

to other alternatives for reducing noise and vibration.

“(c) DEMONSTRATION.—The Secretary may, based on the findings and conclusions of the study carried out under this section, conduct at least one project designed to demonstrate the commercial application of active noise and vibration cancellation technologies using fast adapting algorithms in products or equipment with a significant potential for increased energy efficiency.”

### § 13452. Natural gas and electric heating and cooling technologies

#### (a) Program direction

(1) The Secretary shall conduct a 5-year program, in accordance with sections 13541 and 13542 of this title, on energy efficient natural gas and electric heating and cooling technologies for residential and commercial buildings.

(2) The natural gas heating and cooling program shall include activities on—

(A) thermally activated heat pumps, including absorption heat pumps and engine-driven heat pumps; and

(B) other advanced natural gas technologies, including fuel cells for residential and commercial applications.

(3) The electric heating and cooling program shall focus on—

(A) advanced heat pumps;

(B) thermal storage; and

(C) advanced electric HVAC (heating, ventilating, and air conditioning) and refrigeration systems that utilize replacements for chlorofluorocarbons.

#### (b) Proposals

Within 180 days after October 24, 1992, the Secretary shall solicit proposals for conducting activities under this section.

(Pub. L. 102-486, title XXI, § 2102, Oct. 24, 1992, 106 Stat. 3068.)

### § 13453. Pulp and paper

#### (a) Program direction

The Secretary shall conduct a 5-year program, in accordance with sections 13541 and 13542 of this title, on advanced pulp and paper technologies. Such program shall include activities on energy generation technologies, boilers, combustion processes, pulping processes (excluding de-inking), chemical recovery, causticizing, source reduction processes, and other related technologies that can improve the energy efficiency of, and reduce the adverse environmental impacts of, pulp and papermaking operations. This section does not authorize projects involving the combustion of waste paper, other than gasification.

#### (b) Proposals

Within 180 days after October 24, 1992, the Secretary shall solicit proposals for conducting activities under this section.

(Pub. L. 102-486, title XXI, § 2103, Oct. 24, 1992, 106 Stat. 3069.)

### § 13454. Advanced buildings for 2005

#### (a) Program direction

The Secretary shall initiate a 5-year program, in accordance with sections 13541 and 13542 of

this title, to increase building energy efficiency, while maintaining affordability, by the year 2005. Such program shall include activities on—

(1) building design, design methods, and construction techniques;

(2) building materials, including recycled materials, and components;

(3) on-site energy supply conversion systems such as photovoltaics;

(4) automated energy management systems;

(5) methods of evaluating performance; and

(6) insulation products manufactured with nonozone depleting materials.

#### (b) Proposals

##### (1) Solicitation

Within 1 year after October 24, 1992, the Secretary shall solicit proposals for conducting activities under this section.

##### (2) Contents of proposals

Proposals submitted under this subsection shall include and be judged upon—

(A) evidence of knowledge of current building practices in the United States and in other countries;

(B) an explanation of how the proposal will encourage the commercialization of the technologies resulting from activities in subsection (a) of this section;

(C) evidence of consideration of collaboration with Department of Energy national laboratories;

(D) evidence of collaboration with relevant industry or other groups or organizations; and

(E) a demonstration of the ability of the proposers to undertake and complete the project proposed.

(Pub. L. 102-486, title XXI, § 2104, Oct. 24, 1992, 106 Stat. 3069.)

### § 13455. Electric drives

#### (a) Program

The Secretary shall conduct a 5-year program, in accordance with sections 13541 and 13542 of this title, to increase the efficiency of electric drive technologies, including adjustable speed drives, high speed motors, and high efficiency motors.

#### (b) Proposals

Within 1 year after October 24, 1992, the Secretary shall solicit proposals for projects under this section.

(Pub. L. 102-486, title XXI, § 2105, Oct. 24, 1992, 106 Stat. 3070.)

### § 13456. Improving efficiency in energy-intensive industries

#### (a) Secretarial action

The Secretary, in accordance with sections 13541 and 13542 of this title, shall—

(1) pursue a research, development, demonstration and commercial application program intended to improve energy efficiency and productivity in energy-intensive industries and industrial processes; and

(2) undertake joint ventures to encourage the commercialization of technologies developed under paragraph (1).