



InfoBrief

Federal Obligations for R&D Contracts Increase 1.8% in FY 2022; Obligations for R&D Grants Increase 2.7%

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In FY 2022, federal obligations for research and experimental development (R&D) totaled \$190.4 billion, an increase of 0.4% from \$189.6 billion in FY 2021 ([table 1](#)).¹ Federal agencies fund R&D through both intramural performers (the agencies themselves and their federally funded research and development centers) and extramural performers (businesses, higher education institutions, nonprofit institutions, state and local governments, and non-U.S. performers). In FY 2022, federal obligations for extramural performance of R&D totaled \$104.3 billion, an increase of 2.2% from \$102.0 billion in FY 2021. All data in this InfoBrief are presented in current dollars.

Table 1

Federal obligations for research and experimental development and for R&D plant, by type of performer and type of agreement: FYs 2021–22

(Millions of dollars)

Type of performer and type of agreement	2021	2022	% change FY 2021–22
Obligations for R&D and R&D plant	193,896	196,595	1.4
R&D	189,614	190,422	0.4
Performer			
Intramural ^a	87,617	86,161	-1.7
Extramural ^b	101,997	104,263	2.2
Contracts and other transactions	50,971	51,882	1.8
Grants and cooperative agreements	51,026	52,379	2.7
R&D plant	4,282	6,173	44.2
Performer			
Intramural ^a	2,902	4,533	56.2
Extramural ^b	1,379	1,640	18.9
Contracts and other transactions	824	1,015	23.2
Grants and cooperative agreements	556	626	12.5

^a Intramural includes federal agencies' activities and costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance and obligations to federally funded research and development centers.

^b Extramural includes business, higher education institutions, nonprofit institutions, state and local governments, and non-U.S. performers.

Note(s):

Because of rounding, detail may not add to total. Percentages are computed using actual dollars reported. FYs 2021 and 2022 data include obligations from supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

The Survey of Federal Funds for Research and Development (Federal Funds for R&D) presents federal obligations for extramural R&D and R&D plant by type of agreement, namely contracts and other transactions (contracts) and grants and cooperative agreements (grants).² In FY 2022, federal funding for extramural R&D totaled \$51.9 billion from contracts and totaled \$52.4 billion from grants. At the same time, federal obligations for extramural R&D plant totaled \$1.6 billion in FY 2022, with \$1.0 billion in the form of contracts and \$625.7 million in the form of grants.³

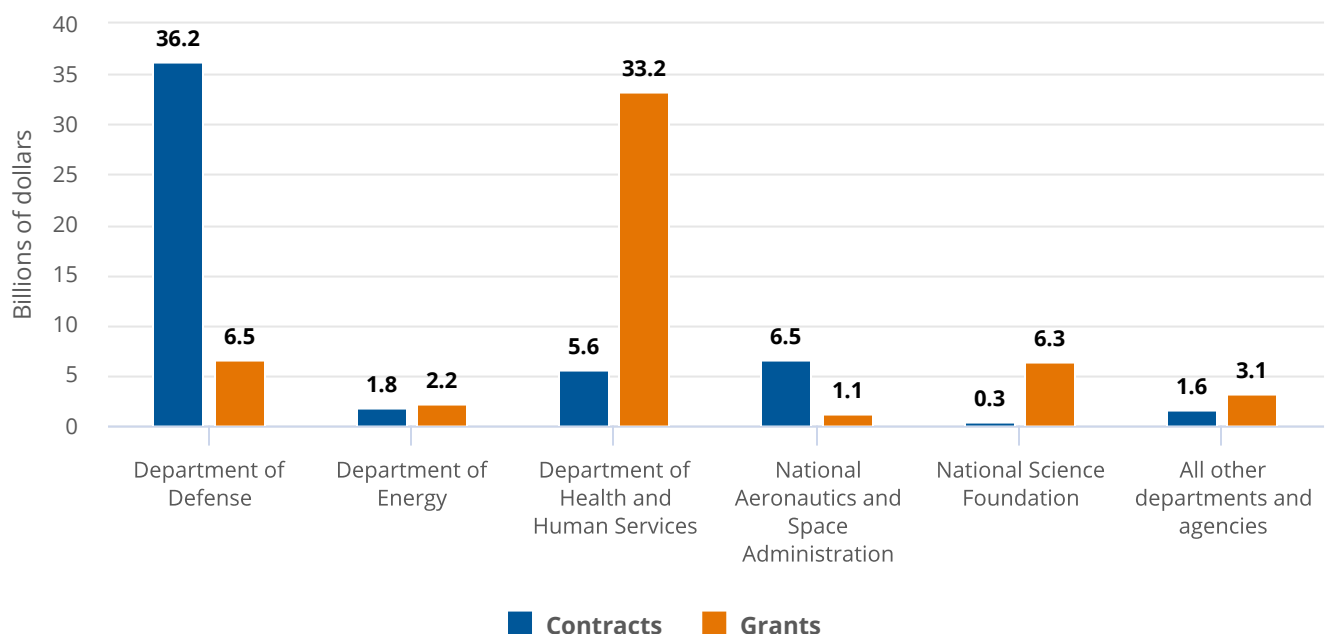
Federal agency funding of R&D and R&D plant by contract or grant are often based on agencies' missions, goals, and needs. Although federal R&D contracts result in government ownership of the R&D or results from the procurement, federal R&D grants are a form of economic aid for science and engineering to provide a public good and serve as an economic stimulus. This InfoBrief presents data on federal agency obligations for extramural R&D and R&D plant by both contracts and grants from the most recent Federal Funds for R&D Survey, sponsored by the National Center for Science and Engineering Statistics within the U.S. National Science Foundation (NSF).

