

A large, billowing mushroom cloud from a nuclear explosion, with a bright yellow and orange core and a dark, reddish-brown top, set against a hazy, greenish-grey sky. The cloud is positioned on the right side of the page.

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REIMAGINING
THE
NATIONAL
LABS
IN THE
21ST
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INNOVATION
ECONOMY

NONPARTISAN POLICY REFORMS FROM

The Information Technology and Innovation Foundation

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The Heritage Foundation

TURNING THE PAGE

REIMAGINING THE NATIONAL LABS IN THE 21ST CENTURY INNOVATION ECONOMY

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Center for American Progress



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SUMMARY OF POLICY REFORMS TO STRENGTHEN THE NATIONAL LABS

For the past 50 years, the DOE labs have served the public well and have been valuable drivers of new technology and industries. But as the nature of technology and the needs of the nation have evolved, the lab management and stewardship model has failed to keep pace. This report proposes a series of pragmatic nonpartisan policy reforms needed to ensure the labs remain effective and continue to deliver national benefits to the taxpayers. The working group's policy reforms described herein have three main goals:

- Increasing the effectiveness of each dollar spent on research to get the greatest benefit to taxpayers
- Ensuring that labs are well positioned to leverage private-sector investment in serving the national interest
- Making lab research more nimble, relevant, and accessible to public and private interests

Using these basic principles, the following is a summary of the proposed reforms to boost innovation, increase economic benefits, and rationalize the lab system.

REFORMS REQUIRING CONGRESSIONAL ACTION

THE FOLLOWING REFORMS REQUIRE CONGRESSIONAL LEGISLATION

Allow labs to use flexible pricing for user facilities and special capabilities. Congress should allow the labs to charge a market rate for all proprietary research, rather than only being allowed to charge just full-cost recovery. Additional fees raised in this way could then be directed toward incentives for the management contractor, additional lab overhead expenses, and/or the taxpayer as necessary per the management contracts. (see page 51)

Merge the existing Offices of Science, Energy Efficiency and Renewable Energy, Fossil Energy, and Nuclear into a new Office of Science and Technology. The new Office of Science and Technology would be managed by a single under secretary of science and

technology with both budgeting and lab-stewardship authority. The new under secretary would fund and steward all of the DOE labs except for the four that are currently managed by the under secretary for nuclear security. (see page 37)

Coordinate the research functions of the Office of Science and those of the under secretary of energy under the new Office of Science and Technology. Congress should direct the secretary of energy to create new, broader program offices under the Office of Science and Technology for better coordination of the entire spectrum of publicly funded research. Congress should solicit comments from the research, industry, and academic communities to ensure that the new programs reflect the multidisciplinary nature of science and technology today and facilitate the integration between research and the marketplace. (see page 38)

A note on NNSA and EM labs. This working group recognizes the unique national-security circumstances involving the NNSA and EM labs and Congress's special interest in their management. Nearly all of the reforms outlined in this report can and should be applied to the NNSA labs. Given the nuances of nuclear security and the unique history of the semi-autonomous National Nuclear Security Administration, however, determining how the NNSA labs are co-managed with the rest of the labs under a new under secretary of science and technology was determined to be beyond the scope of this report. (see page 40)

Remove top-down overhead accounting rules. Congress should instruct DOE to remove prescriptive overhead accounting rules and instead provide broad categories of funding that the labs can spend as necessary. Instead of prescribing how each dollar is spent, congressional oversight should focus on the labs' ability to meet the research outcomes as described in their governing contracts. Congress should remove the cap on LDRD funds and provide a description of technology transfer that allows labs to spend overhead funds on early-stage demonstrations that either remove technology barriers limiting private-sector interest or repurpose original research for new problems. Specific details on these funding categories should be left to DOE-lab negotiations as part of the M&O contract. (see page 26)

REFORMS REQUIRING DOE, OMB, OR ADMINISTRATION ACTION

THE FOLLOWING REFORMS CAN BE IMPLEMENTED THROUGH DEPARTMENT OF ENERGY ACTION. IN ABSENCE OF DOE ACTION, THE FOLLOWING CAN ALSO BE IMPLEMENTED BY EITHER THE ADMINISTRATION OR CONGRESSIONAL ACTION AS WELL

Expand ACT agreements. Move ACT from a pilot program to one that is usable by all labs and expand the capabilities of ACT agreements to allow for greater flexibility and use with any kind of partner, regardless of whether the partnering entity receives federal funding. (see page 50)

Create a high-level task force for lab effectiveness and accountability. The Office of Science and Technology Policy should create a high-level task force with representatives from all key stakeholders in the lab system, stewarding agencies, and industry leaders who partner with the labs. The task force should assess two issues:

1. **Lab oversight to reduce red tape and speed up bureaucratic processes.** In particular, the task force would assess how to devolve greater authority to the labs themselves for self-management, reducing the need for direct DOE involvement in many day-to-day decisions, including execution of CRADAs and other partnership agreements. (see page 24)
2. **Developing better technology-transfer metrics to be implemented in an expanded PEMP process** that explicitly includes technology-to-market evaluation as a key metric for M&O contractor success, subject to each M&O contract. Both sets of recommendations could be implemented by DOE in a reasonable amount of time either by executive action or congressional mandate. Congress should implement this recommendation should OSTP fail to do so. (see page 53)

Transition to a performance-based contractor accountability model. Day-to-day management of lab operations should be managed by contractors per the M&O contract and evaluated annually via an expanded and unified review process for all the labs based on the Office of Science's PEMP process. (see page 23)

Include site-office oversight responsibilities in the M&O contract. As part of the new contractor-accountability model, site offices should be negotiated as part of the agreement between

the contractor and DOE. If it is agreed that decreased or no site-office presence is needed, then DOE must act accordingly. (see page 25)

Allow labs autonomy in nonfederal funding partnership agreements. The secretary should grant labs the authority to implement a pilot program to allow lab managers to agree to cooperative efforts with third parties using preapproved contractual frameworks for research absent DOE preapproval under some circumstances. Over time, DOE approval can be scaled back under a wider variety of circumstances as contractors show themselves able to effectively manage risk for their own labs. (see page 50)

Add weight to technology transfer in the expanded PEMP process. Create a new category for the expanded, system-wide PEMP process called “Technology Impact,” which would evaluate labs on the market impact of technology. The exact weight of this category would vary from lab to lab, to be negotiated upfront in the M&O contract depending on the degree of market applicability of each lab’s research portfolio. Explicit details for this new category would be informed by task force recommendations. (see page 53)

Execute consistent guidelines on conflicts of interest. The secretary of energy should issue new, consistent guidance to the labs encouraging research and management teams to partner with companies and entrepreneurs so that each lab doesn’t interpret conflict-of-interest laws differently and each lab provides consistent entrepreneurial leave and exchange opportunities for researchers. (see page 53)