothermal energy sites are located in the western United States which is largely composed of federal lands. Utility-scale geothermal facilities are located in California, Nevada, Utah, New Mexico, Oregon, and Idaho. Of the 65 operating geothermal plants in the U.S. in 2020, 48 were located on BLM-administered lands.⁵³

In 2008, BLM completed a programmatic EIS to understand the potential for geothermal energy development and its impact on the environment.

⁴⁸ "Solar Explained: Where Solar is Found and Used." *U.S. Energy Information Administration*, (April 2022). <https://www.eia.gov/energyexplained/solar/where-solar-is-found.php>

Utility-scale power plants have at least 1,000 kilowatts (kW) (or one megawatt [MW]) of electricity generation capacity and small-scale systems have less than one MW generation capacity.

⁴⁹ "Net Generation by Energy Source: Total (All Sectors), 2010 - 2020." *US Energy Information Administration*, https://www.eia.gov/electricity/annual/html/epa_03_01_a.html

⁵⁰ "Solar Energy." *Bureau of Land Management*, Department of the Interior, <https://www.blm.gov/programs/energy-and-minerals/renewable-energy/solar-energy>

⁵¹ "Solar Energy Program." *Bureau of Land Management*, Department of the Interior, (May 2018). <https://blmsolar.anl.gov/program/>

⁵² "BLM Takes Key Steps to Expedite Solar Energy Development on Public Lands." *Bureau of Land Management*, Department of the Interior, (March 2016). <https://www.blm.gov/press-release/blm-takes-key-steps-expedite-solar-energy-development-public-lands-1>

⁵³ "Geothermal Resource Management." *Forest Service*, Department of Agriculture, <https://www.fs.usda.gov/managing-land/natural-resources/geology/minerals/energy-minerals/geothermal>

"Electricity: Form EIA-860 detailed data with previous form data (EIA-860A/860B)." *US Energy Information Administration*, (June 2022). <https://www.eia.gov/electricity/data/eia860/>

In order to develop these resources, a lease must be obtained, then individual authorization must be sought for exploration drilling, development, production, as well as compliance with NEPA when proposing ground-disturbing activities.⁵⁴ Attempts to lease FS land require the completion of a project-specific EIS rather than allowing developers to rely on a programmatic EIS.⁵⁵

Geothermal facilities have the smallest direct environmental impact (0.13 acres/gigawatt hour) when compared to wind and solar generation.⁵⁶ This makes them ideal for federal lands where energy resources are in concert with wildlife.

Extraction

Mineral, oil, and natural gas extraction on federal land requires a series of steps that involve both exploration by industry and coordination and permitting by the federal government. Initially, BLM conducts NEPA reviews and issues regional Resource Management Plans.⁵⁷ In the case of oil, natural gas, and coal extraction, industry expresses interest in a particular tract to BLM in order for it to be offered for lease. Then, this land is subject to environmental review to determine if its leasing would be in line with the findings of the Resource Management Plan. Recently, the leasing of federal lands for energy development was impacted by varied administrative approaches to leasing, including expanding the geographic area available during the Trump administration, and pausing leasing to consider changes to the terms and conditions of leasing by the Biden administration.

Non-energy mineral extraction on federal lands is subject to varied processes depending on whether the mineral is locatable, leasable, or saleable, as defined by a series of statutes.⁵⁸ Locatable minerals include gold, silver, copper, and other hard rock minerals, like those designated as “critical.” Critical minerals, as defined by the United States Geological Survey, are 50 “non-fuel mineral[s] or mineral material[s] essential to the economic or national security of the U.S. and which has a supply chain vulnerable to disruption.”⁵⁹ These minerals serve as necessary components of clean energy technologies, electric vehicles, computers and other electronics, and our national defense.

To mine for locatable minerals, an interested party may select a plot of federal land that is of interest and stake a claim, alert the relevant regional office of BLM of the claim, and pay a nominal fee, at which point they have an indefinite claim to the land if they continue to pay the fee annually.

