Re-Energizing America

Re-Energizing America: An Action Plan for a DOE That Delivers

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ACKNOWLEDGMENTS

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Clean Tomorrow is a nonprofit organization that advances policies that reduce climate emissions by turning policy ambition into action. We work to catalyze rapid change that will accelerate the innovation and growth of clean energy.

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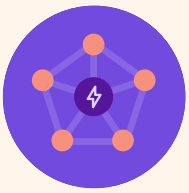
Executive Summary

The United States faces a pivotal moment in energy history. Surging electricity demand, intensifying geopolitical volatility, global climate imperatives, and the rise of China as a technological rival make sustained federal leadership in energy innovation essential. The Department of Energy (DOE) is the cornerstone of the U.S. energy innovation ecosystem. Yet despite historic levels of funding authorized in recent years, DOE has chronically struggled to deploy dollars effectively, hampered by institutional fragmentation, outdated contracting infrastructure, and political churn that undermines long-term execution.

This Action Plan makes the case that funding alone is not enough. Congress can appropriate billions, but without a DOE that is operationally fit for purpose, those investments will not be able to successfully catalyze the development of new energy technologies. The reforms proposed here are practical changes that can be implemented now to unlock the full potential of federal energy innovation programs.



The plan is organized around five strategic priorities:

1. **Build a seamless innovation pipeline** by empowering a permanent strategy office—such as the Office of Technology Commercialization—to own cross-departmental commercialization goals, and implementing shared KPIs and common frameworks to align offices around end-to-end outcomes for priority technology areas.

2. **Improve program design agility** by matching funding mechanisms to program risk profiles, establishing a Program Design Center reporting to the Secretary, and creating a tiered approval structure that delegates authority to the appropriate level.

3. **Modernize legal and contracting support** by appointing an Innovation Legal Advisor, building a dedicated contracting innovation team to develop reusable templates, deploying specialized contracting officers across field offices, and reforming career ladders to reward advanced expertise.

4. **Align programs to industry needs** by creating a unified applicant portal, establishing navigator support for first-time applicants, reforming merit review timelines, and institutionalizing robust pre-solicitation industry engagement.

5. **Enhance cross-program collaboration** by tying SES and GS-15 performance plans to cross-office coordination, harmonizing data standards, appointing single Selection Officials for joint programs, fencing cross-cut budget pools from annual pressures, and standardizing Small Business Innovation Research and Technology Commercialization Fund contributions department-wide.

Together, these reforms will allow DOE to reach its full potential as an agency that reliably delivers outcomes for American innovators, taxpayers, and the nation's energy future.

Summary of Recommendations and Key Actors

1. Build a seamless innovation pipeline from research to deployment	Set pragmatic goals based on realistic decadal targets for priority technology areas, and have a single permanent strategy office lead the effort, while coordinating with the relevant program offices.	DOE
	Empower the Office of Technology Commercialization to be an internal center for a common innovation framework.	DOE, with sufficient Congressional appropriations
	Implement shared KPIs, tools, and common language across offices to drive behavior change and improve TRL/ ARL handoffs.	DOE
2. Improve agility in program design and funding mechanisms	Expand the use of agile funding mechanisms, and match the funding instrument to program objectives and level of risk.	DOE, with flexible authority from Congress
	Establish a Program Design Center that reports directly to the Secretary.	DOE, could be authorized and funded by Congress
	Create a tiered approval approach.	DOE, with buy-in from the White House
3. Modernize legal and contracting support for innovation	Appoint an "Innovation Legal Advisor" to diagnose and solve legal and contractual barriers to DOE's innovation and commercialization mission.	DOE
	Create a legal & contracting innovation team.	DOE
	Create a mobile cohort of specialized contracting officers.	DOE
	Reform contracting and legal career ladders and incentives.	DOE, with flexible authority from Congress

4. Align programs to industry and innovator needs	Create a "front door" of DOE to prioritize accessibility and expand the applicant pool.	DOE
	Design programs with first-time applicants in mind.	DOE, new recurring opportunities may need Congressional authority and funding
	Leverage intentional external engagement to adapt program design to industry needs, build trust, and attract high-quality applications.	DOE
	Reform merit review and negotiation processes for faster execution, lower burden, and increased transparency.	DOE
	Expand access to national laboratory resources.	DOE
5. Enhance cross-program collaboration	Align individual and office-level incentives with collaborative outcomes.	DOE
	Improve departmental IT and data standards to facilitate information sharing and AI readiness.	DOE, could be in coordination with other agencies
	Establish clear, decisive governance structures for cross-cutting initiatives.	DOE
	Create fenced cross-cut funds for joint initiatives.	DOE, Congress
	Implement a simpler and uniform approach for SBIR and TCF.	DOE, with flexible authority from Congress

INTRODUCTION

Why DOE Needs an Action Plan

Energy Innovation as a National Priority

The United States stands at a critical juncture. For the first time in decades, electricity demand is increasing due to the growth of AI, electrification of transportation and industry, and reshoring of manufacturing. New geopolitical threats to supply chains and energy prices are emerging. We have a formidable competitor to our historical dominance in technological advancement in China.

In the first report of the Re-Energizing America Initiative, we at Clean Tomorrow argued that now is not the time to cede global leadership on energy innovation. We laid out four policy imperatives that must guide the next generation of energy innovation policy: economic opportunity, affordability, security, and decarbonization.[1] To put these imperatives into practice, sustained, increased federal investment in energy research, development, and demonstration will ensure that we foster the development of the energy technologies of the future and make sure they are built and deployed domestically to reap their full benefits.

The federal government plays a unique and critical role in shepherding the technologies of the future from the lab to market. A myriad of federal agencies—Department of War, National Science Foundation, Department of Agriculture, Department of Commerce—all play a role, but none is more important than the Department of Energy (DOE). DOE is the engine behind the U.S. federal apparatus for energy innovation. Grown out of the Manhattan Project and officially created during the oil crisis of the 1970s, DOE programs support everything from basic science research at universities to user facilities at the national labs to large-scale demonstration and commercial energy projects, with supportive infrastructure in between.