Federal Agency Funding of R&D Contracts and Grants

In FY 2022, federal obligations for R&D contracts totaled \$51.9 billion, an increase of 1.8% from \$51.0 billion in FY 2021. The Department of Defense (DOD) accounted for the majority of R&D contracts with \$36.2 billion, or 70% of all R&D contracts in FY 2022 (figure 1). The National Aeronautics and Space Administration (NASA) was the second-largest funder of R&D contracts with \$6.5 billion (12%), followed by the Department of Health and Human Services (HHS) with \$5.6 billion (11%). Federal obligations for R&D grants outpaced R&D contracts by \$0.5 billion, totaling \$52.4 billion in FY 2022.

Figure 1

Federal obligations for extramural R&D, by agency and type of agreement: FY 2022



Note(s):

Because of rounding, detail may not add to total.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2022–23.

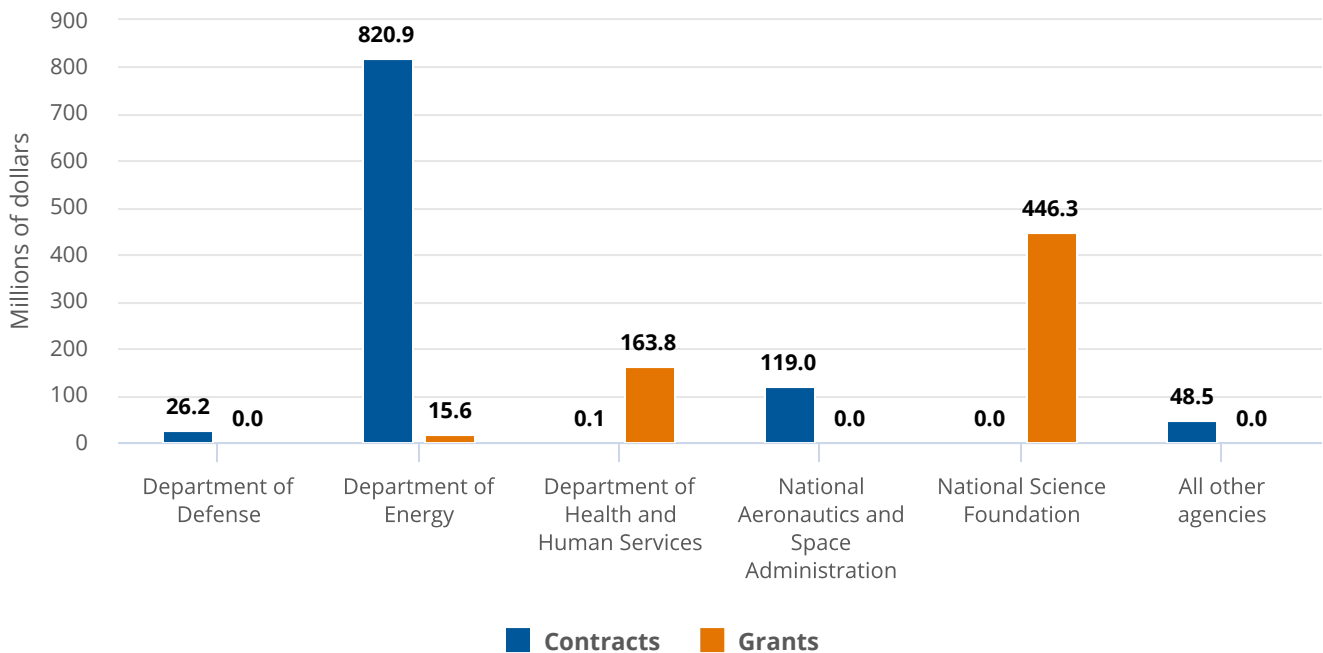
In FY 2022, federal obligations for R&D grants totaled \$52.4 billion, an increase of 2.7% from \$51.0 billion in FY 2021. Although DOD was the largest funder of R&D contracts in FY 2022, HHS accounted for the majority of grants with \$33.2 billion, or 63% of all R&D grants. DOD was the second largest funder of R&D grants with \$6.5 billion, or 12% of the total. NSF closely followed with \$6.3 billion, or 12%.⁴

