Regulatory Update:
Department of Energy Projects and the National Environmental Policy Act

Jacobs, January 2024

Executive Summary

With almost $100 billion in available funding, the Department of Energy (DOE) is pushing to fund research, development, and new energy projects, streamline the environmental review process, and connect energy generation projects to the transmission line grid as soon as practicable. Because these projects are typically considered major federal actions, they are subject to the National Environmental Policy Act (NEPA), which requires federal agencies to assess and consider the environmental effects of these projects before making final decisions. Historically, DOE has not published many NEPA documents as the lead federal agency; however, this will change as DOE funding is resulting in a surge of projects which may need to comply with NEPA with DOE in the lead federal agency role. In 2022 and 2023 DOE established new offices, and issued many new rules, regulations, and guidance to help project proponents navigate this new landscape. This paper summarizes current federal guidance and Jacobs' recent experience with various energy projects. While the NEPA-related work is typically only a part of a project's overall environmental scope, navigating the DOE's NEPA process may be complicated by new processes and regulations. Therefore, creating a resilient and effective DOE NEPA regulatory strategy is paramount to project success.

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I. Introduction

Similar to other United States federal agencies, the Department of Energy (DOE) promulgates its own implementing regulations that detail how the DOE will comply with the National Environmental Policy Act (NEPA), in concert with guidance from the Council on Environmental Quality (CEQ). NEPA compliance is typically triggered for projects that are federally funded, require a federal permit, or are located on federal lands. Many energy projects have a NEPA "hook" and are therefore subject to NEPA compliance. This typically begins with an assessment of the Project's potential environmental impacts, DOE review of the assessment, and completion of the appropriate level of NEPA review.

The environmental review under NEPA can involve three different levels of analysis: a Categorical Exclusion (CatEx) for a project that will not have a significant effect on the human environment; an Environmental Assessment (EA)/Finding of No Significant Impact for a project that will not have significant environmental impacts, or for which impacts have been mitigated; and/or an Environmental Impact Statement (EIS) for a proposed federal action determined to significantly affect the quality of the human environment.

DOE and NEPA in Review. Historically, DOE has not been the lead federal agency for NEPA compliance and has not published many NEPA documents. A search of DOE documents on EPA's EIS database over the past year showed that in four of six DOE EISs, DOE adopted the EIS completed by another federal agency. However, DOE proposes to amend its regulations to serve as the lead NEPA agency for at least one program for qualifying onshore electric transmission facilities.

DOE and NEPA in the Future. With DOE now pushing to fund new energy projects, streamline the environmental review process, and have these energy generation projects connected as soon as practicable to the transmission line grid, DOE NEPA compliance will be necessary for more projects. In 2023, Jacobs' energy projects with some connection to DOE NEPA compliance have experienced a wide spectrum of responses from DOE, from deferring the lead federal agency role for a small renewables project to requirement for an EIS for a major project, varying largely by industry. As a company with strong NEPA experience in practically every industry and agency (including DOE), this provides Jacobs with some great opportunities to assist our clients through these "new" NEPA processes.

II. General DOE Procedures and Regulations for All Project Types (for example, Wind, Solar, Electric Transmission, Battery Storage, Other Energy Projects)

The DOE's procedures and regulations for implementing NEPA are found at 10 Code of Federal Regulations (CFR) Part 1021. The regulations are used in coordination with the CEQ procedural provisions of NEPA (40 CFR Parts 1500–1508).

Subpart D of 10 CFR Part 1021 details the level of NEPA review for DOE actions. Although the level of effort for each of the three types of NEPA assessments can vary significantly, the timeframes have recently been codified under the Fiscal Responsibility Act of 2023 (FRA) (see Section III) and are listed below.

