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## For a U.S. Energy Agency

Of the many social and technological challenges facing the American people, none is more central to our short- and long-term welfare than that of energy: we must have sufficient energy to meet our legitimate needs, and it must be clean energy. It is essential that our view of, and attack on, the energy problem be commensurate with its magnitude and character. Besides the social aspects of the problem—which include the necessity to change the energy-wasteful habits of our people—there remain diverse technical problems related to resource assessment and to the development of efficient and environmentally sound energy technologies and energy-storage and transmission systems.

A number of energy sources are available, and each one must be explored and developed. Each presents its own advantages and problems. Oil and natural gas are relatively clean, but the supply is dwindling and will be required as chemical raw materials. Coal is more abundant, but it is difficult to mine and burn without degrading the environment. We must improve our fossil fuel technology—for example, coal gasification and liquefaction, fluidized-bed combustion, and oil-shale processing.

Nuclear energy is available because the nation has committed substantial resources to its development. The supply of nuclear fuel will last for hundreds of years if it is efficiently used in breeder systems. Solutions to the two major problems associated with nuclear power—isolation of waste products from the environment and adequate safeguards against a major accident—are being pursued vigorously.

Other clean and abundant sources of energy await development: solar radiation, the earth's heat, and the fusion of light nuclei. Only in the last of these, nuclear fusion, is the United States engaged in a serious, although not yet adequate, development effort. The heat of the earth's crust is sufficient to satisfy much of our energy requirements for hundreds of years if it can be extracted efficiently. For some of the near-surface geothermal sources, the present state of technology may suffice; for deeper-lying sources of hot rock, new technologies will be required. Much research and development will be required to determine whether it is feasible to collect and convert the enormous, but dilute, flux of solar radiation. However, if society chooses to invest sufficiently in solar and geothermal energy, it is possible that these technologies might be in widespread use by the end of the century.

Some problems of development are common to all of these diverse energy sources: namely, resource assessment; plant siting; the technologies of cooling, energy storage, and conversion; power transmission; and waste disposal. To develop and utilize these technologies in the most economic and expeditious manner, the coordination of U.S. energy programs must be the responsibility of a single government agency.

The Atomic Energy Commission has developed, over several decades, a superb research base, with excellent laboratories and a tradition of successfully managing large projects in the public interest. It is already developing two of the principal sources of energy—fission and fusion—and in these programs has maintained close liaison and cooperation with the industrial sector. The Commission has the scientific expertise, technical capability, and organizational strength to develop the other energy sources as well.

No other agency of the federal government is in a more favorable position to launch a unified program for meeting the energy needs of the American people than is the Atomic Energy Commission. It should be transformed into the U.S. Energy Agency.—GLENN T. SEABORG