The 2020s: Significant Changes at the Department of Energy

The 2020s have thus far brought major changes to DOE. Renewed authorities under the Energy Act of 2020 were followed by historic investments and new programs created by the Infrastructure Investment and Jobs Act (IIJA) in 2021 and the Inflation Reduction Act (IRA) in 2022. These laws, in addition to the CHIPS and Science Act, authorized and allocated billions in new appropriations for energy innovation funding, including financial assistance for demonstration-scale projects and new loan authority.

The new investments marked a shift from DOE's historic R&D focus towards commercialization and deployment, and tested the limits of DOE's operational capabilities. Traditional funding

agreements that had been designed for R&D were employed for first-of-a-kind commercial projects that involved significant collaboration with private sector awardees. Programs encountered competing political priorities, institutional risk aversion, and layers of process and procedure that slowed implementation.[2]

A reorganization in December 2025 consolidated and moved offices to align with specific Administration priorities. The Administration has since employed innovative funding tools and established new partnerships with the private sector via deals and loans that could provide a blueprint for a modernized DOE. At the same time, the loss of staff capacity and uncertainty around the status of projects across the department poses a serious risk to DOE's ability to maintain sufficient oversight of federal funds and has called into question DOE as a reliable partner.

Challenges and Opportunities at this Critical Juncture

While several implementation challenges have surfaced recently, various administrations have dealt with the same underlying issues since DOE was established. Recent expiration of authorities from the Energy Act of 2020 and imminent expiration of IIJA, along with the significant reductions in staffing and capacity seen under the current Administration, leaves DOE at an inflection point. Now is the opportunity not just to reauthorize DOE and to allocate sufficient funding for key priority areas, but to modernize the Department and ensure that it is fit for purpose as we embark on the great challenge of developing the technologies necessary to power a low-carbon future and reach our national objectives.

Important conversations are happening now around lessons learned from the Biden Administration,[3] bigger picture questions on the role of the federal government to implement energy and climate strategies,[4] and ideas for DOE and Congress to encourage effective program design and implementation.[5,6] In this report, we propose actionable reforms for DOE to streamline operations and eliminate inefficiencies while maintaining technical excellence and expeditious policy implementation; all it takes is an executive team eager to take them on.

Going forward, it is not enough for Congress to authorize programs and dedicate the funding Clean Tomorrow has called for to remain globally competitive in energy innovation. The agency must adapt to meet modern challenges and be equipped to execute effectively.

Our Recommendations for a DOE that Delivers

The following are actionable and practical recommendations to improve DOE's operational capacity for energy innovation and to maximize the use of taxpayer dollars. This is not a comprehensive list of reforms. Instead, our recommendations are no-regrets changes that offer immediate gains. This report is a starting point for thinking about steps that could be taken at any time to empower DOE to meet modern-day challenges with speed and effectiveness. We have organized them under five sections that range from high-level strategy to on-the-ground mechanics:

Build a Seamless Innovation Pipeline from Research to Deployment

Improve Agility in Program Design and Funding Mechanisms

Modernize Legal and Contracting Support for Innovation

Align Programs to Industry and Innovator Needs

Enhance Cross-Program Coordination

Ultimately, the goal is a DOE that can maximize the economic, affordability, security, and decarbonization impact of federal innovation programs through efficient, coordinated federal action. This evolution will come from cultural changes and an empowered staff (both career and political), but also from an organizational structure that enables DOE's operations to be as innovative as its science—creating an institution built for continuity that serves as a reliable partner to American innovators and a trusted engine for the nation's energy security and economic future.

Build a Seamless Innovation Pipeline from Research to Deployment

Rooted in DOE's history, the Department is organized as a set of independent offices with diverse missions and priorities with no cohesive framework. Technologies that show promise in the lab lack continuous support as they develop and mature, and as a result we have repeatedly seen technologies invented in the United States commercialized overseas. In its ideal form, DOE programs should encourage exploration and discovery across a wide range of technologies, with the mechanisms to support the commercialization of those that are ready and able to scale. This section lays out how DOE can build a seamless innovation pipeline from early research to deployment.

Recommendation 1.1: Set pragmatic goals based on realistic decadal targets for priority areas and have a single permanent strategy office lead the effort.

Each new administration, and often each new Secretary, wants to leave its mark, which too often translates into launching new branded initiatives or undertaking a reorganization of the Department to meet short-term political objectives. This constant churn—this "governance by announcement"—is profoundly damaging. It disrupts the momentum of long-term projects, which often require a decade or more to bear fruit, and it squanders the hard-won lessons of previous efforts. A Secretary can establish coordinating committees and commission multi-year strategy documents, but these efforts often lack the authority to compel genuine collaboration around strategic objectives.

The more durable model is to depoliticize difficult technical challenges that can provide improved reliability, resilience, and cost effectiveness to our energy system. This means housing ambitious goals within a permanent strategy office, granting a single program office unambiguous selection authority and programmatic responsibility, and holding that office accountable for the outcome, while structurally requiring input and collaboration from other relevant parts of the Department. This approach prioritizes robust institutional process over vulnerable political branding. The model allows for strategic goals to be anchored in implementation feasibility based on statutory authority and funding, while also driving cross-Department coordination.

There are a few options for this permanent strategy office that would serve as the goal-setting center. It could be the Office of Technology Commercialization (OTC), which is currently the only DOE office with a mission to address commercialization challenges across offices and programs. Another alternative is the Office of Strategy and Technology Roadmaps, which has historically focused on narrower emerging technological challenges but under the most recent reorganization has been elevated to take on a larger strategic position within the Department.[7] While Congress, the White House, and the Secretary's office all have roles to play in setting national priorities and strategy, having a DOE office that can connect broader objectives to on-the-ground program implementation would enable greater durability and cohesion.

