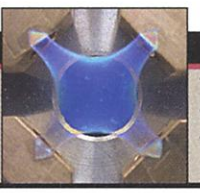
PAGE 1467
Gumming up the cell's garbage disposer



1468
The amazing flexible, tunable laser

U.S. ENERGY POLICY

Administration's Energy Plan Is Short on Scientific Details

Researchers hoping for a power surge from the Bush Administration's new energy policy got barely a jolt when the White House released its much-anticipated report last week. Although the high-profile statement declares that scientific and technological breakthroughs are essential for stable U.S. energy supplies, it says little about which fields should be emphasized or how much money they should get. And even some of its specific recommendations, such as funding renewable energy research with revenue from opening a wildlife refuge to drilling, are unlikely to win approval in Congress.

"The 'music' in this report is right on key," says House Science Committee chair Sherwood Boehlert (R–NY), who applauded the tone of the report. "But the 'words' are still sometimes vague or dissonant."

The 170-page plan* was written by a task force led by Vice President Dick Cheney. It makes more than 100 recommendations for preventing future shortages, from allowing drilling in Alaska's Arctic National Wildlife Refuge and building new nuclear power plants to giving tax breaks to consumers who buy energy-efficient cars and homes. Critics say the plan favors developing new energy supplies over promoting energy-saving strategies and gives short shrift to environmental concerns. "It's heavily biased in favor of the most polluting fossil fuels: coal and oil," charges the Natural Resources Defense Council, an environmental group with headquarters in New York City. And it is a "disastrous development" for international efforts to reduce emissions of greenhouse gases, adds Jan Pronk, head of the United Nations forum on climate change.

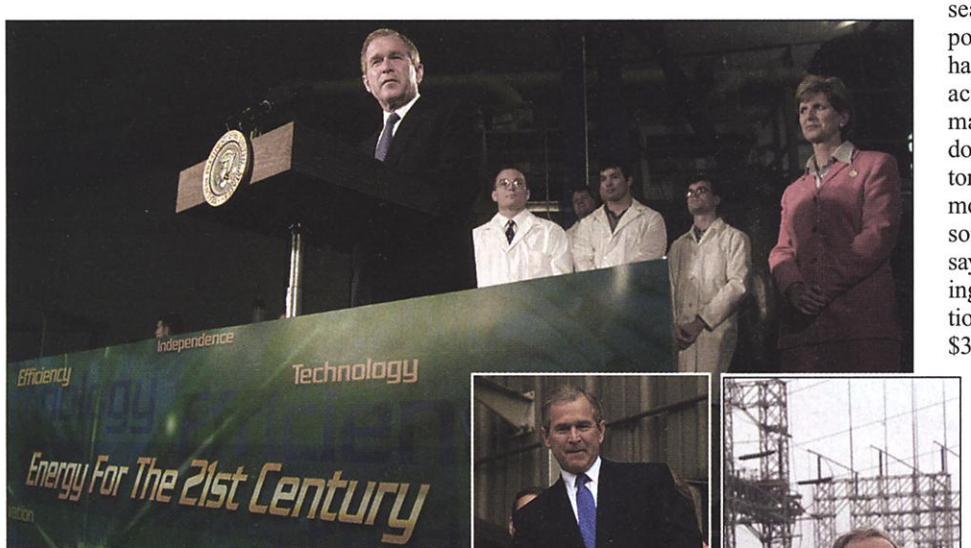
The report also sidesteps some tough political issues. For example, it promises only to "continue to study the science" behind whether to build a nuclear waste repository beneath Nevada's Yucca Mountain.

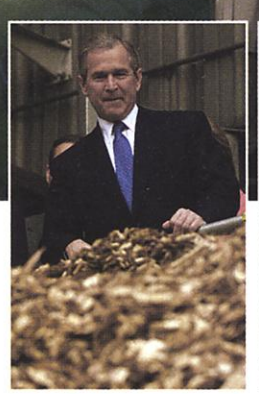
The Cheney task force has been tight-lipped about whom it consulted, and some researchers say it didn't seek enough technical advice. The strategy "lacks any serious science and technology perspective," says physicist Ernest Moniz of the Massachusetts Institute of Technology (MIT) in Cambridge, the top scientist and third-ranking Department of Energy (DOE) official in the Clinton Administration. "This is a well-intentioned slapdash job," adds MIT chemist John Deutch, who led the Central Intelligence Agency under Clinton.