Federal Agency Funding of R&D Plant Contracts and Grants

In FY 2022, federal obligations for R&D plant contracts totaled \$1.0 billion, an increase of 23.2% from \$824.5 million in FY 2021. The Department of Energy (DOE) accounted for the majority of R&D plant contracts with \$820.9 million, or 81% of all R&D plant contracts in FY 2022 (figure 2). NASA was the second-largest funder of R&D plant contracts totaling \$119.0 million (12%), DOD accounted for \$26.2 million, and all other agencies combined totaled \$48.5 million.

Figure 2

Federal obligations for extramural R&D plant, by agency and type of agreement: FY 2022

**Note(s):**

Because of rounding, detail may not add to total.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2022–23.

In FY 2022, federal grant obligations for R&D plant totaled \$625.7 million, an increase of 12.5% from \$556.0 million in FY 2021. NSF was the largest funder of grants with \$446.0 million, or 71% of all grants for R&D plant in FY 2022. HHS was the second-largest funder of grants for R&D plant with \$163.8 million (26%), followed by DOE with \$15.6 million (2%) in grants.

Data Sources, Limitations, and Availability

The Federal Funds for R&D Survey is a census of all federal agencies that fund R&D programs, as identified from information in the president's budget submission to Congress, excluding the Central Intelligence Agency. Federal agencies that fund R&D are identified in the Analytical Perspectives volume of the president's FY 2023 budget to Congress.⁵ Data were obtained from 32 federal agencies (14 federal departments and 18 independent agencies) that had obligations for R&D during FY 2022 or FY 2023. Because multiple subdivisions of some federal departments completed the survey, there were agency-level responses from 6 federal departments, 48 agencies (within another 8 federal departments), and 18 independent agencies. However, lower offices could also be authorized to enter data. In Federal Funds for R&D Survey nomenclature, agency-level offices could authorize program offices, program offices could authorize field offices, and field offices could authorize branch offices. When these suboffices are included, there were 725 total respondents: 72 agencies, 95 program offices, 178 field offices, and 380 branch offices.

Although this survey is a census of federal agencies that fund R&D and there is no sampling error, survey data are still subject to some degree of unmeasured nonsampling error, which may include errors in classification or measurement of certain aspects of an agency's R&D. For additional information see the section "Survey Quality Measures" within the [Technical Notes](#) of the survey.

Effective with volume 71 (FYs 2021 and 2022), the Federal Funds for R&D Survey has collected federal agency obligation for extramural R&D and R&D plant by type of agreement. The full set of data tables for FY 2022 are available at <https://nces.nsf.gov/surveys/federal-funds-research-development/2022-2023#data>.

Notes

- 1** Obligations represent the amount for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when the funds were appropriated or when future payment of money is required.
- 2** Contracts are legal commitments in which a good or service is provided by the external performer that benefits the agency. The agency specifies the deliverables and gains the rights to results. These transactions are consistent with Office of Management and Budget (OMB) Object Class code 25.5, research and development contracts. See OMB Circular A-11, Section 83.6, Schedule O. Grants are legal agreements to provide funding by an agency to support a specific purpose, but not to acquire property and services for the agency. Cooperative agreements (e.g., CRADAs [Cooperative Research and Development Agreements]) are also reported as part of the grants category.
- 3** R&D plant is defined as spending on both R&D facilities and major equipment as defined in OMB Circular A-11 Section 84 (Schedule C) and includes physical assets, such as land, structures, equipment, and intellectual property (e.g., software or applications) that have an estimated useful life of 2 years or more. Reporting for R&D plant includes the purchase, construction, manufacture, rehabilitation, or major improvement of physical assets regardless of whether the assets are owned or operated by the federal government, states, municipalities, or private individuals. The cost of the asset includes both its purchase price and all other costs incurred to bring it to a form and location suitable for use. For more details see the survey Technical Notes at https://nces.nsf.gov/surveys/federal-funds-research-development/2022-2023#technical-notes_definitions.
- 4** Details available in the full set of data tables: [table 9](#).
- 5** Executive Office of the President, OMB, *Budget of the United States Government, Fiscal Year 2023*. Analytical Perspectives volume, chapter 6, "Research and Development." Available at https://www.whitehouse.gov/wp-content/uploads/2022/04/spec_fy2023.pdf.

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