

# Wrong Ends, Means, And Needs: Behind the U.S. Nuclear Deal With India

**P**resident George W. Bush and Indian Prime Minister Manmohan Singh issued a joint statement on July 18, 2005, laying the grounds for the resumption of U.S. and international nuclear aid to India. Such international support was key to India developing its nuclear infrastructure and capabilities and was essentially stopped after India's 1974 nuclear weapons test. India's subsequent refusal to give up its nuclear weapons and sign the nuclear Nonproliferation Treaty (NPT) has kept it largely outside the system of regulated transfer, trade, and monitoring of nuclear technology that has been developed over the last three decades.

The July agreement requires the United States to amend its own laws and policies on nuclear technology transfer and to work for changes in international controls on the supply of nuclear fuel and technology so as to allow "full civil nuclear energy coopera-

tion and trade with India." In exchange, India's government would identify and separate civilian nuclear facilities and programs from its nuclear weapons complex and volunteer these civilian facilities for International Atomic Energy Agency (IAEA)

inspection and safeguarding. Yet, as they consider the deal and ways to transform its broad framework into legal realities, political elites in each country have ignored some crucial issues.

Policy-makers in the United States have debated the wisdom of the deal.<sup>1</sup> This debate has been rather narrow, confined to proliferation policy experts and a few interested members of Congress, and largely focused on the lack of specific details with regard to the deal, the order of the various steps to be taken by the respective governments, and the potential consequences for U.S. nonproliferation policy.<sup>2</sup> The larger policy context of a long-standing effort to co-opt India as a U.S. client and so sustain and strengthen U.S. power, especially with regard to China, has gone unchallenged. There is also little recognition of how the agreement could allow India to expand its nuclear arsenal.

The deal has incited a wider and more intense debate in India on questions of national security, sovereignty, development, and democracy. Some would like to see as few constraints as possible on increasing the future capacity of India's nuclear weapons complex, and others question the extent to which nuclear energy can help meet India's

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Alex Wong/Getty Images

**Indian Prime Minister Manmohan Singh and President George W. Bush's three-day meeting in July produced a joint declaration between the United States and India establishing a global strategic partnership, which includes increased nuclear energy cooperation.**

energy needs. Despite the many claims that the social, economic, and political well-being of the people of India will be enhanced by this deal, there has been little attention paid to the issue of whether India needs nuclear weapons at all, the costly failures of the Indian nuclear energy enterprise, and the possible harm for the people of India from a continued expansion of the nuclear complex.

### Misplaced U.S. Goals

The nuclear deal has to be seen in the context of efforts over the last 50 years to incorporate India into U.S. strategy in Asia. After the Chinese revolution, the United States came quickly to believe that newly independent India was the only potential regional power that could compete with China for dominance in Southeast Asia. Despite repeated U.S. efforts to use economic and military aid to promote this policy, India's first prime minister, Jawaharlal Nehru, refused to have his country play this role. He said that a free India would not be a pawn for great powers, and warned that this kind of alliance building by great powers was bad for international relations and could lead to war.<sup>3</sup>

Still, U.S. hostility toward Communist China led to some extraordinary ideas about nuclear cooperation. In the wake of China's first nuclear weapons test in 1964, senior officials in the Department of State and the Pentagon considered the possibilities of "providing nuclear weapons under U.S. custody" to India and preparing Indian forces to use them. At the same time, the U.S. Atomic Energy Commission was considering helping India with "peaceful nuclear explosions," which would involve the use of U.S. nuclear devices under U.S. control being exploded in India.<sup>4</sup> These plans were dropped amid growing fears of the consequences of proliferation for U.S. military and diplomatic power, and the United States turned instead to preventing the further spread of nuclear weapons.

The end of the Cold War prompted a rethinking of strategic possibilities and a now infamous 1992 draft Defense Planning Guidance prepared for then-Secretary of Defense Dick Cheney, which declared that "[o]ur first objective is to prevent the re-emergence of a new rival. This is a dominant consideration underlying the new regional defense strategy." It noted,

"We must maintain the mechanisms for deterring potential competitors from even aspiring to a larger regional or global role."<sup>5</sup> In other words, the geopolitical order was to be frozen as it then was, with the United States assured of maintaining its relative superiority in the different regions of the world. A key concern was China.

The first dramatic change in Indo-U.S. relations came during a March 2000 visit by President Bill Clinton to India, less than two years after the 1998 nuclear tests. The governing coalition then was dominated by the Hindu nationalist Bharatiya Janata Party (BJP), whose views are strongly anti-Communist, aggressively pro-nuclear weapons, and opposed to the more traditional strategy of nonalignment. The joint statement issued by the two leaders declared that "India and the United States will be partners in peace, with a common interest in and complementary responsibility for ensuring regional and international security. We will engage in regular consultations on and work together for strategic stability in Asia and beyond."