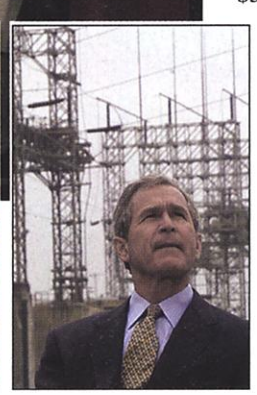
Still, scientists are savoring a few tidbits. Fusion researchers are happy about language that encourages continued funding for studies of building devices that—like the sun—can fuse atoms to produce more energy than they consume. Nuclear energy researchers hope that a call to boost fission power might revive their discipline, which has seen academic interest and research reactors dwindle over the past decade. And materials scientists are cheered by an endorsement of efforts to create superconductors, materials that allow wires to carry far more current with less loss. "I'm glad that someone had the foresight to include us," says Dean Peterson, head of a superconducting research center at the Los Alamos National Laboratory in New Mexico, part of a $37 million DOE program.

The Cheney report, however, is silent on future funding for such programs. Instead, it directs Secretary of Energy Spencer Abraham to conduct a series of reviews and make recommendations to the White House. DOE officials dismissed speculation that the White House might use the strategy's release to shore up the president's stingy 2002 budget request for DOE research, which included cutting some nuclear and renewable energy research programs by up to 30%.

Even some of the plan's more specific recommendations have been greeted with skepticism. Renewable energy advocates, for instance, predict that Congress will block a plan to generate more than $1 billion over the next decade for renewables research by selling drilling leases in the Arctic refuge. And although Congress is likely to be friendlier to a proposed $2 billion expenditure over the next decade on "clean coal" technologies, which seek nonpolluting ways to burn coal,







Energy to burn. President Bush traveled to three states last week to tout his new energy policy. In Iowa (*top*), he spoke at a biomass conversion lab; in Minnesota (*right*), at a power plant fueled in part by wood chips; and in Pennsylvania (*far right*), at a hydroelectric station that leaves room for spawning fish.

CREDITS: (LEFT TO RIGHT) RON EDMONDS/AP; RON EDMONDS/AP; RICK BOWMER/AP

*www.whitehouse.gov/energy

Boehlert says they "need just as much reevaluation as do the alternative energy R&D programs the policy seems to distrust."

Researchers are puzzled by other recommendations. One asks the President's Council of Advisors on Science and Technology (PCAST) to "make recommendations on using the nation's energy resources more efficiently." But plasma physicist John Holdren of Harvard University notes that he chaired a seemingly identical 1997 PCAST effort. "It's not clear to me [whether] the task force was aware of our results," says Holdren, who had no contact with Cheney's team. "I don't know if it makes sense to do it again."

The energy report's lack of scientific perspective, Holdren says, highlights the new Administration's failure to connect with the technical community. But Congress may be more receptive to researchers' advice when it starts to translate the strategy's sketchy outline into legislation. In the Senate, for instance, a bipartisan group—including Pete Domenici (R–NM), Jeff Bingaman (D–NM), and Joe Lieberman (D–CT)—has already suggested boosting DOE's renewable research programs. Last week House Democrats released their own energy strategy. It calls for doubling the DOE's science budget over 5 years and creating a "science czar" to ensure that the best science guides any overall energy road map.

–DAVID MALAKOFF

With reporting by Andrew Lawler.

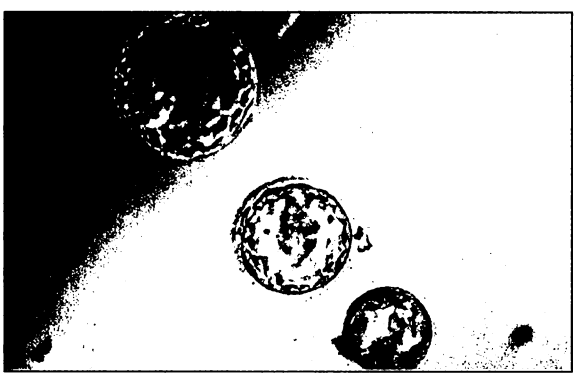
EMBRYONIC STEM CELLS

Court Asked to Declare NIH Guidelines Legal

Seven prominent stem cell scientists, together with three patients, have filed suit against the U.S. Department of Health and Human Services (HHS) and the National Institutes of Health (NIH). They are charging that the Bush Administration's failure to fund work on human pluripotent stem cells is causing "irreparable harm" by delaying potential therapies.

