SCIENCE AND THE NEW CONGRESS

Walker Bill to Boost Hydrogen Sparks Democratic Grumbling

Representative Robert Walker (R–PA), chair of the House Science Committee, believes strongly that the free market—not government bureaucrats—should decide which technologies should succeed. Indeed, he hopes to kill joint government-industry projects that the Clinton Administration has been pushing as part of its effort to stimulate the economy and move technologies to the market more quickly. Yet last week, Walker introduced a bill that seems to follow the very prescription he dislikes. The measure would step up government spending on research into hydrogen and demonstrate its potential as an alternative transportation fuel.

RICK KOZAK

Committee pals. Walker, right, confers with Brown at a recent hearing.

This is not a new interest of Walker's. He has championed similar legislation in the past, and has long preached the virtues of hydrogen as a clean and infinitely renewable source of energy. But now that Walker is in a position of authority over a broad range of government R&D programs, his apparent inconsistency is raising grumbles among Administration officials and Democrats in Congress. "The bill is full of demonstration projects one would think transgress the ideological lines he draws elsewhere," complains one Energy Department (DOE) official, who says it's an example of politics winning out over principles. The reason: Walker represents a district adjacent to the world's biggest commercial producer of hydrogen, Air Products and Chemicals Inc., a $3.5 billion company that contributes regularly to his re-election campaigns, has a plant in his district, and lobbies for federal funds to pursue hydrogen research.

Walker scoffs at the notion that his bill, H.R. 655, contradicts his philosophy or is designed to benefit his district. "Hydrogen has been frozen out by the department," he says, and the legislation "is a specific mandate to ensure hydrogen gets appropriate treatment." And some of his Democratic colleagues don't question his sincerity. "He's really interested in this," says Representative George Brown (D–CA), the panel's ranking minority member. "The fact that he has a hydrogen-producer in his district is just icing on the cake."

Indeed, Brown welcomes the legislation. "I'm very glad Mr. Walker is willing to compromise on his scruples to do this," he told *Science*. "It's a shame he is not willing to do it in other areas." That's a wry reference to Walker's push to dismantle programs at the National Institute of Standards and Technology, for example, that promote government-industry partnerships.

Walker says his bill addresses the fact that hydrogen power research is a poor cousin among fuel alternatives. While solar research won $240 million for 1995, hydrogen got $10 million within DOE's office of energy efficiency and renewable energy. (Other DOE offices support an additional $30 million in research.) Even geothermal research received almost three times as much.

The bill would authorize the renewable-energy office alone to spend $40 million on hydrogen research by 1998; it also specifies how much should be spent on production, storage, and transportation research as well as on development of at least one economically feasible demonstration motor vehicle powered, at least in part, by hydrogen. Private companies would be expected to contribute, but DOE could waive that requirement.

BILL VARIE/AIR PRODUCTS

Soaring hopes. Pennsylvania's Air Products is world's leading hydrogen producer.

Observers say the bill stands a good chance of passage, helped out by Walker's influential standing in the Republican majority. A similar measure he backed last year passed the House with bipartisan support, but died when the Senate failed to act. This year's bill is different in one respect: Bowing to the Republican promise to trim the budget deficit, it would freeze DOE's total budget for energy supply research and development, forcing cuts in other areas.

If hydrogen funding gets a boost, it will be welcome news for companies like Air Products. According to company documents, Air Products has an internal task force charged, among other tasks, with "seeking government funding for hydrogen research and development and demonstration projects."

Air Products' headquarters are in Allentown, near Walker's predominantly rural district; the company also operates a 75-person liquid nitrogen, oxygen, and argon plant in Lancaster, the main city in his district. According to the Federal Election Commission, Air Products' political action committee donated $1000 each to Walker's 1992 and 1994 campaigns. Walker says he has not spoken with anyone from Air Products for months, and that the Lancaster plant wouldn't benefit directly from his bill because it is not a research facility.

It could be a long-term boon to Air Products as a whole, however. The company is researching a fuel blend of hydrogen and methane called Hythane and is also a subcontractor to Ford on a DOE study of hydrogen infrastructure. Using hydrogen as a commercial fuel is no simple matter; it is expensive to produce, compress, and store, and its current use is limited mainly to specialized chemical applications and rocket fuel. The element can be isolated in many ways. Breaking down natural gas or using electrolysis are the cheapest methods; culling it from biomass also shows promise.

Storing and transporting hydrogen—which must be highly compressed to be usable—also pose major technical challenges, according to a 1993 DOE study. And much work remains to be done on fuel cells, which combine hydrogen and oxygen to produce a chemical reaction generating only heat and water. The process has been used for years on space flights, but manufacturing fuel cells remains costly. A less ambitious alternative is to mix hydrogen with other fuels in an internal combustion engine, lessening noxious emissions.

For the small community of researchers working in the hydrogen field, Walker's patronage offers hope at a time when DOE has promised to cut billions from its budget in the next 5 years. "If we are going to talk about fundamentally changing our energy system, we need a strong commitment from the public sector," says Robert Williams, a Princeton University energy researcher. And Walker, despite his opposition to industrial policy, is working hard to deliver that commitment.

–Andrew Lawler