NEPA Assessment Type	CFR Appendix	Level of Effort	Timeline*	Page Limit†
CatEx	A and B	Low	Less than 1 year	None
EA	C	Moderate to High	1 year	75
EIS	D	High	2 years	150

* Following agency acknowledgement of a complete application
† Subject to a few exceptions, and not including appendices

Appendix A to Subpart D of part 1021 – Categorical Exclusions Applicable to General Agency Actions

Appendix B to Subpart D of part 1021 – Categorical Exclusions Applicable to General Agency Actions

Appendix C to Subpart D of part 1021 – Classes of Actions that Normally Require EAs but not Necessarily EISs

Appendix D to Subpart D of part 1021 – Classes of Actions that Normally Require EAs but not Necessarily EISs

Appendix A includes general agency actions (A1 to A15) for which a CatEx may be applicable. For example, routine DOE business actions, or information gathering, analysis, and dissemination are commonly covered under an Appendix A CatEx. Appendix B identifies specific agency actions by categories for which a CatEx may be applicable. Appendix B also identifies standard conditions that are "integral elements" of the CatEx that must be met to qualify for a CatEx. Appendix C describes classes of actions that normally require EAs but not EISs, while Appendix D describes classes of actions that normally require EISs.

III. DOE NEPA Relative to the Fiscal Responsibility Act of 2023

The June 3, 2023, FRA included amendments to the NEPA process. The CEQ is working through the rulemaking process to implement the NEPA amendments. While this process is ongoing, the CEQ is providing a dynamic list of questions and answers to assist agencies with their implementation of the amendments. As of January 2, 2024, the list identifies 10 separate changes to the NEPA process, each of which was effective as of June 3, 2023.

Notably, the FRA will limit the timeline for most reviews to a year and will require agencies to focus reviews on "reasonably foreseeable environmental effects" instead of future impacts that are more difficult to define and quantify. Another of the more significant changes is allowing, under federal agency supervision, project sponsors to prepare EISs. A third FRA change with potential to significantly affect the NEPA process is a revised definition of "major federal action", which specifically excludes certain types of federal funding from compliance from NEPA, subject to certain conditions.

With the influx of DOE funding for energy and climate projects from the Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act (IIJA), also referred to as the Bipartisan Infrastructure Law (BIL), the DOE now needs to address NEPA compliance for this new suite of projects. Since late 2021, DOE has established the following three new offices dedicated to advancing their clean energy strategies:

- Office of Clean Energy Demonstrations (OCED; established December 2021). OCED has issued no EISs or EAs as of January 3, 2024, but currently is reviewing a project under an EA.
- Office of Manufacturing and Energy Supply Chains (OMESC; established 2022). OMESC has issued no EISs or EAs as of January 3, 2024.
- Grid Deployment Office (GDO; established August 2022). GDO has issued one EIS and one supplemental EIS (SEIS) in 2023 and has not issued any EAs. The EIS was adopted from another federal agency, and the SEIS was a revision to an EIS prepared by DOE in 2012.

Because many of the funding opportunities and regulations are new (paired with new NEPA implementing regulations issued by the CEQ [refer to the Phase 2 Regulations Revision]), DOE staff are learning how best to implement NEPA for many of the projects.

IV. DOE NEPA Relative to "Clean Energy" Projects, including Carbon Capture Projects, Long-duration Energy Storage Projects, and Hydrogen Hubs

The OCED manages funding to deliver clean energy demonstration projects. The OCED portfolio includes the following types of projects and programs:

- Advanced Reactor Demonstration Projects
- Carbon Management
- Clean Energy Demonstrations on Mine Land
- Distributed Energy Systems Demonstrations
- Energy Improvements in Rural Areas
- Industrial Demonstrations Program
- Long-Duration Energy Storage Demonstrations
- Regional Clean Hydrogen Hubs (H2Hubs)
- Catalytic Demonstrations Support

