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SUMMARY OF THE NATIONAL REPORT SUBMITTED BY THE UNITED STATES OF AMERICA*

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NEW AND RENEWABLE ENERGY IN THE UNITED STATES OF AMERICA

Summary

The United States of America has a well-developed and diversified energy resource base. It is a major producer of coal, oil, natural gas and renewable energy. United States energy consumption also ranges widely, from uses of energy in highly energy-intensive process industries to the localized heating and cooling requirements of a continental nation with wide climatic variations. Energy development, distribution and use in the United States is largely left to the market-place and private initiative at the local and national levels.

Over the history of the United States, changing relative energy prices and demand requirements have led to several energy transitions. At independence in 1776, the United States was almost totally reliant on renewable energy sources. Today, fossil fuels such as coal and oil play the leading roles in meeting the energy needs of the United States, but new and renewable sources, particularly hydropower and wood, supply 5 per cent of national consumption.

In response to the sharply rising prices of conventional fuels, particularly oil, the private sector has been increasingly exploring the development of attractive sources of new and renewable energy, an effort which government at the national, state and local levels supports strongly.

Activity is widespread as new technologies are developed and tested in the market-place, and older technologies once again become economically attractive. The paper prepared by the United States for the United Nations Conference on New and Renewable Sources of Energy is a comprehensive report on the following technologies under consideration by the Conference:

Hydropower is a relatively well developed source of commercial energy in the United States. Moderate growth in the future will come largely from exploitation of smaller and more marginal sites.

Fuelwood use for domestic heating requirements in the United States is growing. An active demand for wood-burning stoves is stimulating innovations in energy efficiency.

Biomass may become the most common renewable energy source in the United States. Direct combustion of organic matter for process heat, and conversion to alcohol fuel, methane gas and chemical feedstock are among the most promising applications.

Solar power contributions to the energy demand of the United States are as yet small, but various thermal technologies may prove competitive for residential, industrial and utility applications. Intensive research is also under way in photovoltaics, which already have become viable in some commercial applications. Passive solar design for commercial and residential buildings is becoming increasingly common as designers, builders and occupants become more conscious of rising energy costs.

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Geothermal energy is utilized on a regular basis for electric generation at several sites in California. Private industry and the United States Geological Survey are exploring for other possible sites and research is under way on technical problems of exploitation.

Wind energy is again becoming competitive in some small-scale and localized applications, such as rural water pumps. Research and government-supported demonstration projects are under way to determine the viability of wind energy in other areas, such as electricity generation.

Oil shale deposits are vast and spread widely in some areas of the United States. Private industry has leased land and is undertaking development on a demonstration basis. Technical and environmental problems may impede the early development of this energy source.

Tar sands deposits in the United States are scattered, deep and not at present commercial. United States industry, however, is contributing to the development of tar sands deposits in Venezuela and Canada, and is developing technology and expertise which could be utilized in the United States in the future.

Ocean energy research and demonstration is under way at several locations in the United States, funded by industry, government and non-profit organizations. United States research is part of a world-wide effort to assess the feasibility and commercial applications of ocean thermal gradient, wave and tidal forms of ocean energy.

In all of these specific energy sectors, United States efforts to develop and commercialize new technologies take place in a framework of international co-operation and trade. United States technology and equipment in new and renewable energy is in use in many areas of the world, and under many different circumstances. In this context, the United States welcomes the United Nations Conference on New and Renewable Sources of Energy. The Conference presents an opportunity to review progress, exchange ideas and agree on needed individual and co-operative action to facilitate the development and use of new and renewable sources of energy.
