

BUSH ENERGY POLICY AT ODDS WITH EFFICIENCY

The headline of a story on the front page of the 15 December issue of the *Denver Post* said, "Bush Aides Say No to Conservation." The story reported that "White House aides, led by Chief of Staff John Sununu, have told Energy Secretary James Watkins to remove energy-conservation measures from his proposed National Energy Strategy. . . . Proposals to stiffen auto-fuel efficiency standards and to increase use of non-gasoline fuels drew particularly heavy fire. . . . Bush aides also attacked virtually all of Watkins's proposals to encourage energy conservation."

I suspect that a great majority of the members of the American community of physicists would strongly support the reported efforts of Secretary Watkins and would reject the reported position of Sununu and his allies. We note with pride that in an earlier energy crisis, a decade or two ago, the physics community responded vigorously with several pioneering studies of methods of increasing the efficiency with which energy can be used.

Much of the knowledge one needs to improve the efficiency of energy use is covered by fundamental topics: temperature and heat energy; the gas laws; the first law of thermodynamics; calorimetry; heat transfer by conduction, convection and radiation; the second law of thermodynamics; the Carnot cycle; and heat engines and refrigerators. Readers will recognize these topics as the essential contents of the traditional section on heat and thermodynamics in introductory physics texts. These topics have been an integral part of our first-year physics courses for generations.

Major efforts are currently under way to restructure introductory collegiate physics courses. The physics faculty of one (and perhaps more than one) of the nation's most prestigious technical universities is reported to have decided to omit these traditional topics of thermodynamics from its introductory physics courses. A current suggestion from a major "re-

form" study is to replace these topics in the curriculum with an introduction to statistical mechanics. The courses being affected are those that prepare the nation's future generations of scientists, technologists, engineers and leaders in other professional fields.

There would probably be widespread agreement in the physics community that a major priority for America throughout the foreseeable future must be to improve the efficiency with which we use energy. The White House staff apparently does not want Americans to be educated about this priority, and some leaders of the physics community want these priority topics displaced from our curricula. How odd it is that the actions of some of our tenured friends and colleagues are aiding and abetting the efforts of transient members of the White House staff in advancing policies that most of us reject.

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Is Greenhouse Effect in Ice of the Beholder?

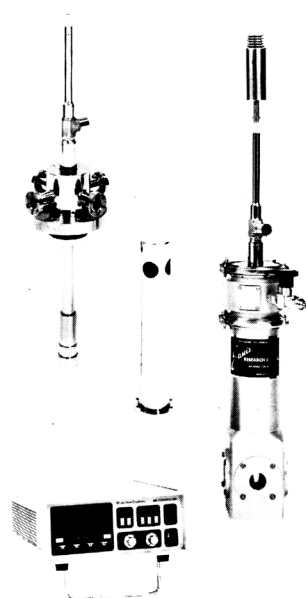
Raphael Kazmann (July 1990, page 13) writes that we should not bet our scarce resources on theories predicting a rise in sea level from global warming, because some glaciers are advancing today. If Kazmann had a clearer picture of the situation, he might be less sanguine. On average, mountain glaciers are melting and contributing to a sea-level rise today.¹ We do not know whether the ice sheets of Antarctica are growing or shrinking. Portions of the ice sheet in central Greenland do seem to be thickening,² but possibly because of an odd dynamic situation rather than recent climatic effects.³ (Ice-age ice in Greenland has lower viscosity than recent ice, probably because ice-age ice contains more windblown impurities. As recent ice progressively replaces the ice-age ice, the average

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