

ASME Energy Committee Policy Statement

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To the Members of ASME:

The Energy Committee of the Council on Engineering (COE) of ASME International is responsible for coordinating the cross-cutting, energy-related activities of the Society. It comprises members and representatives from those technical divisions that have an interest and/or involvement in energy-related activities. In the context of the Committee's operation, energy-related activities are defined as including the broad spectrum of production, utilization, conversion, efficiency, economic, safety and environmental concerns associated with the transportation, power production, industrial, commercial and residential use of energy.

The Committee is tasked by the COE to perform the following activities: identify and develop position statements on energy-related subjects; serve as a resource for the COE and ASME on energy; act as a liaison for ASME with outside organizations; and to develop and/or coordinate forums at conferences on energy-related topics of broad interest across divisions.

As a direct result of the energy issues highlighted by the situation in California, the Committee completed a position paper on energy policy that was approved by the COE and the Board of Governors and released in March 2001. This statement is included below for your information. Many of you will find it does not represent your positions fully or in detail. This is a direct result of the scope of the Committee membership and the need to accommodate a broad range of positions and areas of interest within ASME. In this regard, I urge you and your Divisions to consider writing policy statements on specific areas of interest to you. If you need help, we have a short presentation on how to develop an ASME White Paper. We are willing to arrange for one of our members to present it to you at an upcoming meeting. Just contact me for more information or to schedule the workshop.

I want to take this opportunity to thank your representatives to the Energy Committee for their hard work this year, and I look forward to working with them during the coming one.

Best Regards,
Thomas R. Mancini

General Position Statement of ASME International on Energy Policy March 2001

Reliable and affordable sources of energy are essential for America's economic and national security. Recent price spikes and supply disruptions have brought the critical nature of energy into the public eye and underscore the need for a comprehensive energy strategy to ensure a sustainable supply of energy for the United States. The American Society of Mechanical Engineers (ASME International), offers the following recommendations for policy makers to consider as they address the myriad, serious energy issues facing the nation. The Society also offers its assistance in developing a National Energy Strategy.

Our Guiding Principles

1. For the economic health and security of the nation, the United States must be assured an adequate, sustainable supply of energy.
2. To avoid fuel shortages and the resulting price spikes, the nation must maintain a balanced fuel mix for power generation, which includes coal, nuclear, natural gas, and hydroelectric power, and must accelerate the development of advanced technologies and renewable resources.

3. A national energy policy must strike the appropriate balance between the supply side (resource availability and distribution) and the demand side (conservation, utilization, and efficiency).
4. Additional efforts must be made to ensure reliability of the over-burdened power grid and other energy distribution systems in a deregulated electricity market.
5. Licensing and permitting issues and environmental considerations must be carefully balanced with the need/desire to provide more energy.

Conservation and Technology Development. Energy conservation must be a high priority in America's energy policy. Greater utilization of currently available technologies is necessary to improve the efficiencies of end-use applications in all sectors of energy production and utilization. The federal government should increase investment in research and development for new energy technologies to advance conservation, utilization, and efficiency. Further, we must review our current energy resource utilization and balance it against the highest efficiency and most appropriate utilization of resources. For example, even though most of the power plants currently being designed and built utilize natural gas as the fuel source, it may be more appropriate to conserve this limited energy resource for home heating applications.

Coal. Coal is the nation's most plentiful and readily available domestic fossil fuel source. It accounts for about 55 percent of the power generated in the United States. Greater utilization of this abundant domestic energy resource will be largely contingent upon the development of technologies that mitigate environmental hazards from the combustion of coal. Such technologies include clean coal technologies, gasification, indirect liquifaction, and hybrid power plants partnering coal with renewable energy sources. An aggressive government-industry partnership is needed to accelerate the development and utilization of these technologies.

Natural Gas. Nearly all of the power plants currently being planned or being brought online are powered by natural gas. Natural gas is a more costly fuel source than coal, but that fact is mitigated by a lower cost for power plant development and permitting, and reduced emissions.

The current high price of natural gas should serve as a catalyst for a government-industry partnership to improve the distribution infrastructure and increase exploration efforts for this important fuel. The current situation in the gas supply markets underscores the folly of over-reliance on one particular fuel for the nation's power generating and home heating needs.

Nuclear. Nuclear power currently accounts for about 20 percent of U.S. power generation. That percentage could decrease over the next 20 years if older plants are retired rather than being re-licensed.

ASME strongly believes that nuclear power, a non-greenhouse gas-emitting resource, is a critical component of a diverse U.S. power generation fuel mix. Although we fully appreciate the issues involved with the use of nuclear power, the Society nonetheless believes that nuclear power should play a larger role in the nation's base power supply. Therefore, we recommend that the following be considered in developing a National Energy Strategy:

- A science-based, rapid solution to storage of civilian spent nuclear fuel. Resolution of this issue is critical to the continued viability of nuclear power.
- Acceleration of Department of Energy plans to develop the Generation IV nuclear power plant for deployment in the United States and in other nations.
- Reversal of the policy of no reprocessing of spent fuel and a detailed examination of the recycle of all uranium and transuranic material in the reactor fuel cycle for maximum energy extraction from the initial uranium.

Renewable Energy. The Society is firm in its belief that renewable energy sources, including hydroelectric power, must play an important role in a national energy strategy. Accordingly, the Council recommends that policy makers:

- Increase funding, incentives, and research for technologies to make wind power, concentrating solar power, photovoltaics, municipal solid waste-to-energy, and biomass more economically viable and encourage their use.
- Support research into hybrid power plants that partner fossil fuels with renewable energy sources, such as solar and biomass, to reduce emissions and conserve fossil fuels.
- Provide incentives to produce more hydroelectric power from existing dams through repowering with modern, more efficient generating equipment.

Petroleum. The continued over-reliance on foreign sources of petroleum is of concern to ASME. Of equal concern is the continuing inability of oil companies to overcome the political barriers to further exploration of petroleum and natural gas on U.S. soil and off U.S. shores. We therefore recommend that policy makers:

- Support the administration's efforts to increase environmentally sensitive petroleum and natural gas exploration on U.S.-owned lands.
- Support efforts to encourage petroleum conservation mea-

asures to reduce the use of gasoline, including proposals to increase the average fuel economy of government-owned vehicle fleets.

- Support the development, application and use of new technologies that encourage drilling and production from deepwater fields.
- Support tax incentives for states to accelerate the infrastructure development needed to enable greater use of alternative fuels for vehicles.

Next Generation of Energy Technologies. As the primary supporter of high-risk, high-potential basic research, the federal government should embark on a focused effort to identify and develop the next generations of energy technologies. While the technologies supported in this paper are very important for the nation's near-term energy future, there is a need to look far into the future and determine what R&D needs to be done today to meet the nation's future energy needs.

Conclusion. The energy challenges facing the United States are varied and many. Our economic and national security depend on readily available, affordable energy. Pre-conceived notions based on past technologies and models of energy markets will not solve our emerging energy problems. They will be solved only when all parties inside and outside of government work together to promote solutions based on sound scientific research and engineering principles.