⁵⁴ “Geothermal Energy.” *Bureau of Land Management*, Department of the Interior, <https://www.blm.gov/programs/energy-and-minerals/renewable-energy/geothermal-energy>

⁵⁵ “Geothermal Land Leasing (3-FD-a).” *OpenEI: RAPID*, Department of Energy, <https://openei.org/wiki/RAPID/Roadmap/3-FD-a>

⁵⁶ Cruce, Cook, and Larsen. “Streamlining Energy Sprawl: Assessment of Geothermal Impacts on Public Lands.” *National Renewable Energy Laboratory*, (2020). <https://publications.mygeoenergynow.org/grc/1034273.pdf>

⁵⁷ “Planning And Nepa in the BLM.” *Bureau of Land Management*, Department of the Interior, <https://www.blm.gov/programs/planning-and-nepa>

⁵⁸ “Mining and Minerals.” *Bureau of Land Management*, Department of the Interior, <https://www.blm.gov/programs/energy-and-minerals/mining-and-minerals>

⁵⁹ Burton, Jason. “US Geological Survey Releases 2022 List of Critical Minerals.” *US Geological Survey*, (February 2022). <https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals>

Should the interested party choose to conduct exploratory activities on their claim, they pay an additional nominal fee, and finally, when they choose to mine the claim, they submit a plan of operations to BLM for approval, which can take up to a decade. A plan of operations is reviewed by BLM, who must comply with NEPA to determine if the plan “will prevent unnecessary or undue degradation.”⁶⁰ Once mining has begun, there are no royalty payments required by law. The low price to acquire land and maintain rights to its use is one of the few benefits to mining companies seeking to extract from federal lands. Recent proposals to increase fees and impose royalties come at a poor time for a declining industry that is necessary for future success of clean energy.

The United States fails to mine some "critical minerals" at all and contributes less than 15 percent of the global share of others.

The International Energy Agency (IEA) found that mineral demand for clean energy technology will at least double globally by 2040 if countries adhere to their stated policies.⁶¹ Currently, China is the overwhelmingly dominant player controlling the rare earth and critical mineral global market. Domestically, there is no mining of some critical minerals, while others only contribute between 1 to 15 percent of global supply, making the U.S. overly reliant on China. As demand increases for both critical minerals and clean energy technologies, absent a domestic supply response, China’s influence over both America’s, and the world’s, energy needs will grow.⁶²

Federal Spending

Currently, NEPA review applies to projects that apply for federal funding; in particular, the Department of Energy’s Loans Program Office (LPO), which issues loans and loan guarantees to energy project developers subjects applicants to NEPA requirements. The LPO offers programs specifically tailored to innovative vehicle manufacturing facilities, advanced nuclear, fossil energy, renewable energy, and energy efficiency projects.⁶³

⁶⁰ “Code of Federal Regulations: Title 43, Subtitle B, Chapter II, Subchapter C, Part 3800, Subpart 3809 - Surface Management.” *National Archives and Records Administration*, <https://www.ecfr.gov/current/title-43/subtitle-B/chapter-II/subchapter-C/part-3800/subpart-3809>

⁶¹ “The Role of Critical Minerals in Clean Energy Transitions.” *International Energy Agency*, (May 2021). <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

⁶² Rossetti and Banks. “Foreign Mineral Supply Chain Dependence Threatens U.S. National Security.” *Citizens for Responsible Energy Solutions Forum*, https://cresforum.org/wp-content/uploads/2022/03/CRES_WhitePager_CriticalMinerals_03212022_v1.pdf

⁶³ “Advanced Clean Energy Storage: First Loan Guarantee for a New Project in Nearly a Decade.” *Loan Programs Office*, Department of Energy, <https://www.energy.gov/lpo/loan-programs-office>

Projects are the subject of an EA, EIS, or determined to be subject to a categorical exclusion. According to the LPO, “[t]he average timeline for completing an environmental assessment is 6-9 months, and for an environmental impact statement around 18-24 months.”⁶⁴ If the project has triggered federal authority due to its location or the nature of the infrastructure proposed, the LPO may choose to adopt another agency’s environmental review.⁶⁵ Neither the LPO’s offering nor its extension of an offer to an applicant guarantees approval of the proposed project or its construction.