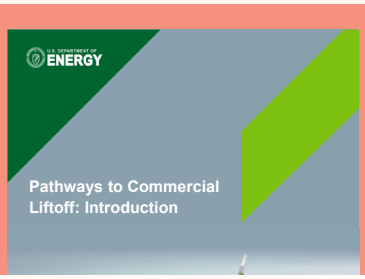
CASE STUDY

EarthShots and Liftoff Reports

Two efforts launched during the Biden Administration highlight the challenges and opportunities of setting strategic objectives.

EarthShots Reports

The Energy EarthShots were launched in 2021 and formulated as "goal-setting as strategy". They established ambitious, unifying targets for technologies like hydrogen and long-duration storage.[8] However, funding remained largely siloed within existing programs, with no clear, integrated funding stream to pull technologies across the full TRL spectrum.[9] The goals set out in each EarthShot would have required significant increase in funding across the board, which was never provided by Congress. Ultimately, as a top-down approach, the EarthShots did not transcend between administrations.



Liftoff Reports

The "Pathways to Commercial Liftoff" reports were an initiative launched in 2023, coordinated by the Office of Technology Commercialization and developed with extensive input from other DOE offices as well as private sector stakeholders.[10] While not official DOE strategy or policy documents, they served to align DOE offices and the private sector around what it would take for technologies to achieve commercial "liftoff," the point where emerging energy technologies become largely self-sustaining and do not depend on public investment, instead attracting private capital. The reports set a framework for commercializing new technologies, and highlighted existing federal efforts to achieve liftoff goals. Also discontinued by the next administration, they have been used and circulated widely to align action around technology commercialization.[11]

Recommendation 1.2: Empower the Office of Technology Commercialization to be an internal center for a common innovation framework.

The first Re-Energizing America report described two "valleys of death" in the innovation pipeline, the first being the gap between the lab bench and prototype and the second between pilot and commercial deployment. Functionally, this is exacerbated at DOE by the absence of a single entity responsible for or incentivized to shepherd technologies across those gaps.

The Office of Technology Commercialization was established in 2015 to expand the commercial impact of DOE's research and development portfolio. It was authorized in statute in the Energy Act of 2020 during the first Trump Administration. As a coordinating office with a cross-department mission, OTC is uniquely poised to be an internal center for orienting program offices towards commercialization objectives and overcoming these "valleys of death." It has initiated tools such as the ARL framework (see case study on ARLs) and coordinated internal working groups for innovative funding and partnership mechanisms such as Partnership Intermediary Agreements (PIAs) and the Foundation for Energy Security and Innovation (FESI). Congress and DOE should sufficiently fund and empower OTC to continue carrying out this important function for the Department.[12] Additionally, strategy offices embedded within individual program offices should be encouraged to collaborate with OTC to coordinate and leverage common frameworks.

CASE STUDY

Adoption Readiness Levels

In an attempt to comprehensively track commercialization progression in both technology and market readiness, DOE developed the Adoption Readiness Level (ARL) framework.[13] ARLs build upon the Technology Readiness Level (TRL) framework developed by NASA in the 1970s that assigns a number scale to technology development, from 1 (basic research) to 9 (system proven in an operational environment).[14] ARL takes TRL a step further to assess commercialization readiness beyond technological development, covering four risk areas including value proposition, resource maturity, market acceptance, and license to operate. As part of their process to develop the framework, OTC worked with program offices to plot their portfolio within the context of ARL. And, increasingly, offices aligned their solicitations with ARL assessments. Having a common framework to assess readiness that is adopted across DOE and continuously used across offices can encourage DOE to consistently assess readiness to understand handoff points between offices.[15] While no technology commercialization metric is perfect, having a common language is useful for not only aligning offices and programs, but also for communicating with the private sector on the specific challenges and objectives a DOE program is seeking to address.

Recommendation 1.3: Implement shared KPIs, tools, and common language across offices to drive behavior change and improve TRL/ARL handoffs.

DOE offices are siloed with discrete missions and separate appropriations lines, with few incentives for coordination across the innovation pipeline as projects and technologies advance along the TRL/ARL continuum. A technology may prove scientifically viable and exciting, but if it does not perfectly align with the narrow programmatic goals of an applied office (as mandated by Congressional budget guidance) at that exact moment in the budget cycle, it receives delayed follow-on funding, at best, or none at all. This systemic flaw ensures that only the most resilient—or politically favored—technologies survive the journey, while countless others are lost to a simple lack of institutional coordination on long-term objectives.

The most effective path forward is not a politically difficult, large-scale reorganization but a pragmatic realignment of incentives. The new framework must build operational structures that incentivize collaboration by design. This means establishing shared performance metrics that span multiple offices, creating joint ownership of strategic goals, and implementing aligned funding mechanisms that reward cross-functional teams for achieving end-to-end outcomes. When a program manager in the Office of Science shares a key performance indicator with counterparts in ARPA-E and applied-energy offices, having a common objective of advancing commercially promising technologies should be the default. Collaboration should not be viewed as an extra burden and become the core requirement for organizational and professional success.

Shared KPIs: In addition to incorporating performance incentives for GS-15 managers and SESs to develop transition plans for projects and coordinate with other offices under Recommendation 5.1, offices should implement shared KPIs in their program assessments. This would realign incentives around impact and project success beyond specific funding opportunities.

Common tools and frameworks: As discussed in the above recommendation, OTC's development of the ARL framework provided a shared method for assessing commercialization barriers beyond technical milestones. They also developed the Commercial Adoption Readiness Assessment Tool (CARAT), which was used by OCED to assess project risk and provides a useful template for project oversight across offices.[16]

Require common trainings across program office staff: A common set of skills and shared language can help to align project and operational practices, especially if it corresponds with private sector methods. This could include the PMP or an equivalent for project managers and officers, and common trainings on risk management for managers/SES.

Improve Agility in Program Design and Funding Mechanisms

DOE has wide latitude in how it designs programs and funding mechanisms that Congress authorizes and appropriates. What's clear from recent past is that the funding mechanism matters: DOE can implement programs that cost less to administer and fit the needs of awardees, without sacrificing federal oversight of taxpayer dollars. This section discusses how DOE can adopt program design and funding mechanisms that deliver.