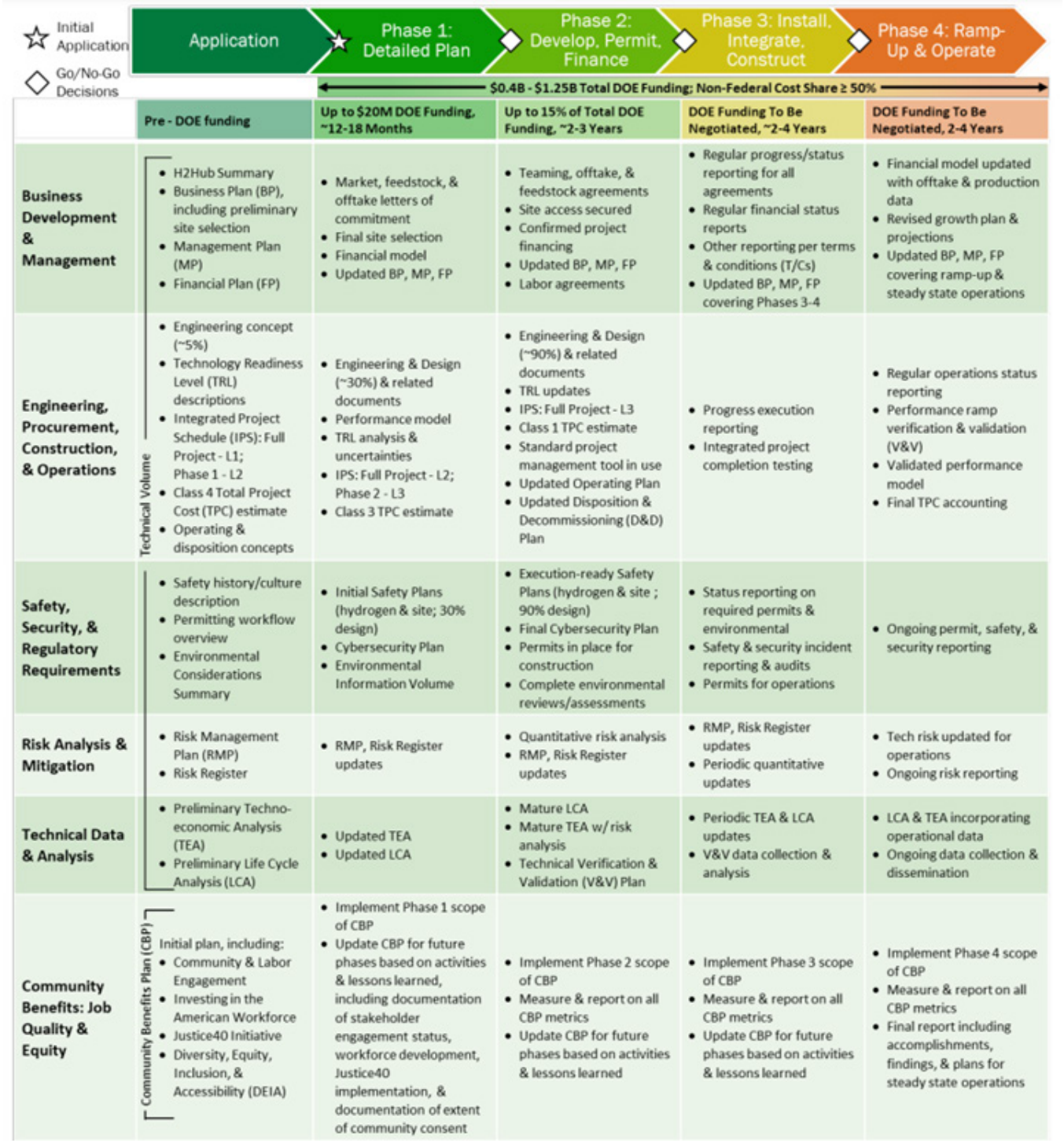
DOE Funding Opportunities, Defined Phases, and Environmental Documentation. The DOE funding process begins with a Funding Opportunity Announcement (FOA) that provides information about the funding program. This includes project and application requirements and deadlines, beginning with submittal of a concept paper (for hydrogen hubs) or Letter of Intent (for LDES and carbon capture, utilization, and storage [CCUS] projects). DOE reviews the submitted information and selects projects for which an application is requested, starting the pre-application period. During the pre-application period (which is now completed for the first round of hydrogen hubs, some LDES facilities, and a number of other grant programs, but ongoing for other DOE-funded projects), the applicant gathers information required by the FOA and uses this information to compile an application. Per the Biden administration's environmental and social justice initiatives, a significant and early component of any DOE-funded project is a well-developed and implemented Community Benefit Plan (CBP).