NEPA review extends to those projects that are not in any other way within the jurisdiction of the federal government. Project applicants may simply be seeking federal funds to support a project that is, otherwise, outside of the federal government’s purview. In this case, the project is still subject to requirements established by a state or federal agency that has jurisdictional authority. As a result, the duration of the project’s total review may be extended by NEPA. In these cases, NEPA review disincentivizes developers from taking advantage of the resources available to build clean energy technology.⁶⁶

Case Study: Energy Gateway South Transmission Line

The burden of the NEPA process and its many coordinated and delegated permits can plainly be seen when reviewing PacifiCorp’s Energy Gateway South Transmission Line Project (EGS). The 500 kV line will span approximately 2,000 miles and pass through Colorado, Utah, and Wyoming on lands managed by various state and federal agencies as demonstrated on the map below.

Based on its location and characteristics, the Energy Gateway South Project was subject to over 50 federal, state and local permits, reviews and consultation and a nearly 4,000 page-long EIS.

⁶⁴ “Environmental Compliance.” *Loan Programs Office*, Department of Energy, <https://www.energy.gov/lpo/environmental-compliance>

⁶⁵ *Ibid.*

⁶⁶ Czapla, Ewelina. “Improving DOE’s Loan Programs Office.” *American Action Forum*, (December 2021). <https://www.americanactionforum.org/insight/improving-does-loan-programs-office/>