Recommendation 2.1: Expand the use of agile funding mechanisms, and match the funding type to the program objectives and level of risk.

DOE's fundamental funding toolkit of grants, cooperative agreements, and procurements were authorized and implemented around an earlier, slower-moving era of long-term government-directed projects to experienced awardees. Today's mix of commercial-ready technologies, first-of-a-kind demonstrations, research and development, and capacity-building projects requires a clearer match between the mechanism, the level of oversight, and the maturity of the applicant.

In the early 2010s, concern about limited oversight under widespread use of grants pushed many offices to rely almost exclusively on cooperative agreements, which have an explicit directive for direct federal involvement in project execution. That shift improved discipline in some programs but increased workload. Now, with thousands fewer federal staff, a more deliberate, risk-tiered approach that considers what can be done with existing capacity is needed.

Each funding program should pair the mechanism and the level of DOE engagement to the project's risks and to the awardee's sophistication. The primary funding mechanisms now available at the department include:

- **Grants** provide funding with minimal federal involvement, funding an activity that is not necessarily linked to specific outcomes, such as pure R&D projects. They make sense for projects with lower compliance risk, especially for experienced performers where more general deliverables and reporting are sufficient.
- **Cooperative agreements** have higher federal involvement and fit higher risk projects that benefit from specific negotiated milestones, thoughtful go/no-go checkpoints, and active DOE participation.
- **Prizes** are best for problems with uncertain solution paths but clear desired outcomes. They surface the strongest ideas quickly, lower the barrier for first-time DOE participants, and use staged down-selection to hit specific technical targets. They are not a tool for capacity building or broad distribution of funds.

- **Partnership Intermediary Agreements (PIAs)** fit capacity-building activities that involve many small, managed awards to numerous entities without the competitive context of a prize, or situations that require very fast execution, particularly for first-time applicants that need flexibility and support.
- **Other Transactions (OTs)** fit special cases where flexibility is essential and the effort warrants the significant negotiation bandwidth required to craft terms from first principles (see the box on OT Potential and Pitfalls).
- **Technical Assistance/Vouchers** provide in-kind or financial support for technical due-diligence, access to national lab facilities, or other types of access to expertise to support companies, communities, or governments. They are a useful tool for bridging gaps in knowledge for adopting new technologies or providing subject-matter expertise for resource-constrained organizations.
- **The Foundation for Energy Security and Innovation (FESI)** is still nascent and better described as a partnership opportunity than a funding mechanism, but is likely best used for public-private funding opportunities and cross-cutting work where DOE struggles to make progress as the direct counterparty, for example convening, pre-competitive data and standards, market-enabling infrastructure, or crowding in private and philanthropic capital.

This is not comprehensive of all mechanisms and tools at DOE's disposal. A more in-depth look at these funding tools can be found at Innovation Waypoints.[17]

CASE STUDY

OT Potential and Pitfalls

OT is gaining prominence as a "silver bullet" for DOE's challenges. As a part of a revamp of mechanisms, a new OT guide[18] was developed by senior officials from across the DOE as a potential mechanism to complement its existing portfolio.

OT is not a fixed template; it is a blank page built up from requirements, not a standard agreement with clauses crossed out. The appeal is flexibility. The reality is that flexibility does not create speed by itself.[19] Even if a team starts from a standard agreement and strikes only a few provisions, that signals an OT and invites the counterparty to reopen additional terms. Once the door is open, negotiations can expand and stretch for months. Every material term and condition still has to be designed and negotiated, and only a small number of contracting officers and attorneys have the certifications, bandwidth, and precedent library to craft robust OT agreements from first principles. DOE also tends to avoid unfamiliar approaches that introduce avoidable risk. A broad shift toward OT would strain that small cadre, yield uneven practices across offices, and add schedule uncertainty for applicants.

For demonstration-scale projects, the use of OT agreements has begun to be more widely tested and used at DOE, with the Gen III+ SMR funding opportunity at the end of the Biden Administration explicitly using OTs,[20] and the Trump Administration indicating the use of OTs for one of its only demonstration program funding announcements in 2025.[21] The more DOE can test, use, and become familiar with the application of OT, the more likely it will be able to be used as a flexible, useful tool to achieve objectives that would be constrained by the cooperative agreement model.

Recommendation 2.2: Establish a Program Design Center that reports directly to the Secretary.

Even when the funding mechanisms are known, there is not always a reliable place to get timely guidance on when each contracting mechanism should be used and for what purposes. What is missing is a dedicated internal venue where teams can bring ideas early and get clear, authoritative guidance on what will work and how.

To support a more integrated approach for applying lessons learned, speeding implementation time, and piloting new ideas and concepts, DOE should establish a Program Design Center reporting directly to the Secretary. This small, permanent team led by career staff would offer a standing venue where other teams can bring a sketch of a proposed program design and corresponding funding mechanism and receive guidance on what is possible, what is not, and what might work instead. This Center could also serve as a permanent repository of program design training modules, resources, and supportive staff to share lessons learned and expertise across the Department. A clear second-opinion pathway would help teams that are interested in setting up innovative programs move past quick denials from overextended management or procurement staff who don't have the capacity to help troubleshoot a new idea. The Center would need to be sufficiently staffed to ensure it does not end up as a bottleneck for offices trying to use innovative funding and program options. Assignments for Center staff should be time-bound and off-cycle from administration timelines to bridge transition periods and maintain institutional knowledge.

Recommendation 2.3: Create a tiered approval approach.

Over the last 20 years, each administration has instituted new approval processes that have prolonged the length of time from drafting a solicitation through execution of awards. During the IRA/IIJA surge, DOE built a cross-office review model suited to billion-dollar initiatives, with many checkpoints and broad "big tent" participation to manage risk. Over time, that model was applied to nearly everything, including small, time-sensitive funding programs, which added months of delay with little additional value and strained limited staff. This led to delays across the innovation funding portfolio, losing time that could have either been provided to applicants for a longer application period or for departmental staff executing awards in a timelier fashion. Perhaps counterintuitively, speed for political or administration priorities can be accelerated by delegating authority, rather than concentrating it at high-level chokepoints.