Further developing the idea of the United States and India as strategic partners in managing regional and international security, the

"Next Steps in Strategic Partnership," signed in January 2004, announced that the United States would help India with its civilian space programs, high-technology trade, missile defense aid, and civilian nuclear activities. The subsequent nuclear deal is but one of the building blocks promised in this larger arrangement. The purpose of the 2004 accord was made clear by a U.S. official who said the "goal is to help India become a major world power in the 21st century.... We understand fully the implications, including military implications, of that statement."<sup>6</sup>

These implications became clearer with the U.S.-India Defense Relationship Agreement of June 28, 2005. The thinking behind this agreement was explained by Robert Blackwill, who served in the first George W. Bush administration as U.S. ambassador to India and then as deputy national security adviser for strategic planning. In a rhetorical question, Blackwill asked, "Why should the U.S. want to check India's missile capability in ways that could lead to China's permanent nuclear dominance over democratic India?"<sup>7</sup> Less than a month later, the nuclear deal was announced.

Recruiting India may help reduce the immediate costs to the United States of exercising its military, political, and economic power to limit the growth of China as a possible rival. More generally, the United States sees Asia as central to global politics after the demise of the Soviet Union, and it needs strong regional clients there. The search for allies and friends is all the more important at a time when the United States is isolated because of its invasion and occupation of Iraq. On all these counts, India is seen as a major prize, and support for its military buildup and its nuclear complex seems to be the price the Bush administration is willing to pay.

This goal is, it seems, to be pursued regardless of how it will spur the spiral of distrust, political tension, and dangerous, costly, and wasteful military preparedness between the United States and China, between China and India, and between India and Pakistan. This last dynamic is already coming into view, as Pakistan has demanded from the United States (and been refused) the same deal as is being offered to India, and China wants any exemptions for international nuclear cooperation and trade to be offered not only to India but to be open to others, i.e., its ally, Pakistan.<sup>8</sup> In all these

countries, containing about one in three people on the planet, many of whom are very poor, this will amount to a tragic distortion of values and priorities.

### **An Errant Debate in India**

Although the nuclear deal has incited a limited policy debate in the United States, it has become a key concern in Indian domestic politics and has elicited three broad positions. First, there are the nuclear hawks who oppose the deal. They see the nuclear energy and nuclear weapons programs as one more or less integrated complex. They see the deal, particularly the proposed separation of civilian and nuclear facilities, as imposing constraints that would make more difficult the creation of a large nuclear arsenal, which they believe is essential for India to be a "great power." The clearest expression of this view has come from former Prime Minister Atal Behari Vajpayee and others in the BJP.

Vajpayee has argued that "[s]eparating the civilian from the military would be very difficult, if not impossible.... It will also deny us any flexibility in determining the size of our nuclear deterrent." The "flexibility" he desires is the ability to use what may be classified as civilian facilities to increase the pace at which the nuclear weapons program could grow, as well as its eventual size. Similar sentiments have also been voiced by some retired officials from the nuclear complex.

The second position is that of Singh and many other leaders of the Congress Party, which heads the coalition currently governing India. They see the deal as offering recognition of India as a nuclear-weapon state, pointing out that the joint statement says India will have "the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States." More practically, they see it as a way to sustain and expand the nuclear energy program while not restricting the building of what they describe as a "minimum" nuclear weapons arsenal. Even though Indian nuclear strategists and policymakers have never defined the term "minimum," it is used to suggest that India is being restrained in its nuclear ambitions. At the same time, it is made clear that the minimum could increase, depending on circumstances.

Singh explained to the Indian parliament on July 29, 2005, that the deal offers a way whereby "our indigenous nuclear power