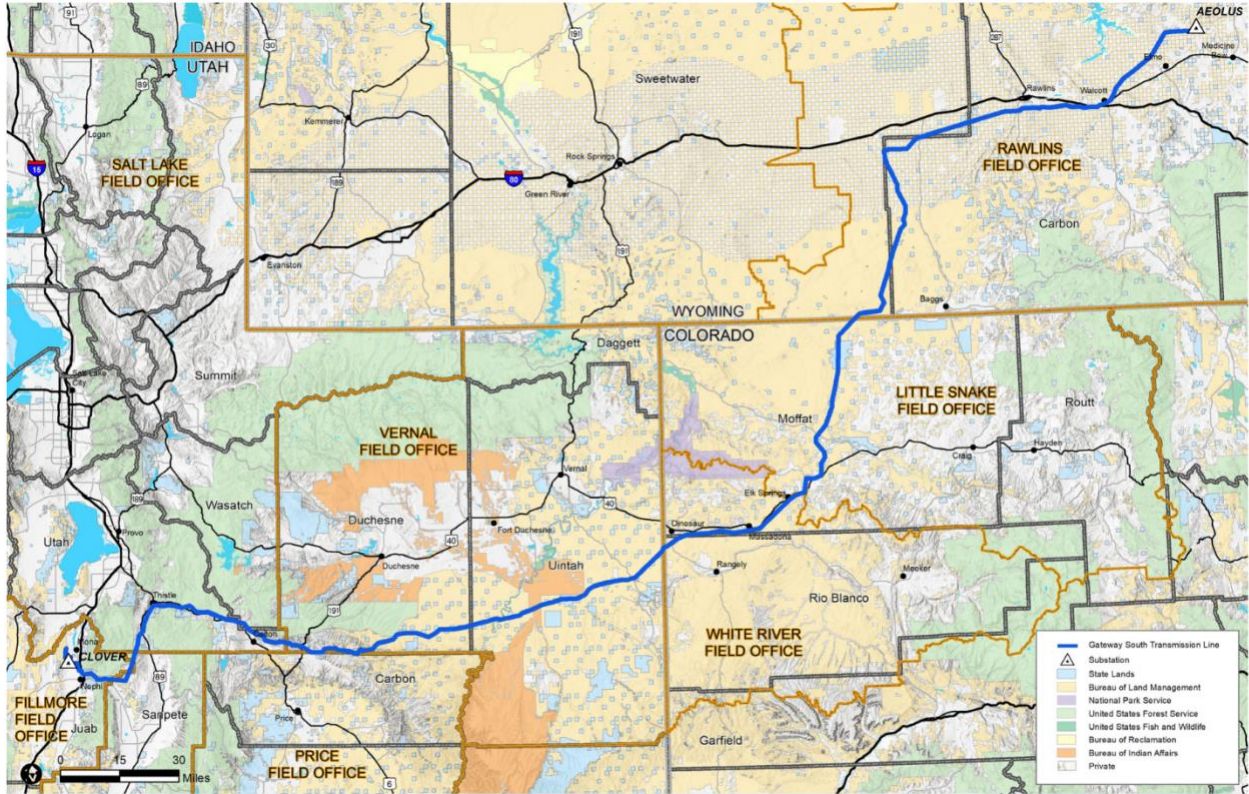


Figure 6. Energy Gateway South Route, Source: PacifiCorp

Although the project was subject to one EIS, four agencies issued RODs approving the project’s ability to access federal lands: BLM, BIA, NPS, and FS.⁶⁷ Most recently, the project received approval for construction from BLM on May 26, 2022.⁶⁸ The Gantt chart below demonstrates the major elements of the project’s review, which totaled 14 years. It does not capture the review that has continued after the project received the approval to begin construction, which include BLM’s EA for an alternative route and the Bureau of Indian Affairs’s ROD.

⁶⁷ "Final Record of Decision: Energy Gateway South Transmission Project." *Department of Agriculture*, (May 2017).

https://www.fs.usda.gov/nfs/11558/www/nepa/96777_FSPLT3_3992812.pdf

⁶⁸ "Biden-Harris Administration Approves Construction of Energy Gateway South Transmission Line." *Bureau of Land Management*, Department of the Interior, (May 2022). <https://www.blm.gov/press-release/biden-harris-administration-approves-construction-energy-gateway-south-transmission>