DOE should create three approval lanes based on funding level: small, medium, and large with decisions delegated to the right level (for example, small to an office director, medium to an assistant secretary, large to the undersecretary or equivalent). The lanes can be set with a single departmental memo that directs each program to name one selection official with delegated authority to make decisions without additional internal escalations. Higher-level offices remain advisory unless scope materially changes. The aim is to preserve integrity and transparency while building a culture that combines collaboration with decisive action by the accountable leader.

Modernize Legal and Contracting Support for Innovation

The Department's ambition to move technologies rapidly from laboratory to market ultimately hinges on its legal and contracting capacity. General Counsel (GC) offices interpret statute, contracting officers (CO) obligate funds and determine how much financial risk DOE is willing to carry. Over the past decade, Congress has expanded DOE's authorities and quintupled its discretionary funds, yet staffing levels, career incentives, and cultural norms inside these critical gatekeeper functions have scarcely changed. This section dives into how to modernize DOE's legal and contracting apparatus to embrace innovation, both in how the Department operates and in the technology it supports.

Recommendation 3.1: Appoint an Innovation Legal Advisor to diagnose and solve legal and contractual barriers to DOE's innovation and commercialization mission.

Even when everyone is working collaboratively, DOE faces a structural mismatch: program offices are under pressure to disburse billions quickly, while GC and contracting teams are risk-averse and want to maintain procedural certainty. This challenge has been exacerbated by the loss of legal staff at DOE over the past year,[22] which the Administration has since tried to ameliorate by bringing on new lawyers on short-term contracts.[23]

DOE should formalize a role for a senior, respected GC official, with staff support, empowered to act as a facilitator for innovative processes, not just a reviewer. Their mandate is to understand the "why" behind an unconventional request from a program office and proactively explore legal and contractual options. This transforms the legal review from a simple "go/no-go" gate into a collaborative problem-solving exercise.

Recommendation 3.2: Create a Legal & Contracting Innovation Team.

DOE's history is filled with program design pilot success stories that failed to persist past the team that shepherded them through the system. Without an institutional bridge to capture and translate the lessons from these hard-won victories, the next program manager must fight the exact same battles from scratch. The institutional memory resides with individuals, not within the institution itself.

Complementing the Program Design Center in Recommendation 2.2, DOE should create a dedicated Innovation Procurement Team within the acquisition and legal functions, under the Office of Management. This team would be empowered to write the first-of-a-kind agreement for a new program in collaboration with the teams who need them, shepherd it through all approvals, and then immediately distill the resulting template for department-wide reuse. The Innovation Procurement Team would own a living template library on Powerpedia, DOE's internal knowledge platform, and host quarterly lessons-learned exchanges with other agencies working on innovative program design, ensuring DOE is adopting best practices, not constantly reinventing them.[24]

The team would be led by, or at a minimum include the aforementioned Innovation Legal Advisor. This team could also help creatively address bottlenecks caused by compliance obligations such as labor and domestic sourcing requirements in certain guiding statutes for DOE programs.

Recommendation 3.3: Create a mobile cohort of specialized contracting officers.

DOE's contracting apparatus is not a single system but a loose federation of field offices (National Energy Technology Laboratory, Golden Field Office, Chicago Field Office, etc.), each with its own bespoke templates, approval pathways, and unwritten norms. This is a legacy of historical appropriations, not deliberate design. The result is significant diversity across programs. A 2024 GAO review found that similar funding opportunities could vary by up to 40 percent in negotiation cycle time depending solely on which field office processed the award.[25] Differing processes also impedes cross-office collaboration when each uses a different field office for contracting.

In addition, there is a significant shortage of contracting officers with specialized expertise for innovative funding mechanisms. Contracting officers must go through a process to be "warranted" by the U.S. government to be able to negotiate and enter into contracts on behalf of the federal government.[26] DOE today fields roughly 420 warranted contracting officers; fewer than 20 hold the advanced warrants needed for instruments like OTAs.

DOE should establish an agency-wide rotation program for Level III COs (the designation for COs with the highest level of advanced warrants), funding six-month details from a central administrative account. This cohort can be deployed to smooth workload spikes during year-end surges and, more importantly, propagate best practices and standardized templates horizontally across the field offices.

Recommendation 3.4: Reform contracting and legal career ladders and incentives.

The most significant barrier to retaining top legal and contracting talent is the structural cap on career progression. The vast majority of CO positions are capped at the GS-13 level, two levels lower than the most senior career service positions. This means an officer who earns an advanced certification—such as an unlimited warrant, the most valuable credential in their field—does not receive commensurate professional reward for that expertise.

DOE should create a clear career path by establishing GS-14 and GS-15 billets that are explicitly tied to advanced certifications, such as holding a Level III unlimited warrant, and a documented record of executing complex, innovative awards. This makes expertise a direct driver of advancement and an incentive for retention. Additionally, DOE should evaluate using Direct Hire Authority for contracting and legal staff. IIJA expanded DOE's capability to use Direct Hire Authority to hire new personnel beyond its existing authority for engineers and physical scientists. This allowed new people to be brought in who had experience in market analysis, financing, and more, and should be kept and expanded. Notably, IIJA's Direct Hire Authority expires in September 2027. This type of authority reduces the hiring timeline and can make it more appealing for people to transition into the government from other legal or contracting careers.

Align Programs to Industry and Innovator Needs

Researchers, innovators, and developers are the ones who ultimately discover, build, and scale new technologies. DOE's programs are only as effective as their ability to attract and retain the best of these partners. That requires meeting industry where it is: designing programs that are accessible, responsive to market realities, and worthy of the time and capital that non-federal actors must commit to engage. The recommendations in this section focus on aligning DOE's programs to the needs of the innovators and industry partners who are doing the work of developing and scaling new energy technologies.

Recommendation 4.1: Create a "front door" of DOE to prioritize accessibility and expand the applicant pool.

