

## President's FY18 Budget Request

On May 23, President Trump released his Administration's proposed Fiscal Year 2018 budget. It proposes drastic cuts to many Federal R&D programs, and the elimination of several technology initiatives. The policies articulated in the budget signal a pull back in the Federal role in technology development, a role the Obama Administration had significantly expanded downstream in the innovation process, and closer to the marketplace.

### Trump Budget Proposes Drastic Cuts to Many Federal R&D Programs

Overall, the President's FY 2018 budget requests \$151.2 billion for Federal R&D, \$5.3 billion below the FY 2017 Omnibus appropriations. Defense R&D would see nearly an \$8.8 billion--or 10%--increase, while non-defense R&D would drop \$14 billion or 19.4%.

**USDA:** The President's budget requests \$916 million for R&D at the Agricultural Research Service, \$377 million or 29% less than the FY 2017 Omnibus appropriation. The budget proposes to terminate lower-priority and extramural research projects, and to close 17 laboratories, locations or worksites. Also, the budget proposes \$349 million for the Agriculture and Food Research Initiative, \$26 million less than the Omnibus. The Rural Energy for America Program retains funds for loans and grants, based on mandatory funding included in the last Farm Bill.

**Department of Commerce:** The budget proposes eliminating Federal funding for the Hollings Manufacturing Extension Partnership, and eliminating the Economic Development Administration. The budget includes a \$15 million request for the Manufacturing USA program (National Network of Manufacturing Innovation Institutes). Of that funding, \$10 million is to maintain support for the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL), and \$5 million for coordination of the network of manufacturing institutes (including those funded by other agencies, several of which are targeted for elimination in the

Department of Energy budget). NIST intends to fund NIIMBL at the planned level of \$70 million for the five-year start-up period.

**Department of Energy:** The President's budget request cuts funding for the Office of Energy Efficiency and Renewable Energy by more than two-thirds (-69.6%), scaling back programming in all areas of clean energy and energy efficiency R&D, and shifting the remaining support to earlier stage R&D, and away from later-stage development and deployment activities. To align with reductions in technology program budgets, EERE's funded Full-Time Equivalents (FTEs) will be reduced by approximately 30% from the FY 2016 level.

Highlights: Department of Energy Appropriations (millions)				
Office	FY 2016 Enacted	FY 2017 Omnibus	FY 2018 Request	FY 2018 vs. FY 2016 (% change)
Office of Energy Efficiency and Renewable Energy	2,069	2,090	636	-69.6%
• Vehicle Technologies	310	307	82	-73.3%
• Bioenergy Technologies	225	205	57	-72.4%
• Hydrogen/Fuel Cells	101	101	45	-55.4%
• Solar	242	208	70	-66.4%
• Wind	95	90	32	-64.8%
• Water Power	70	84	20	-75.7%
• Geothermal	71	70	13	-82.0%
• Advanced Manufacturing	229	258	82	-68.2%
• Building Technologies	201	199	68	-66.1%
Office of Electricity Delivery and Energy Reliability	206	230	120	-47.8%
Office of Science	5,347	5,392	4,473	-17.1%
ARPA-E	291	306	20	-93.5%



The \$20 million proposed for ARPA-E is for managing existing projects and closing the agency, with shut down completed in FY 2019. In addition, the budget proposes eliminating the Title 17-Innovative Technology Loan Guarantee Program and the Advanced Technology Vehicles Manufacturing Loan Program. No funds are requested for the Critical Materials Institute or the Clean Water Hub.

In a blow to the expanding Manufacturing USA network of Manufacturing Innovation Institutes, no funds are requested for the five Clean Energy Manufacturing Innovation Institutes in the network. Balances from prior year appropriations are to be used to wind-down and terminate the existing institutes. The budget states that the focus of these institutes on near-term, demonstration and deployment-type activities is not aligned with the EERE Advanced Manufacturing Office's (AMO) planned shift in emphasis to early-stage research. Funding for the Manufacturing Demonstration Facility (MDF) and Carbon Fiber Test Facility would support the highest priority projects focused on early-stage R&D. Of the current portfolio of approximately 2,500 multi-year (3-5 year) projects funded by AMO, at least two-thirds will remain active in 2018.

