

the High-Performance Computing Act of 1991 which comprises this chapter.

SHORT TITLE

This subchapter known as the “Department of Energy High-End Computing Revitalization Act of 2004”, see Short Title note set out under section 5501 of this title.

**§ 5542. Department of Energy high-end computing research and development program**

**(a) In general**

The Secretary shall—

(1) carry out a program of research and development (including development of software and hardware) to advance high-end computing systems; and

(2) develop and deploy high-end computing systems for advanced scientific and engineering applications.

**(b) Program**

The program shall—

(1) support both individual investigators and multidisciplinary teams of investigators;

(2) conduct research in multiple architectures, which may include vector, reconfigurable logic, streaming, processor-in-memory, and multithreading architectures;

(3) conduct research on software for high-end computing systems, including research on algorithms, programming environments, tools, languages, and operating systems for high-end computing systems, in collaboration with architecture development efforts;

(4) provide for sustained access by the research community in the United States to high-end computing systems and to Leadership Systems, including provision of technical support for users of such systems;

(5) support technology transfer to the private sector and others in accordance with applicable law; and

(6) ensure that the high-end computing activities of the Department of Energy are coordinated with relevant activities in industry and with other Federal agencies, including the National Science Foundation, the Defense Advanced Research Projects Agency, the National Nuclear Security Administration, the National Security Agency, the National Institutes of Health, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the National Institutes of Standards and Technology, and the Environmental Protection Agency.

**(c) Leadership Systems facilities**

**(1) In general**

As part of the program carried out under this subchapter, the Secretary shall establish and operate 1 or more Leadership Systems facilities to—

(A) conduct advanced scientific and engineering research and development using Leadership Systems; and

(B) develop potential advancements in high-end computing system hardware and software.

**(2) Administration**

In carrying out this subsection, the Secretary shall provide to Leadership Systems, on

a competitive, merit-reviewed basis, access to researchers in United States industry, institutions of higher education, national laboratories, and other Federal agencies.

**(d) High-End Software Development Center**

**(1) In general**

As part of the program carried out under this subchapter, the Secretary shall establish at least 1 High-End Software Development Center.

**(2) Duties**

A Center shall concentrate efforts to develop, test, maintain, and support optimal algorithms, programming environments, tools, languages, and operating systems for high-end computing systems.

**(3) Proposals**

In soliciting proposals for the Center, the Secretary shall encourage staffing arrangements that include both permanent staff and a rotating staff of researchers from other institutions and industry to assist in coordination of research efforts and promote technology transfer to the private sector.

**(4) Use of expertise**

The Secretary shall use the expertise of a Center to assess research and development in high-end computing system architecture.

**(5) Selection**

The selection of a Center shall be determined by a competitive proposal process administered by the Secretary.

(Pub. L. 108–423, § 3, Nov. 30, 2004, 118 Stat. 2400.)

REFERENCES IN TEXT

This subchapter, referred to in subsecs. (c)(1) and (d)(1), was in the original “this Act”, meaning Pub. L. 108–423, Nov. 30, 2004, 118 Stat. 2400, which is classified principally to this subchapter. For complete classification of this Act to the Code, see Short Title note set out under section 5501 of this title and Tables.

CODIFICATION

This section was enacted as part of the Department of Energy High-End Computing Revitalization Act of 2004 which comprises this subchapter, and not as part of the High-Performance Computing Act of 1991 which comprises this chapter.

**§ 5543. Authorization of appropriations**

In addition to amounts otherwise made available for high-end computing, there are authorized to be appropriated to the Secretary to carry out this subchapter—

(1) \$50,000,000 for fiscal year 2005;

(2) \$55,000,000 for fiscal year 2006; and

(3) \$60,000,000 for fiscal year 2007.

(Pub. L. 108–423, § 4, Nov. 30, 2004, 118 Stat. 2402.)

REFERENCES IN TEXT

This subchapter, referred to in text, was in the original “this Act”, meaning Pub. L. 108–423, Nov. 30, 2004, 118 Stat. 2400, which is classified principally to this subchapter. For complete classification of this Act to the Code, see Short Title note set out under section 5501 of this title and Tables.

CODIFICATION

This section was enacted as part of the Department of Energy High-End Computing Revitalization Act of