The entry point for most interested innovators to access funding is through a time-consuming, complex application process in response to various funding announcements from disparate DOE offices. Announcements are often hundreds of pages long with numerous requirements. This application complexity favors well-capitalized incumbents who can hire consultants and professional grant-seekers over new, resource-constrained innovators who may have more groundbreaking solutions but lack the time and capital to compete. This is particularly harmful to energy innovation because those innovators and start-ups with little DOE experience are often at the forefront of the technological advances we need to develop as a nation.

DOE should develop an application management system which helps connect funding opportunities with potential applicants and increase the opportunity for high impact awards. Such a system would establish common-sense tools and programs such as:

- **A Unified Portal:** Create a single, modern, and easily navigable web portal that serves as the central repository for all DOE funding opportunities, eliminating the need for applicants to search across dozens of different office websites.
- **Customizable Notifications:** Allow potential applicants to create a profile and subscribe to notifications based on specific, user-defined criteria (e.g., technology area, TRL, award size), ensuring they never miss a relevant opportunity.
- **Funded Applicant Support:** Provide funding for "navigators" whose sole job is to provide free, general application support and guidance to anyone interested in applying, leveling the playing field for newcomers.[27]

CASE STUDY

The Five Applicant Schemas

An internal analysis of DOE's applicant pool reveals five distinct archetypes:

1. **The Well-Resourced:** Large entities that hire specialized consulting firms to craft perfect, winning applications, raising the question of whether the award is subsidizing work they already planned to do.
2. **The Professional Applicant:** Organizations whose business model is to contort their work to fit federal funding calls. Their goal is sustaining their research operations through grants, not necessarily commercialization.
3. **The Determined Newcomer:** Innovators who are desperate enough to endure the grueling, self-taught process of applying, but whose applications often lack the professional polish to win grant funds.
4. **The Unaware Applicant:** The perfect candidate who would greatly benefit from funding but is simply unaware the opportunity exists due to DOE's poor outreach and scattered announcements.
5. **The Deterred Applicant:** The potentially largest and most concerning group—innovators with ideal solutions who look at the system and choose not to apply, because they lack the time, staff, or cash flow to risk the effort.

Recommendation 4.2: Design programs with first-time applicants in mind.[28]

Revamping DOE program design offers an opportunity to better engage with potential and future applicants. The fix is not lower standards. It requires designing with consideration for applicants, who are essential partners in delivering DOE's mission. The goal should not be to deliver the perfect program structure, but to develop one which is user- and first-time applicant-friendly. Ultimately, the impact of DOE's programs is determined by who applies and who stays through selection and negotiation. This is particularly important for innovators on the frontlines of driving technologies forward.

Options to improve the design of the solicitation and selection process to center the experience of first-time applicants include:

- **Universal Concept Papers:** Institute a standardized, lightweight concept paper stage (e.g., five pages) for all major funding opportunities. This provides a low-effort entry point for applicants to receive a quick "red light/green light" response on whether their idea is worth pursuing into a full application.[29]
- **Restricted Eligibility Programs:** Require every major office to run at least one funding opportunity per year where eligibility is restricted to first-time DOE applicants, creating a dedicated on-ramp for new innovators.
- **Recurring Opportunities:** Establish a core set of general recurring opportunities with annual or otherwise predictable cycles.
- **First-Time Applicant Tracking:** To counteract the natural incentive for program managers to select familiar, proven recipients, DOE should score all offices on their ability to attract and fund first-time applicants.
- **Public Successful Pipeline Pathways Report:** Publish an annual "Pipeline Pathways Report" that retrospectively analyzes the pathways of entities receiving multiple DOE awards for a given technology. This analysis would identify: a) which funding programs serve as the most effective entry points for new applicants, b) the average time between a recipient's first and subsequent awards, and c) the sequence of offices involved. The goal is to provide a data-driven understanding of successful applicant journeys.

Recommendation 4.3: Leverage intentional external engagement to adapt program design to industry needs, build trust, and attract high-quality applications.

To build better partnerships with the private sector, future programs and opportunities must be designed to work closely with industry and innovators, attract high quality applicants, and thoughtfully open lines of engagement with the private sector. In adherence to procedural and administrative constraints such as the Paperwork Reduction Act and to avoid the perception of unfairness in review and selection, DOE has historically refrained from robust industry engagement. In practice, this often leads to a lack of willingness to engage at all with the private sector to source information and solutions that will be most impactful.

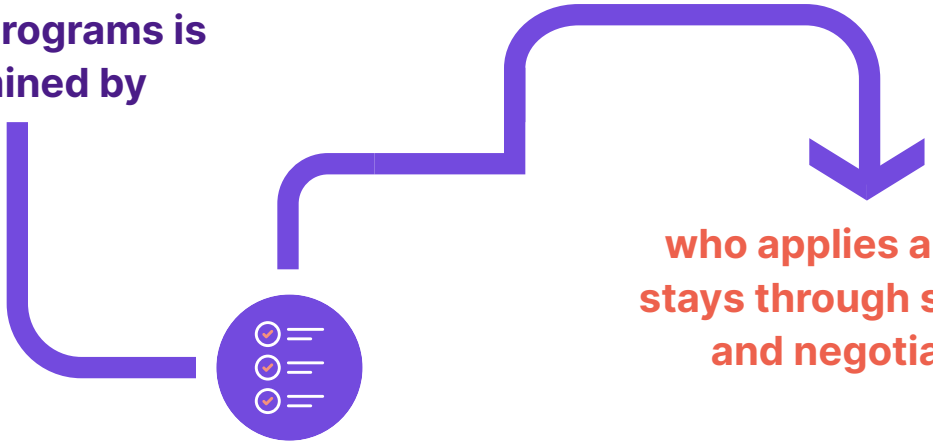
DOE has many tools at its disposal to thoughtfully engage with external partners to guide the design of programs and funding opportunities to be most suited to private sector needs. These include convening roundtables, issuing RFIs, and meeting with trade associations. DOE should leverage these tools and then act on the information learned through them—if learnings are not incorporated into improved program design, industry will remain hesitant to engage and share their input.