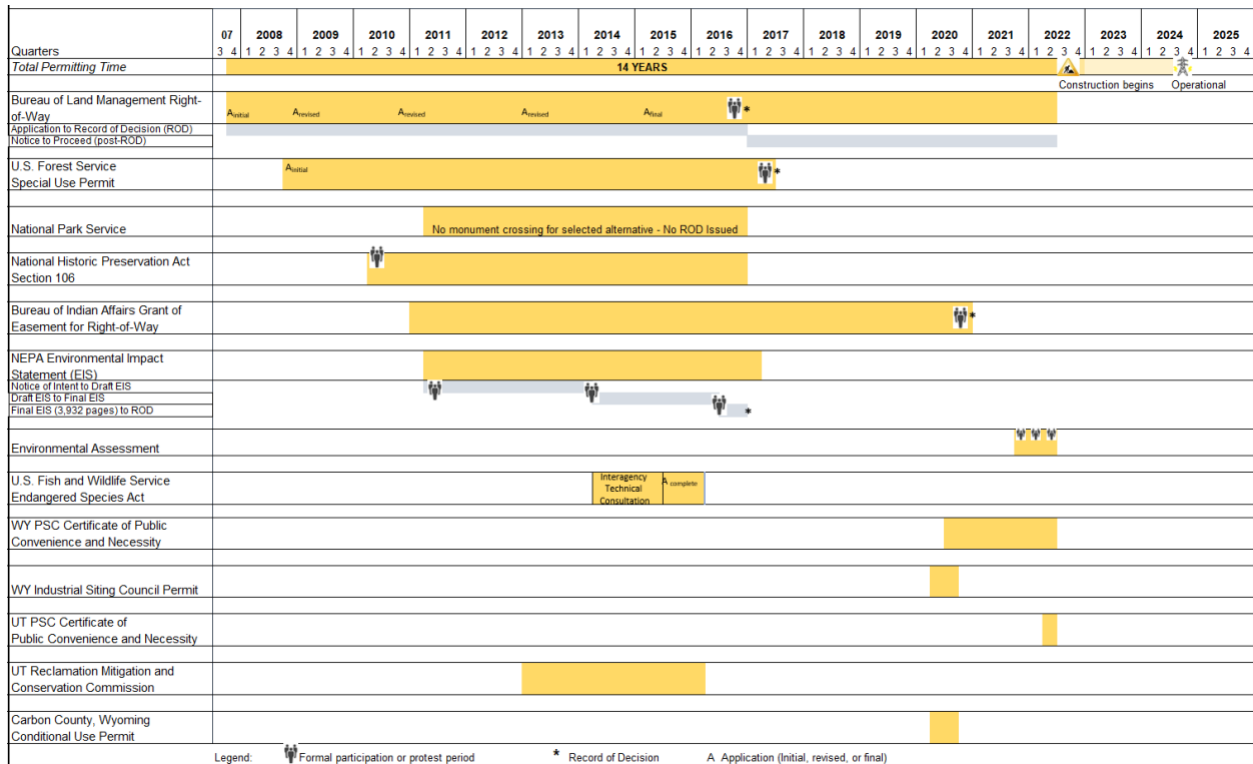


Figure 7. Duration of Energy South Gateway Review, Source: The Permitting Institute

Recent Developments in the Review Process

Congress as well as previous administrations have attempted to improve the permitting process, particularly NEPA review. During the Obama administration, the Fixing America’s Surface Transportation (FAST) Act of 2015 was passed.³⁸ The legislation included provisions that created the Federal Infrastructure Permitting Improvement Steering Council (FIPI SC) and aimed to improve permitting of projects, including “construction of infrastructure for renewable or conventional energy production, electricity transmission, surface transportation, aviation, ports and waterways, water resource projects, broadband, pipelines, manufacturing.”

To take advantage of programming established by the FAST Act, a project must be subject to NEPA; likely cost more than \$200 million; and either not qualify for abbreviated environmental-review processes under any applicable law, or because of its size and complexity, likely benefit from enhanced coordination.³⁹ The FAST Act also decreased the statute of limitations associated with NEPA challenges from six years to two years following the ROD in an effort to reduce the risk of delays posed by litigation. The program was set to expire in 2022, but was permanently authorized as a part of the bipartisan Infrastructure Investment and Jobs Act (IIJA) of 2021.

President Trump issued Executive Order 13807 Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects, which created the One Federal Decision program.⁶⁹ One Federal Decision called for the designation of a single lead agency for the review of each major infrastructure project, which would result in one ROD that incorporates cooperating and participating agencies' considerations. A lead agency's review of a major infrastructure project should be completed within two years. In addition, all federal authorizations related to the project provided by cooperating and participating agencies should be issued within 90 days of the ROD's issuance. The imposition of two-year timelines can provide certainty to developers and reduce risk for investors if reviews continue to thoroughly mitigate environmental impact.

President Trump's administration also attempted to make changes to the regulatory language that defines agency action under NEPA. This included removing language regarding distinctions in "direct", "indirect," and "cumulative effects" of the proposed action. Instead, the Trump administration proposed that only "significant" effects would be subject to review.⁷⁰ The Biden administration reversed these changes with a rulemaking of its own that re-instated the pre-Trump definition of effects.⁷¹

President Biden has since revoked Trump's order with his own executive order, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.⁷² The Infrastructure, Investment and Jobs Act (IIJA), passed in 2021, revives the One Federal Decision program for transportation projects with the Department of Transportation acting as a lead agency, and give FERC the authority to approve interstate transmission lines in priority corridors.⁷³ The FPISC was preserved and renamed the Federal Permitting Improvement Steering Committee (FPISC). In addition, the Biden administration released its own Action Plan that includes five components that to some extent mimic One Federal Decision but without the commitment to a two-year review duration. As a result, many clean energy projects may not benefit from the expedited review assured by One Federal Decision.