For the Regional Clean H2Hubs DOE has defined a four-phase structure for their development:

1. Phase 1 – Detailed Project Planning. This phase encompasses initial planning and analysis activities to ensure that the overall H2Hub concept is technologically and financially viable, with input from relevant local stakeholders. This requires full engagement with the DOE's NEPA team to develop environmental and regulatory plans to prepare for permitting and approval processes in Phase 2. Outreach and stakeholder engagement, which should be active before the application process, should continue in Phase 1 as the H2Hub site(s) are finalized and community economic and development impacts become clearer. Per DOE, applicants should plan approximately 12-18 months for Phase 1 activities.
2. Phase 2 – Project Development, Permitting, and Financing. Phase 2 will finalize engineering designs and business development, site access, labor agreements, permitting, offtake agreements, and community engagement activities. NEPA compliance and environmental permitting and clearances are completed in Phase 2. By the completion of Phase 2, safety and security plans should be finalized and execution ready. All necessary permits and approvals should be in place to prepare for construction, including completion of required NEPA reviews. DOE expects that Phase 2 activities will take up to 2 to 3 years but could be shorter.
3. Phase 3 – Installation, Integration, and Construction. Phase 3 will begin installation, integration, and construction activities. H2Hubs will employ industry standard project management tools and will be required to provide regular status updates and reports. Plans developed in the preceding phases will be revised and updated as appropriate to reflect actual performance. Previously and newly developed risks will be tracked, actively managed, and regularly reported to DOE. Reporting frequencies and content requirements will be unique to each H2Hub and negotiated prior to Phase 3 commencement. DOE expects that Phase 3 activities may take approximately 2 to 4 years, but applicants may propose shorter or longer lengths.
4. Phase 4 – Ramp-up and Sustained Operation. Phase 4 will ramp-up the H2Hub to full operation, including data collection to analyze the H2Hub's operation, performance, and financial viability. To meet a key OCED objective that DOE-funded commercial demonstration projects catalyze follow-on private sector investments as well as Justice40 goals, Phase 4 will also include substantial financial, socio-economic, environmental, and operational data collection and reporting to DOE. DOE expects that Phase 4 activities may take approximately 2 to 4 years but may extend longer depending on H2Hub-specific characteristics.

For some of the smaller programs, this has been condensed to a three-step process.

The following graphic, from the Hydrogen Hub FOA , provides a more detailed listing of the individual requirements and deliverables related to each phase of a H2Hub. While the focus of this document is on the NEPA component of the DOE requirements, NEPA-related work is only one small part of the overall project.