CASE STUDY

Industrial Demonstrations Program

The Industrial Demonstrations Program (IDP) was able to overcome some of the systemic issues of private sector skepticism and barriers to applicants through a very intentional external engagement process which led to the program being oversubscribed with high quality and innovative applications. This process included taking about 4-6 months to solicit and process RFI responses, convening industry roundtables, and meeting with trade associations. As a result, the total amount of funding requested in concept papers was more than $60 billion, ten times the program size of ~$6 billion, with a corresponding proposed ~$100 billion in cost share from the private sector.[30]

Ultimately, the impact of DOE's programs is determined by



who applies and who stays through selection and negotiation.

Recommendation 4.4: Reform merit review and negotiation processes for faster execution, lower burden, and increased transparency.

After a rigorous and often burdensome application process, applicants then wait for DOE to go through a time-intensive merit review process for selection, which is then followed by a prolonged period of negotiation before reaching final award. These timelines are long, uncertain, and rarely aligned with private sector timelines.

DOE should reform the merit review process to better align with private sector timelines and create more transparency around anticipated final agreement structures and terms, targeting 3-6 months for merit review compared to current 9-month timelines. These processes could be accelerated by piloting and using AI tools to streamline the review process, help manage documents and data, and compile reviews from various reviewers.

Additionally, DOE should streamline the negotiation process for faster and more predictable execution, limiting initial negotiations to top-line project objectives and early budget period work, and finalizing later-stage project negotiations in parallel with execution of initial milestones. To facilitate negotiations, DOE should establish simple templates with pre-negotiated terms according to project stage (i.e., pre-FEED, FEED, pilot, demo[31]) with standard tasks/deliverables, data rights and protection, property and equipment disposition rights/standards, program income, finance and risk (EPC terms, O&M budgets, availability guarantees, offtake pricing), and permitting plans (NEPA strategy) negotiated internally ahead of time and clearly communicated to applicants early on.

Recommendation 4.5: Expand access to national laboratory resources.

The 17 national laboratories, often referred to as the "crown jewels" of the energy R&D enterprise, are leaders in advancing cutting edge research for a variety of basic science and applied energy challenges. They operate user facilities, host supercomputers, and provide analysis and thought leadership on a variety of crucial energy system topics. Historically, the ease of partnering with the national labs on technology commercialization has been inconsistent.[32] Efforts in recent years to improve national lab partnership mechanisms, including streamlined Cooperative Research and Development Agreement (CRADAs, the main formal agreement pathway with national labs), lab-embedded entrepreneurship programs, and industry consortia have been implemented to varying success.[33]

DOE should systematically expand programs that make national laboratory resources available to private companies and innovators facing specific technical challenges, including technology prototype test facilities, voucher programs for lab access, and entrepreneurial programs designed to incubate new technologies. DOE's Lab Partnering Service and efforts under the Genesis Mission to build partnerships between national labs and the private sector to accelerate AI deployment and use are two current initiatives from DOE in this area that show promise.[34,35]

Enhance Cross-Program Collaboration

DOE's most pressing energy challenges cut across office boundaries, yet the department's structure too often rewards siloed execution over coordinated action. Misaligned incentives, fragmented systems, and unclear decision-making authority make sustained collaboration difficult to achieve in practice. The recommendations in this section address those structural barriers—targeting the incentive, governance, and budget mechanics that determine whether cross-program work succeeds or stalls.

Recommendation 5.1: Align individual and office-level incentives with collaborative outcomes.

The Department of Energy is not a monolith; it is a confederation of semi-independent programmatic fiefdoms. This structure, established by Congress, organizes the Department around discrete missions—basic science, national security, and specific energy resources—each with its own line-item appropriation and external constituencies. This internal fragmentation is a source of predictable challenges: duplicative funding solicitations, promising technologies abandoned at hand-off points, and frustrated applicants who must decode a complex organizational chart just to find the right entry point.

There are multiple mechanical and financial barriers to collaboration but one practical reform is to build incentives for cross-office coordination into performance plans. One way to do this is to mandate that a key element of every Senior Executive Service (SES) and general schedule (i.e. GS-15) manager's performance plan be tied to creating formalized programmatic pathways that extend beyond their office. This includes developing transition plans for handing off maturing projects to downstream offices and coordinating with upstream programs to receive new technologies. An essential component of this is building in platforms for information sharing between offices on specific projects and technologies.

Recommendation 5.2: Improve departmental IT and data standards to facilitate information sharing and AI readiness.

Each DOE office not only has their own mission and budget, but their own system for tracking data, coordinating reviews, and managing projects. In some cases, different parts of a single office may have distinct processes. Maintaining duplicative yet distinct systems may at times be warranted for privacy, IP, and controlled information reasons. Yet in all cases, a cohesive approach to data governance is essential. DOE should implement IT and data standards across the department to improve interoperability, efficiency, and transparency.

The White House Council on Environmental Quality (CEQ) has undertaken a similar effort in order to streamline interagency processes for NEPA and permitting, laying out a common vocabulary for harmonization rather than a specific software system.[36] While a significant undertaking, this work is crucial for putting into practice other components of this Action Plan, namely Recommendations 1.3, 4.2 and 4.4, which focus on implementing common

frameworks across offices, improving applicant tracking across the department, and streamlining review processes. As AI tools become more widespread, putting in the work to improve data governance across the department will only unlock further efficiencies in the future.

Recommendation 5.3: Establish clear, decisive governance structures for cross-cutting initiatives.

Collaborative projects at DOE are frequently launched with shared goals among multiple offices but with no single entity given clear ownership or final authority. These well-intentioned initiatives often begin with a burst of enthusiasm, convening high-level working groups to build consensus. This consensus-driven governance leads to offices demanding to be consulted—offering commentary as their primary contribution—while remaining unwilling to commit tangible resources like funding or staff, both of which they view as being in perpetual short supply. Without clear, top-down delegation of authority, this culture of review without commitment paralyzes progress.