The FY 2018 budget includes \$27.5 million for 4-6 advanced manufacturing R&D consortia. Of this funding, \$16.5 million will be used to establish early stage R&D consortia at National Laboratories and universities in the priority areas of:

- rare-earth materials
- new approaches to sensors, modeling, communications, security and controls in manufacturing
- next generation materials, structures and processes for chemical processes;
- discovery of new composite materials and structures; semiconductor (power and nanoscale) manufacturing materials and processes
- clean water in manufacturing; and new approaches to cost-effective use of materials resources in manufacturing.

Generally, these are the topics of focus of the current Manufacturing Innovation Institutes that are proposed for elimination. Projects will be screened to ensure that individual industry actors do not have the technical capability to undertake the research effort absent collaboration. \$11 million would go for early-stage R&D activities at national lab-based manufacturing demonstration facilities, particularly in areas of additive manufacturing and carbon fiber materials research related to energy.

The Office of Electricity Delivery and Energy Reliability takes a 47.8% cut. The Office of Science takes a 17% percent cut, and no funding is requested for two Energy Innovation Hubs (Batteries and Energy Storage and Fuels from Sunlight).

**Department of Defense:** The President's budget proposes \$83.3 billion for DOD RDT&E, \$9.6 billion or 13.1% more than the Omnibus appropriation for 2017. Within RDT&E, the budget proposes \$13.2 billion for defense science and technology 6.1 (basic research), 6.2 (applied research), and 6.3 advanced technology development). This is about \$755 million or 5.4% less than the FY 2017 Omnibus funding. The budget includes \$115 million for the eight DOD-led Manufacturing Innovation Institutes (Manufacturing USA/National Network for Manufacturing Innovation).

**National Institutes of Health:** The President's budget proposes \$26.9 billion for the National Institutes of Health, \$7.4 billion or 21.5% below the FY 2017 Omnibus. The budget includes \$496 million—the full funding legislatively authorized—for four priority Innovation Projects: the Precision Medicine Initiative's "All of US" Research program, the Beau Biden Cancer Moonshot, the BRAIN Initiative, and a new Regenerative Medicine project. At the proposed level of funding, NIH indicates that the number of competing research project awards will be reduced by 18.4% compared to FY 2017 (CR), and the grant success rate will drop from 17.1% to 13.7%. The budget includes an indirect cost rate for NIH grants that will be capped at 10% of total cost (currently NIH expends approximately 28% of its extramural budget on indirect costs); however, grantees will not have to provide substantial documentation to negotiate their indirect rate with government. Also, the budget proposes a major reorganization of NIH's Institutes and Centers.



**National Science Foundation:** The President's budget requests \$6.65 billion for NSF, a decrease of \$819 million or 11% compared to the Omnibus FY 2017 level. Of these funds, \$5.4 is requested for research and related activities, \$672 million less than the Omnibus. At this funding level, NSF indicates that it can support 8,000 research grant awards, 800 fewer than in FY 2016, and that the funding rate will drop from 21% to 19%.

The FY 2018 Budget Request is fundamentally at odds with the Administration's stated commitments to rebuild our infrastructure and invest in manufacturing in order to regain global economic leadership. Ultimately, however, while the President proposes, the Congress disposes. Many of the President's proposals are opposed by Congress on a bipartisan basis so it is likely that many of these cuts will not happen. There will be a hard round of lobbying and negotiations. And, there is strong push back on cuts to the research budget.

**Although the budget news indicates gray skies ahead, the Omnibus Appropriations Act may have signaled what we might see out of the Congress, as the FY 2017 funding reflected relatively good news.**

It is important to advocate now for your interests as program directions, funding, and regulation in the Trump Administration evolves, as subcabinet appointments take their places, and as the new Administration and Congress work together on the budget.



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