Last August, NIH issued guidelines to govern federal funding of work on human pluripotent stem cells (HPSCs) (*Science*, 1 September 2000, p. 1442). The move paved the way for NIH-funded scientists to conduct research that can now be done in the United States only with private funds. But it ignited a controversy because the cells—which in theory could be coaxed to become any cell type in the body—are derived from human embryos or fetal tissue obtained from elective abortions. In February, the new Bush Administration asked HHS Secretary Tommy Thompson to review the guidelines; Thompson in turn told NIH to put its process for implementing them on hold (*Science*, 20 April, p. 415).

On 8 May, the scientists, who work with HPSCs using private funding, joined forces with actor Christopher Reeve (paralyzed by a spinal cord injury), Parkinson's disease advocate James Cordy (who suffers from the disease), and Chicago business executive James Tyree (who has type I diabetes). In their complaint they ask the U.S. District Court for the District of Columbia to declare that the NIH guidelines are legal and to compel NIH to fund research on the cells. The plaintiffs include James Thomson of the University of Wisconsin, Madison, who first isolated HPSCs from embryos, and John Gearhart of Johns Hopkins University, who isolated HPSCs from fetal tissue. It also includes the three researchers who have asked NIH to certify that cell lines they have derived meet the guidelines, a prerequisite for their use by other federally funded researchers. They are Roger Pedersen of the University of California, San Francisco, and Alan Trounson and Martin Pera of Monash Medical Center in Melbourne, Australia. Stem cell researchers Dan Kaufman of the University of Wisconsin, Madison, and Douglas Melton of Harvard University are also listed as plaintiffs.



In dispute. Suit seeks implementation of guidelines that would permit U.S. government funds to be used for research on pluripotent stem cells derived from human blastocysts (*above*).

In the 22-page complaint, the plaintiffs argue that by halting NIH's review process, HHS is failing in its "statutory duty to fund scientifically meritorious research projects." They note that the 1993 NIH Revitalization Act specifically bars the executive branch from blocking funding for research on transplanting fetal tissue; they also argue that embryonic stem cell lines, as opposed to embryos, are fetal tissue. The review is causing irreparable harm by "delaying research using HPSCs ... by restricting collegial sharing of cell lines with other scientists, and by discouraging talented young researchers from joining their labs or entering the field of HPSC research," the plaintiffs assert. The patients charge that the HHS review is "preventing or delaying the development of potential treatments" for conditions such as paralysis, Parkinson's disease, and diabetes.

This is not the first time the issue has been in the courts. Nightlight Christian Adoptions, an agency that arranges adoptions of extra human embryos created as a part of fertility treatments, filed suit on 8 March to block the NIH guidelines. That suit was put on hold when Thompson asked NIH to suspend its review process.

The government has 60 days to respond to the complaint, says Jeffrey Martin of Shea & Gardner in Washington, D.C., who is representing the plaintiffs pro bono. "Much of the conversation about legal arguments was one-sided until we filed our case," says Martin. He hopes the arguments in the suit will help persuade the Administration to allow the guidelines to proceed. **–GRETCHEN VOGEL**

U.S. SCIENCE EDUCATION

Lawmakers Vie to Shape NSF Program

Congress abhors a vacuum. So this spring, after President Bush proposed a $200-million-a-year science and math education program to be run by the National Science Foundation (NSF) but offered scant details (*Science*, 13 April, p. 182), legislators jumped at the chance to influence one of the hottest political debates of the year. The result is a slew of bills that would flesh out Bush's sketchy plan to forge partnerships between university researchers and local school districts. Chances appear good that one or more of them will be adopted this year, although funding levels remain up in the air.

Making the biggest splash is a plan intro-