CASE STUDY

Grid Modernization Funding

In a recent attempt to launch a joint water-and-grid resilience funding opportunity through the Grid Modernization Initiative, five separate office directors were required to provide concurrence, an official process for multi-step sign-off from multiple offices. Each round of edits added pages of unique and sometimes conflicting evaluation criteria. The funding announcement ballooned from 70 to nearly 150 pages and ultimately failed to launch before the fiscal year closed because no single official owned the deadline or had the authority to reject cumbersome additions.

Recommendations include:

- **Decisive Upfront Governance:** To enable multi-office programs, DOE leadership must make firm decisions in advance on the structure of any joint initiative. This means defining budget contributions from each participating office and assigning authority before a program design effort launches. These foundational decisions cannot be delegated to a working group, which would only replicate existing turf battles. Overcoming the expected institutional resistance to this top-down approach will require sustained executive focus.
- **Appoint a Single Selection Official:** The primary mechanism for establishing clear authority is a formal delegation memorandum from the Secretary or a relevant Under Secretary. For any joint program, this memo must explicitly name one Selection Official (SO) with final authority over the initiative. Consulting offices provide essential input but cannot veto the SO's final decisions. The funds directed to this crosscut will also be managed specifically by the SO and their staff.
- **Charter with Consultation Clauses:** The delegation memo must also charter the effort with clear rules of engagement. This includes establishing mandatory checkpoints and cutoffs for other offices to provide expert advice—for instance, at the scoping, merit review, and selection stages. The charter should also provide a formal channel for an office to register a significant objection with senior leadership while making it clear this does not constitute a veto.
- **Time-Boxed Reviews:** To ensure consultation does not derail the timeline, the charter must be backed by a department-wide rule establishing a default 7 or 14-day limit for inter-office comment and review cycles. The rule should specify that silence will be considered concurrence, empowering the SO to proceed without indefinite delays.

Recommendation 5.4: Create fenced cross-cut funds for joint initiatives.

At DOE, the financial mechanics of collaboration are defined by rigidity and uncertainty. Strict "color of money" rules prevent the easy pooling of funds between different appropriations, while the annual budget cycle makes long-term planning exceptionally difficult. The Department lacks a formal mechanism to "fence off" funds for multi-year, cross-cutting initiatives, making it difficult for an office director or senior leader to make a reliable funding commitment to a partner office. Offices are primarily concerned with obligating funding from their own budget lines in order to justify continued funding for their primary mission space. As a result, ambitious joint programs are often the first to be sacrificed during the assembly of the annual President's Budget Request, which tends to come with quick turnaround times for offices, creating a powerful disincentive against any collaboration that requires shared financial risk.

To protect joint initiatives from annual budget uncertainty, DOE leadership, in coordination with Congress, should direct the Chief Financial Officer (CFO) to create an initiative-specific budget pool during the internal budget apportionment process that is managed by the aforementioned SO and their team. This would involve setting aside a pre-agreed portion from each participating office's budget and assigning it to a new, centralized control point managed by the appointed initiative lead and their team. This approach formally severs the funds from the individual offices' budgets, freeing directors from the responsibility of managing complex inter-office financial transfers.

Recommendation 5.5: Implement a simpler and uniform approach for SBIR and TCF.

The two mandatory, department-wide funding pools—the Small Business Innovation Research (SBIR) program and the Technology Commercialization Fund (TCF)—are failing to live up to their full potential due to definitional ambiguity and resourcing constraints. SBIR has existed since 1982 and is a cross-government program designed to support small businesses by providing competitive funding for innovation and technology development. Coordinated through the Small Business Administration, each participating agency (including DOE) is in charge of implementing the program within their agency. TCF was established in the Energy Policy Act of 2005 and designates 0.9% of DOE appropriations to be used for cost-sharing with private sector partners "to promote promising energy technologies for commercial purposes."

While both are mandated by law as a percentage-based contribution for funds related to research, development, demonstration, and commercial application, the lack of a clear statutory definition for these terms has created the loopholes that allow for widespread inconsistencies. This ambiguity enables offices to maneuver to minimize their contributions. For example, the Office of Science has argued its "basic research" funding should apply to SBIR's but not to TCF's definition of the same word: "research." Similarly, ARPA-E received a waiver from TCF by claiming its core mission already serves the fund's purpose, contrary to the intent of the law. This pattern of strategically avoiding mandatory contributions incentivizes offices to classify their activities to reduce their assessed amount—for example, labeling work "deployment" instead of "commercial application."

As one of the world's largest seed funds, with nearly $300 million annually at DOE alone, SBIR should be a flagship of public-private partnership. Instead, as documented by the National Academies,[37] among others, it has been hollowed out by a system that elevates bureaucratic procedure over entrepreneurial success, crippling a vital engine for the nation's energy future.[38]

The CFO should be directed to create a simple formula to assess the legally mandated percentage against the total relevant budget of every applicable DOE program office at the highest control point, reducing administrative burden and eliminating loopholes. The SBIR and TCF funds should be managed out of a single office, like the Office of Technology Commercialization.[39] This ensures uniform application, fundamentally shifting the conversation from one of avoidance to one of strategic engagement, where offices are incentivized to maximize the value of these cross-cutting funds.

Conclusion

The United States has the talent, the capital, and the technological ambition to lead the next era of energy innovation. For too long, DOE has been asked to do more with tools built for a different era: funding mechanisms designed for slower-moving projects, legal and contracting functions that treat innovation as a liability, and siloed offices with no structural incentive to work together. The gap between what DOE is tasked to do and what it actually delivers is not only a funding problem.

The reforms in this Action Plan are not radical. They do not necessarily require new legislation, new offices, or new authorities. They require leadership and a willingness to make hard institutional choices—to delegate real authority, to reward collaboration, to design programs around the needs of innovators rather than historical bureaucratic processes. Done right, these changes would send a clear signal to the entrepreneurs, researchers, and investors who will drive the next generation of technological breakthroughs: the federal government is open for business, and it is ready to deliver.

Endnotes

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Re-Energizing America

clean tomorrow