

which is promoted and facilitated by the increasingly active involvement of foreign governments, and (B) other changes in the nature of foreign competition.

(4) The principal cause of the relative shift in strength of the United States and its semiconductor competitors is the establishment of a long-term goal by a major foreign competitor to achieve world superiority in semiconductor research and manufacturing technology and the pursuit of such goal by that competitor by effectively marshalling all of the government, industry, and academic resources needed to achieve that goal.

(5) Although the United States semiconductor industry leads all other principal United States industries in terms of its reinvestment in research and development, that has been insufficient by worldwide standards.

(6) Electronic equipment is essential to protect the national security of the United States, as is evidenced by the allocation of approximately 35 percent of the total research, development, and procurement budgets of the Department of Defense to electronics research.

(7) The Armed Forces of the United States will eventually depend extensively on foreign semiconductor technology unless significant steps are taken, and taken at an early date, to retain United States leadership in semiconductor technology research.

(8) It is in the interests of the national security and national economy of the United States for the United States to regain its traditional world leadership in the field of semiconductors.

(9) The most effective means of regaining that leadership is through a joint research effort of the Federal Government and private industry of the United States to improve semiconductor manufacturing technology and to develop practical uses for such technology.

(10) In order to meet the national defense needs of the United States and to insure the continued vitality of a commercial manufacturing base in the United States, it is essential that priority be given to the development, demonstration, and advancement of the semiconductor technology base in the United States.

(11) The national laboratories of the Department of Energy are a major national research resource, and the extensive involvement of such laboratories in the semiconductor research initiatives of the Federal Government and private industry would be an effective use of such laboratories and would help insure the success of such initiatives.

(Pub. L. 100-180, div. C, title I, §3141, Dec. 4, 1987, 101 Stat. 1241.)

§ 4622. Establishment of semiconductor manufacturing technology research initiative

The Secretary of Energy shall initiate and carry out a program (hereinafter in this subchapter referred to as the "Initiative") of research on semiconductor manufacturing technology and on the practical applications of such technology. The Secretary may carry out the Initiative in a way that complements the activi-

ties of a consortium of United States semiconductor manufacturers, materials manufacturers, and equipment manufacturers, established for the purpose of conducting research concerning advanced semiconductor manufacturing techniques and developing techniques to adopt manufacturing expertise to a variety of semiconductor products.

(Pub. L. 100-180, div. C, title I, §3142, Dec. 4, 1987, 101 Stat. 1242.)

REFERENCES IN TEXT

This subchapter, referred to in text, was in the original "this subtitle" and was translated as reading "this part" meaning part D of title I of division C of Pub. L. 100-180 which enacted this subchapter, to reflect the probable intent of Congress because title I did not contain subtitles.

§ 4623. Participation of national laboratories of Department of Energy

(a) Mission of national laboratories

Each national laboratory of the Department of Energy may participate in research and development projects under the Initiative in conjunction with the Department of Defense or with any consortium, college, or university carrying out any project for or in cooperation with any consortium referred to in section 4622 of this title, to the extent that such participation is consistent with the missions of the national laboratory.

(b) Agreements

The Secretary of Energy may enter into such agreements with the Secretary of Defense, with any consortium referred to in section 4622 of this title, and with any college or university as may be necessary to provide for the active participation of the national laboratories of the Department of Energy in the Initiative.

(c) Research and development

One or more national laboratories of the Department of Energy shall participate in the Initiative by conducting research and development activities relating to research on the development of semiconductor manufacturing technologies. Such activities may include research and development relating to materials fabrication, materials characterization, design and modeling of devices, and new processing equipment.

(Pub. L. 100-180, div. C, title I, §3143, Dec. 4, 1987, 101 Stat. 1243.)

§ 4624. Personnel exchanges

The Secretary of Energy may authorize temporary exchanges of personnel between the national laboratories of the Department of Energy and any domestic firm or any consortium referred to in section 4622 of this title that is participating in the Initiative. The exchange of personnel shall be subject to such restrictions, limitations, terms, and conditions that the Secretary of Energy considers necessary in the interest of national security.

(Pub. L. 100-180, div. C, title I, §3144, Dec. 4, 1987, 101 Stat. 1243.)