The changes in regulation from one administration to the next causes confusion among developers and creates risk for developers and regulators alike as they try to satisfy shifting requirements. Improvements created by legislation have slowly chipped away at various flaws in the review process but at a rate that has proven too slow and narrowly tailored.

There continues to be a lack of enforcement mechanisms associated with cooperating agencies' and delegated reviews. While lead agencies may establish timelines for the completion of the reviews and consultations of other agencies, there is no guarantee that schedule will be followed.

⁶⁹ "Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects." *Federal Register*, National Archives and Records Administration, (August 2017).

<https://www.federalregister.gov/documents/2017/08/24/2017-18134/establishing-discipline-and-accountability-in-the-environmental-review-and-permitting-process-for>

⁷⁰ Bosch and Czaplá. "Will Proposed NEPA Rule Achieve its Goals?" *American Action Forum*, (January 2020).

<https://www.americanactionforum.org/insight/will-proposed-nepa-rule-achieve-its-goals/>

⁷¹ Guillén, Alex. "Biden Administration Reverses Trump-era Rule Limiting Scrutiny of Environmental Impacts." *Politico*, (April 2022).

<https://www.politico.com/news/2022/04/19/biden-reverses-trump-rule-limiting-scrutiny-environmental-impacts-00026207>

⁷² "Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." *The White House Briefing Room*, (January 2021). <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>

⁷³ "H.R.3684 - Infrastructure Investment and Jobs Act." *Congress.gov*, (November 2021). <https://www.congress.gov/bill/117th-congress/house-bill/3684/text>

Federal agencies continue to fail to meet timelines despite the imposition of reporting requirements that call for an explanations as to any delays.

While the actions taken to date have sought to improve agency coordination, litigation continues to be a source of significant delay for some projects. Changes in regulation inevitably lead to litigation as the agency's interpretation and implementation are questioned. The thoroughness of NEPA reviews, consideration of greenhouse gas emissions, and impacts on endangered species continue to serve as the basis of legal claims brought by environmental organizations and landowner groups.

Recommendations and Conclusion

Upon review of the challenges created by NEPA and the resulting permitting process:

- Congress should direct CEQ to expand the list of activities, such as the replacement of existing infrastructure with comparable equipment or work conducted in existing rights of way, that have already been subject to review that can be categorically excluded.
- Congress should provide clarity regarding the role of a lead agency and a participating agency in the decision-making process.
- With goals for resource development on land as well as sector-wide, Congress should ensure existing resources are used appropriately and dedicate additional resources to ensuring review is not a hindrance to continued success.
- The development of resources on federal lands and in federal waters should be subject to expedited review that relies on completed environmental documents and resource management plans, as well as lease rates that are in line with the private market.

While funding technological innovation is meaningful, it can only prove effective if the resulting infrastructure can be readily permitted and constructed. Removing the uncertainty of NEPA review is necessary to do just that. While policies that benefit infrastructure have been prioritized and implemented in the past, a lack of consistency and commitment has undermined their success.

To reduce the risks associated with NEPA review under the current inefficient permitting system, especially those exacerbated by changes from one administration to the next, statutory changes are critical. Repeatedly, cooperating agencies have proven to be a hindrance to the successful completion of NEPA review by delaying project construction or leaving room for questions about the thoroughness of review. With a lack of enforcement mechanisms and plain language regarding the supremacy of a federal ROD over those of state or cooperating agencies, policymakers have plenty of opportunity to improve NEPA review legislatively. And while policymakers have agreed that new infrastructure is critical to future economic success, especially on federal lands, they have failed to extend categorical exclusions or expedited permitting to this very same infrastructure.