



CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

May 16, 2000

S. 2046

A bill to reauthorize the Next Generation Internet Act, and for other purposes

*As ordered reported by the Senate Committee on Commerce, Science, and Transportation
on April 13, 1999*

SUMMARY

S. 2046 would authorize funds to be appropriated over a multiyear period for certain research and development (R&D) activities. The bill contains both specific and general authorizations. Title I would extend the authorization for research on large-scale computing, including the Next Generation Internet (NGI) program, through 2003. That authorization specifies a total of \$1.1 billion that may be appropriated to nine agencies for such purposes over the three-year period. Title II would establish an annual lump-sum authorization for nondefense R&D at 15 agencies, beginning with a total of \$39.8 billion in 2000 and increasing by 5.5 percent a year for the following 10 years. Instead of authorizing separate amounts for individual agencies or programs, title II would allow these aggregate amounts to be distributed according to guidelines in the bill. Finally, the bill includes directives regarding the evaluation of R&D programs and studies to be conducted by the National Academy of Sciences (NAS).

Assuming appropriation of the authorized amounts, CBO estimates that implementing the bill would cost a total of \$193.7 billion over the 2000-2005 period and an additional \$344.8 billion after 2005. The bill would not affect direct spending or receipts; therefore, pay-as-you-go procedures would not apply.

S. 2046 contains no intergovernmental mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments. S. 2046 would impose a private-sector mandate, as defined by UMRA, on the National Academy of Sciences. The direct costs of the mandate would be well below the threshold established by UMRA for private-sector mandates (\$109 million in 2000, adjusted annually for inflation).

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 2046 is shown in Table 1. The costs of this legislation fall within budget functions 050 (national defense), 250 (general science, space, and technology), 300 (natural resources and the environment), 350 (agriculture), 370 (commerce and housing credit), 400 (transportation), 500 (education, training, employment, and social services), 550 (health), and 700 (veterans benefits and services).

TABLE 1. ESTIMATED BUDGETARY IMPACT OF S. 2046

	By Fiscal Year, in Millions of Dollars					
	2000	2001	2002	2003	2004	2005
SPENDING SUBJECT TO APPROPRIATION						
R&D Spending Under Current Law						
Budget Authority ^a	39,915	0	0	0	0	0
Estimated Outlays	38,811	22,286	5,750	2,299	738	83
Proposed Changes						
Estimated Authorization Level	b	42,326	44,654	47,104	49,290	52,000
Estimated Outlays	0	18,066	36,864	42,652	46,527	49,590
R&D Spending Under S. 2046						
Estimated Authorization Level ^a	39,915	42,326	44,654	47,104	49,290	52,000
Estimated Outlays	38,811	40,352	42,614	44,951	47,265	49,673

a. The 2000 level is based on the Office of Management and Budget's estimate of the funding for R&D activities at the affected agencies for that year. The 2000 total includes \$325 million for R&D at the Department of Transportation that was provided as contract authority (a form of direct spending).

b. The \$39,790 million authorized in title II for civilian R&D for fiscal year 2000 would be \$75 million less than the amount appropriated for R&D at the designated agencies for that year. For purposes of this estimate, CBO assumes that enacting this bill would have no effect on current-year appropriations.

BASIS OF ESTIMATE

CBO estimates that S. 2046 would authorize the appropriation of a total of \$235.4 billion over the 2001-2005 period, of which \$1.1 billion would be authorized specifically for NGI activities in title I and \$234.3 billion for R&D at the agencies specified in title II. In addition, the bill would authorize a total of \$306 billion for R&D for fiscal years 2006 through 2010. Based on information from the NAS, we estimate that the two studies required by the bill would cost about \$1 million.

CBO assumes that the authorized amounts will be appropriated for each year and allocated among agencies and programs according to the current distribution of funding for civilian R&D programs at the designated agencies. Table 2 shows the fiscal year 2000 funding levels for R&D activities at the 15 agencies covered by title II. These data suggest that the rate of spending for the bill’s lump-sum authorization levels would largely be determined by the activities of the National Institutes of Health, the National Aeronautics and Space Administration, the Department of Energy, and the National Science Foundation. The authorization provided in title I would fund activities at eight of the agencies covered by title II as well as the Department of Defense, the National Security Agency, and the Agency for Healthcare Research and Quality.

TABLE 2. ESTIMATED FISCAL YEAR 2000 BUDGET AUTHORITY FOR R&D ACTIVITIES AUTHORIZED BY TITLE II OF S. 2046 (Millions of dollars)

National Institutes of Health	17,141
National Aeronautics and Space Administration	9,753
Department of Energy (civilian R&D)	3,816
National Science Foundation	2,903
Department of Agriculture	1,773
Veterans Administration	655
Environmental Protection Agency	648
National Oceanic and Atmospheric Administration	591
Department of Transportation	585
Department of the Interior	584
Centers for Disease Control	477
National Institute of Standards and Technology	458
Department of Education	233
Food and Drug Administration	135
Smithsonian Institution	<u>113</u>
Total	39,865

PAY-AS-YOU-GO CONSIDERATIONS: None.

ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS

S. 2046 contains no intergovernmental mandates as defined in UMRA and would impose no costs on state, local, or tribal governments. Currently, about \$15.5 billion of the research and

development budgets of the agencies affected by this bill goes to academic institutions, including public universities.

ESTIMATED IMPACT ON THE PRIVATE SECTOR

S. 2046 would impose a private-sector mandate, as defined by UMRA, on the National Academy of Sciences.

The bill would require the National Academy of Sciences, a nonprofit institution, to conduct a study to determine “the extent to which the Internet backbone and network infrastructure contribute to the uneven ability to access to Internet-related technologies and services by rural and low-income Americans.” According to the National Academy of Sciences, the cost of undertaking the study would be about \$400,000. Thus, the direct cost of the mandate would be well below the annual threshold established by UMRA for private-sector mandates (\$109 million in 2000, adjusted annually for inflation). S. 2046 would also authorize appropriations to cover the costs of preparing that study.

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