§ 4625. Other Department of Energy resources**(a) Availability of resources**

Subject to subsection (b) of this section, the Secretary of Energy may make available to the Department of Defense, to any other department or agency of the Federal Government, and to any consortium that has entered into an agreement in furtherance of the Initiative any facilities, personnel, equipment, services, and other resources of the Department of Energy for the purpose of conducting research and development projects under the Initiative consistent with section 4623(a) of this title.

(b) Reimbursement

The Secretary may make facilities available under this section only to the extent that the cost of the use of such facilities is reimbursed by the user.

(Pub. L. 100-180, div. C, title I, §3145, Dec. 4, 1987, 101 Stat. 1243.)

§ 4626. Budgeting for semiconductor manufacturing technology research**(a) Budget submission**

To the extent the Secretary considers appropriate and necessary, the Secretary of Energy, in preparing the research and development budget of the Department of Energy to be included in the annual budget submitted to the Congress by the President under section 1105(a) of title 31, shall provide for programs, projects, and activities that encourage the development of new technology in the field of semiconductors.

(b) Budget categories

The programs, projects, and activities described in subsection (a) of this section shall be included in the budget for general science and research activities of the Department of Energy, except that any programs, projects, and activities that directly support and directly benefit the defense activities of the Department shall be included in the budget for atomic energy defense activities of the Department of Energy.

(Pub. L. 100-180, div. C, title I, §3146, Dec. 4, 1987, 101 Stat. 1243.)

§ 4627. Cost-sharing agreements**(a) Permitted provisions**

The director of each national laboratory of the Department of Energy that is participating in the Initiative or the contractor operating any such national laboratory, in carrying out programs under a contract with the Department of Energy, may include in any research and development agreement entered into with a domestic firm in connection with such Initiative a cooperative provision for the domestic firm to pay a portion of the cost of the research and development activities.

(b) Limitations

(1) Not more than an amount equal to 1 percent of any national laboratory's annual budget shall be received from nonappropriated funds derived from contracts entered into under the Initiative in any fiscal year, except to the extent approved in advance by the Secretary of Energy.

(2) No Department of Energy national laboratory may receive more than \$10,000,000 of nonappropriated funds under any cooperative research and development agreement entered into under this subsection in connection with the Initiative, except to the extent approved in advance by the Secretary of Energy.

(Pub. L. 100-180, div. C, title I, §3147, Dec. 4, 1987, 101 Stat. 1244.)

§ 4628. Department of Energy oversight of cooperative agreements relating to Initiative**(a) Provisions relating to disapproval and modification of agreements**

If the Secretary of Energy desires an opportunity to disapprove or require the modification of any agreement under section 4627 of this title, the agreement shall provide a 90-day period within which such action may be taken, beginning on the date the agreement is submitted to the Secretary.

(b) Record of agreements

Each national laboratory shall maintain a record of all agreements entered into under this section.

(Pub. L. 100-180, div. C, title I, §3148, Dec. 4, 1987, 101 Stat. 1244.)

§ 4629. Avoidance of duplication

In carrying out the Initiative, the Secretary of Energy shall ensure that unnecessary duplicative research is not performed at the research facilities (including the national laboratories of the Department of Energy) that are participating in the Initiative.

(Pub. L. 100-180, div. C, title I, §3149, Dec. 4, 1987, 101 Stat. 1244.)

§ 4630. Authorization of appropriations

There is authorized to be appropriated to the Department of Energy for fiscal year 1988 the sum of \$25,000,000 for general science and research activities of the Department of Energy under the Initiative.

(Pub. L. 100-180, div. C, title I, §3150, Dec. 4, 1987, 101 Stat. 1244.)

§ 4631. Technology transfer**(a) In general**

The Secretary of Energy shall adopt procedures to provide for timely and efficient transfer of semiconductor technology developed under the Initiative pursuant to applicable laws, Executive orders, and regulations.

(b) Plan for commercialization enhancement

(1) Not later than one year after the date on which funds are first appropriated to conduct the Initiative, the Secretary of Energy shall transmit to the committees of Congress named in paragraph (2) a plan for the transfer of semiconductor technology and information generated by the Initiative.

(2) The committees of Congress referred to in paragraph (1) are the Committees on Armed Services of the Senate and House of Representatives, the Committee on Energy and Natural Re-