groundwater in such areas, arsenic release can be triggered." He has observed a similar pattern in Vietnam.

Elsewhere in Bangladesh, however, other factors appear to be more important in releasing arsenic than irrigation pumping. Geochemist Alexander van Geen of the Lamont-Doherty Earth Observatory in Palisades, New York, and his colleagues have found high levels of arsenic in water that's more than 40 years old, suggesting that irrigation pumping hasn't been involved. And arsenic contamination is less of a problem in the northwestern part of the country, where much farm water is pumped, adds John MacArthur of UCL. Harvey chalks up the inconsistencies to different sediment chemistry and says that his study area in Munshiganj is typical of southern Bangladesh: "I see no reason why the same process can't happen in other places."

Arsenic levels at the study site begin to pass muster at about 160 meters, which suggests that deeper wells could reduce the arsenic problem. But that's an expensive option in one of the poorest countries in the world. Other near-term strategies include developing filtration techniques and trying to persuade villagers to switch to more distant shallow wells that are still safe.

–ERIK STOKSTAD

ENERGY RESEARCH

Industry Invests Big in Stanford Project

An international consortium of energy companies intends to pump up to $225 million over the next decade into a climate change and energy project led by Stanford University in Palo Alto, California. Researchers say they are stunned by the size and scope of the effort to study ways to reduce global warming, which will examine everything from carbon sequestration to the economics of substituting hydrogen fuel for oil, coal, and natural gas. "This is one of the grand challenges of the century," says Lynn Orr, a petroleum engineer at Stanford, who will lead the project.

Although energy companies have long funded academic research programs, the scale and structure of the effort are unprecedented. Stanford and industry officials say that the data derived from the effort will be publicly available and that an independent advisory board will help chart the project's direction. "Absolutely nothing is off the table; we want all areas addressed," says Frank Sprow, vice president for safety, health, and environment at ExxonMobil, which will provide the single largest chunk of funding. Even skeptics of industry welcome a broad research effort. "This is an acknowledgement that global warming is a problem they can no longer ignore," says Dan Lashof of the Natural Resources Defense Council in Washington, D.C.

ExxonMobil will contribute $100 million to the project, and General Electric and E.ON, an energy provider based in Düsseldorf, Germany, will provide $50 million each. Schlumberger, a global oil-drilling equipment company, will pitch in $25 million. University officials will be in charge of handing out $20 million during the project's first 3 years, roughly half to Stanford researchers and the remainder primarily to other academic scientists; company researchers are not eligible. The university will hold title to any patents, although the funding sponsors will have a short period to negotiate licenses before the discoveries are up for grabs. The first funding likely won't begin flowing until the end of next year.

The project grew out of discussions between Stanford and Schlumberger about geological sequestration, or the injecting of carbon into the ground to prevent its release in the atmosphere. "This could be a big operation, potentially almost the same size as the oil industry today," says Philippe Lacour-Gayet, a physicist and chief scientist at the Schlumber-Doll Research division of Schlumberger. The project's scope grew as other corporations became involved.

Orr says that the scientific and engineering agenda has yet to be finalized but that the focus will be on ways to lower greenhouse emissions in the short run while exploring how to convert the world's energy system to less polluting fuels and technologies. That includes cheaper methods of generating hydrogen, more efficient burning of hydrocarbons, and other alternatives ranging from solar to fusion energy.

Companies were attracted to Stanford because of its strengths in earth sciences and engineering and its tradition of interdisciplinary work, say industry representatives. Outside energy experts add that the university's stature should ease fears that the project will be tilted toward a hydrocarbon-biased approach. "If you wanted to buy a university to do your bidding, you wouldn't pick Stanford," says John Holdren, an environmental science and policy professor at Harvard University. Orr agrees: "We will never give up the right to decide what we work on. We're not at all concerned about undue influence."

ExxonMobil managers say they hope the research lessons can be applied to developing as well as developed countries. But Sprow adds that the project doesn't mean oil has no future. "This is a terrific opportunity to see if oil can be used in a way that's more benign," he says. Whatever turns up, Sprow and his consortium colleagues are betting big bucks that the research will help them cope with changes in their business as well as in the global environment.

–ANDREW LAWLER

CREDIT: BILL ROSS/CORBIS

Clearing the air? An oil-industry consortium hopes Stanford research on ameliorating global warming will also stimulate the next generation of energy production.

NATIONAL SCIENCE FOUNDATION

Congress OK's Budget Doubling, At Last

Some straightforward political horse-trading paved the way for the National Science Foundation (NSF) to achieve one of its most cherished goals last week: a congressional promise to double the agency's budget in 5 years.

Science lobbyists have spent years arguing that the recent ramp-up for the National Institutes of Health should be balanced by a similar boost for NSF. Last month Congress appeared ready to sign off on the idea as part of a reauthorization of NSF's programs, but then Senator Jon Kyl (R–AZ) applied a last-minute hold on the bill as it was about to go before the full Senate (*Science*, 25 October, p. 719). The real objection, however, came from the White House Office of Management and Budget (OMB), which felt that doubling was a crude budgeting tool and clashed with its efforts to hold down domestic spending. The parliamentary maneuver infuriated Senate Democrats, who complained that they had been blind-sided.

But House members who had passed a similar bill in June didn't give up. They spoke with OMB officials, who quickly offered a compromise: a 5-year bill that made the last 2 years contingent on a review by OMB of NSF's progress in meeting a series of management goals that are part of a presidential good-