	Pre - DOE funding	Up to $20M DOE Funding, ~12-18 Months	Up to 15% of Total DOE Funding, ~2-3 Years	DOE Funding To Be Negotiated, ~2-4 Years	DOE Funding To Be Negotiated, 2-4 Years
Business Development & Management	• H2Hub Summary • Business Plan (BP), including preliminary site selection • Management Plan (MP) • Financial Plan (FP)	• Market, feedstock, & offtake letters of commitment • Final site selection • Financial model • Updated BP, MP, FP	• Teaming, offtake, & feedstock agreements • Site access secured • Confirmed project financing • Updated BP, MP, FP • Labor agreements	• Regular progress/status reporting for all agreements • Regular financial status reports • Other reporting per terms & conditions (T/Cs) • Updated BP, MP, FP covering Phases 3-4	• Financial model updated with offtake & production data • Revised growth plan & projections • Updated BP, MP, FP covering ramp-up & steady state operations
Engineering, Procurement, Construction, & Operations	• Engineering concept (~5%) • Technology Readiness Level (TRL) descriptions • Integrated Project Schedule (IPS): Full Project - L1; Phase 1 - L2 • Class 4 Total Project Cost (TPC) estimate • Operating & disposition concepts	• Engineering & Design (~30%) & related documents • Performance model • TRL analysis & uncertainties • IPS: Full Project - L2; Phase 2 - L3 • Class 3 TPC estimate	• Engineering & Design (~90%) & related documents • TRL updates • IPS: Full Project - L3 • Class 1 TPC estimate • Standard project management tool in use • Updated Operating Plan • Updated Disposition & Decommissioning (D&D) Plan	• Progress execution reporting • Integrated project completion testing	• Regular operations status reporting • Performance ramp verification & validation (V&V) • Validated performance model • Final TPC accounting
Safety, Security, & Regulatory Requirements	• Safety history/culture description • Permitting workflow overview • Environmental Considerations Summary	• Initial Safety Plans (hydrogen & site; 30% design) • Cybersecurity Plan • Environmental Information Volume	• Execution-ready Safety Plans (hydrogen & site ; 90% design) • Final Cybersecurity Plan • Permits in place for construction • Complete environmental reviews/assessments	• Status reporting on required permits & environmental • Safety & security incident reporting & audits • Permits for operations	• Ongoing permit, safety, & security reporting
Risk Analysis & Mitigation	• Risk Management Plan (RMP) • Risk Register	• RMP, Risk Register updates	• Quantitative risk analysis • RMP, Risk Register updates	• RMP, Risk Register updates • Periodic quantitative updates	• Tech risk updated for operations • Ongoing risk reporting
Technical Data & Analysis	• Preliminary Techno-economic Analysis (TEA) • Preliminary Life Cycle Analysis (LCA)	• Updated TEA • Updated LCA	• Mature LCA • Mature TEA w/ risk analysis • Technical Verification & Validation (V&V) Plan	• Periodic TEA & LCA updates • V&V data collection & analysis	• LCA & TEA incorporating operational data • Ongoing data collection & dissemination
Community Benefits: Job Quality & Equity	Initial plan, including: • Community & Labor Engagement • Investing in the American Workforce • Justice40 Initiative • Diversity, Equity, Inclusion, & Accessibility (DEIA)	• Implement Phase 1 scope of CBP • Update CBP for future phases based on activities & lessons learned, including documentation of stakeholder engagement status, workforce development, Justice40 implementation, & documentation of extent of community consent	• Implement Phase 2 scope of CBP • Measure & report on all CBP metrics • Update CBP for future phases based on activities & lessons learned	• Implement Phase 3 scope of CBP • Measure & report on all CBP metrics • Update CBP for future phases based on activities & lessons learned	• Implement Phase 4 scope of CBP • Measure & report on all CBP metrics • Final report including accomplishments, findings, & plans for steady state operations

The funding opportunity announcement (FOA) solicited plans for all four phases of proposed H2Hub activities; however, DOE will initially authorize funding for only Phase 1. DOE's review and evaluation of activities in each phase will inform go/no-go decisions that occur between or within phases. To assist DOE in complying with NEPA requirements, funding recipients provide environmental information at various stages.

- Environmental Considerations Summary (ECS) – Some FOAs require the ECS as part of the application. If the ECS is not a part of the application, all applications that are selected for negotiation will require an ECS as part of the award process. In early October 2023 DOE updated their ECS template to clarify its applicability, by adding an exemption to the ECS process for projects limited exclusively to "intellectual, academic, or analytical activities."
- Environmental Information Volume (EIV) – The award recipient completes an EIV during Phase 1 of the project. The information in the EIV is used during DOE's Phase 2 NEPA review before the project can advance to Phase 3's construction activities. DOE uses the EIV to inform their determination on the level of NEPA review required and to provide baseline environmental information to support the NEPA review process. Completion of all NEPA-related activities is a required component of Phase 2 to Phase 3 go/no-go decision metrics. In November 2023, DOE published new interim guidance

on "Preparation of Environmental Information Volume for Project Funding Awardees," which provides detailed guidance related to the expected content of EIVs. This guidance replaces the much less detailed information that was previously provided as an appendix to the FOAs.

V. DOE NEPA Relative to CatExs for Some Energy Storage Projects and Existing Transmission Lines for Solar

DOE issued a Notice of Proposed Rulemaking on November 16, 2023, to establish a new CatEx for certain energy storage systems and to revise existing CatExs for upgrading and rebuilding transmission lines and for solar photovoltaic systems.

The proposed CatEx changes are summarized as follows:

- **Proposed Changes to Categorical Exclusion B4.13 for Upgrading and Rebuilding Existing Powerlines** – CatEx B4.13 currently applies to upgrading or rebuilding "approximately 20 miles in length or less" of existing powerlines and allows for minor relocations of small segments of powerlines. DOE proposes to remove the mileage limitation, add options for relocating within an existing right-of-way or within otherwise previously disturbed or developed lands, and add new conditions.
- **Proposed New Categorical Exclusion B4.14 for Certain Energy Storage Systems** – DOE proposes to establish a new CatEx for construction, operation, upgrade, or decommissioning of an electrochemical-battery or flywheel energy storage system within a previously disturbed or developed area or within a small area contiguous to a previously disturbed or developed area. The total acreage used for an energy storage system will be defined by the proposed project's needs. Based on experience, DOE anticipates that energy storage systems typically require 15 acres or less and would be sited close to energy, transmission, or industrial facilities.
- **Proposed Changes to Categorical Exclusion B5.16 for Solar Photovoltaic (PV) Systems** – DOE's current CatEx B5.16, solar photovoltaic systems, includes the installation, modification, operation, and removal of solar PV systems located on a building or other structure or, if located on land, within a previously disturbed or developed area comprising less than 10 acres. DOE proposes to change "removal" of a solar PV system to "decommissioning." Decommissioning encompasses recycling and other types of actions that occur when a facility is taken out of service. DOE also proposes to remove the acreage limitation for proposed projects.

VI. DOE NEPA Relative to Onshore High-voltage Electric Transmission Facilities

On August 10, 2023, the Grid Deployment Office proposed the establishment of the Coordinated Interagency Transmission Authorizations and Permits (CITAP) Program to accelerate federal environmental review and permitting processes for qualifying onshore electric transmission facilities. To be consistent with the FRA, the CITAP Program aims for a more streamlined process that will set deadlines for federal authorizations and permits for electric transmission on a 2-year timeline while ensuring meaningful engagement with Tribes, local communities, and other stakeholders. DOE proposed to amend its regulations to provide that **DOE will serve as the lead NEPA agency** and that, in coordination with any NEPA co-lead agency and with the relevant federal entities, DOE will prepare a single EIS to serve as the NEPA document for all required federal authorizations. DOE also proposed that a developer must participate in the Integrated Interagency Preapplication (IIP) Process for its projects to participate in the Program. The IIP Process is very similar to the Federal Energy Regulatory Commission's (FERC)'s Pre-Filing Process, which requires submittal and agency review of detailed information before an application can be filed. The CITAP Program will be limited to high-voltage transmission projects that are expected to require preparation of an EIS.

On December 19, 2023, DOE's Grid Deployment Office released final guidance for the National Interest Electric Transmission Corridor (NIETC) designation process. This process will enable DOE to independently identify "narrow areas in the country" where development of transmission infrastructure is needed and to work with affected states, Tribes, local communities, and industry to accelerate the development of transmission projects in those areas. Designation of NIETCs can assist with focusing commercial facilitation, signal opportunities for beneficial development to transmission planning entities, and unlock siting and permitting tools for transmission projects in identified areas.

Areas that achieve the NIETC designation qualify for key federal financing and permitting tools to advance transmission deployment. These include public-private partnerships through the $2.5 billion Transmission Facilitation Program under the BIL and direct loans through the Transmission Facility Financing Program (a $2 billion program) under the IRA. On the permitting side, the NIETC designation allows the FERC to issue permits for the siting of transmission lines within an NIETC under certain circumstances where state siting authorities do not have the authority to site the line, have not acted on an application for over a year, or have denied an application.

Please reach out to Dan Laubenthal for more information about Jacobs' capabilities related to transmission lines.

Dan Laubenthal

VII. Non-NEPA DOE News that May be Relevant to Energy Projects

DOE Relative to Offshore Wind. In mid-September 2023, the Department of the Interior and DOE released An Action Plan for Offshore Wind Transmission Development in the U.S. Atlantic Region. This new plan hopes to catalyze offshore wind energy development while strengthening domestic supply chains and creating jobs. Read the full announcement at this link.

DOE Relative to Critical Materials. DOE released the 2023 Critical Materials Assessment, which evaluated materials for their criticality to global clean energy technology supply chains. This list is of energy-specific critical and near-critical materials through 2035. The assessment features a global scope with U.S. domestic interests put into context.

VIII. Project Proofs of DOE NEPA Projects (2016–2024)

Refer to the following figure for a map that illustrates Jacobs' representative project experience, including projects with DOE as a NEPA lead or cooperating agency, DOE funding via IIJA/IRA grants or loans, or other DOE regulatory compliance.

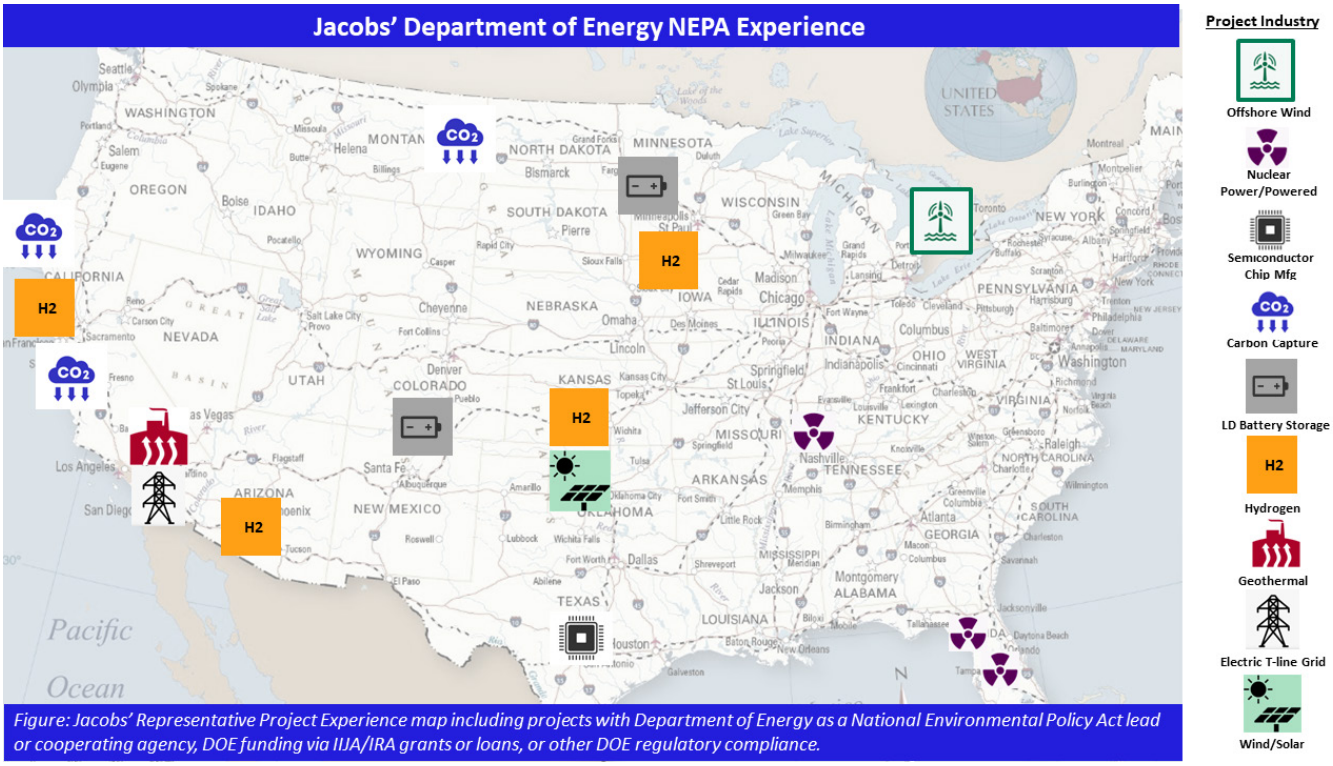


Figure: Jacobs' Representative Project Experience map including projects with Department of Energy as a National Environmental Policy Act lead or cooperating agency, DOE funding via IIJA/IRA grants or loans, or other DOE regulatory compliance.

For More Information

Jacobs is actively working on DOE-funded projects across the country. We are happy to discuss your projects and leverage our DOE and NEPA experience to make your project more successful.

Please direct questions to: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