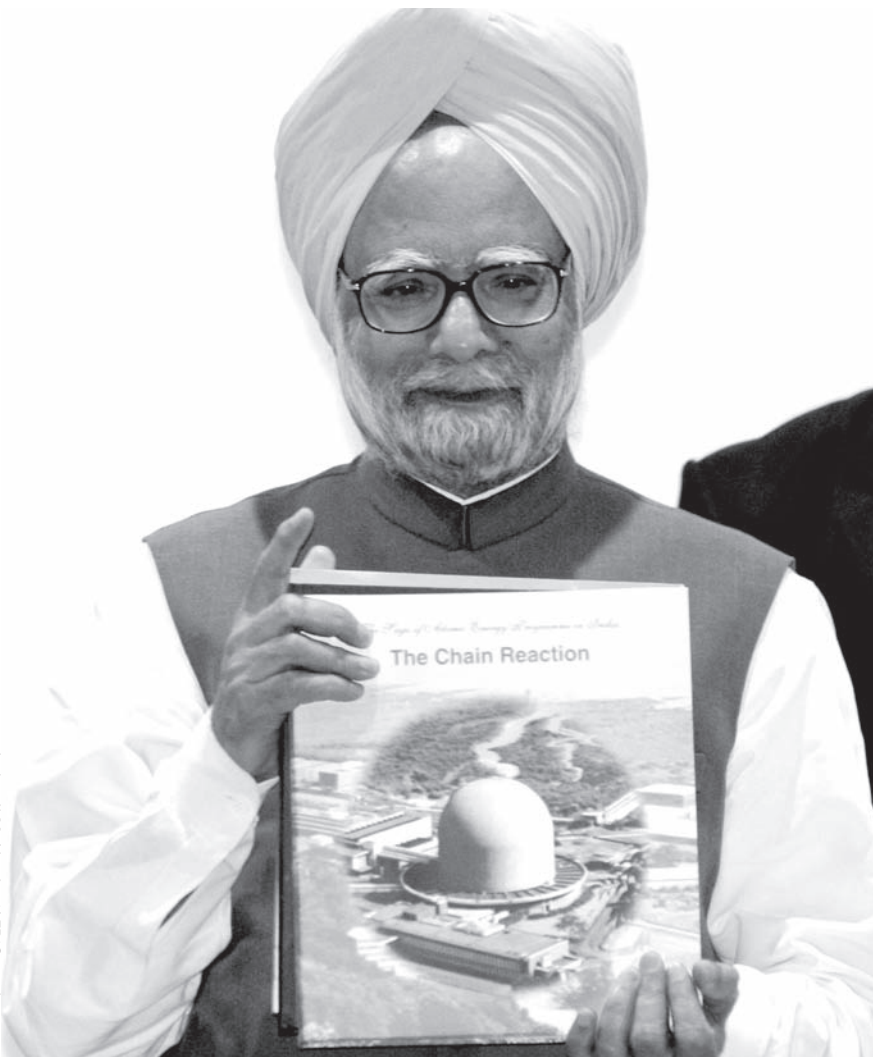
program based on domestic resources and national technological capabilities would continue to grow," with the expected international supply of nuclear fuel, technology, and reactors serving to "enhance nuclear power production rapidly." At the same time, he made it clear that "there is nothing in the joint statement that amounts to limiting or inhibiting our strategic nuclear weapons program." As an assurance that India would have the final say in implementing the deal, the prime minister announced that, "before voluntarily placing our civilian facilities under IAEA safeguards, we will ensure that all restrictions on India have been lifted."

A different source of opposition to the deal comes from India's left-wing parties, which otherwise support the Congress-led government. These parties have traditionally supported the nuclear energy program, but they opposed the 1998 nuclear weapons test and have pressed for India to play a larger role in global disarmament efforts and to do more to reduce nuclear dangers in the region. Their greatest concern is that the deal ties India too closely to U.S. policies. India's Communist Party leader, Prabodh Panda, said in parliament that the recently concluded agreements with Washington served to reduce India to a "junior partner of the U.S. in fulfilling its global ambitions." As the first sign of India surrendering its traditional nonalignment and role in representing the Third World, they cite the Indian government's surprising vote for a U.S.-led resolution against Iran at the September 2005 IAEA Board of Governors meeting, something key U.S. lawmakers and officials had made clear was tied to the nuclear deal.<sup>9</sup>

These positions, which have by and large dominated the debate so far, have many flaws. The first is their shared belief in the success of India's nuclear energy program and the need to continue with and expand this effort. This fails to recognize that the deal, in fact, marks U.S. acceptance of a long-standing Indian demand for lifting international restrictions on nuclear cooperation and that this demand is itself testament to the failures of the Department of Atomic Energy.

The second problem is the belief shared by the hawks and the government that nuclear weapons are a source of security. They ignore the essential moral, legal, and criminal questions of what it means to have and be prepared to use nuclear weapons.





**Indian Prime Minister Manmohan Singh released a three part chronological history of India's nuclear power program at the Bhabha Atomic Research Centre in November. Contrary to Department of Atomic Energy predictions that nuclear energy would generate as much as 43,500 megawatts of electricity by 2000, it only produces 3,300 megawatts today, barely 3 percent of India's installed electrical capacity.**

The only difference between these two camps is on the character and number of the nuclear weapons to which they aspire and how many people in how many cities they are prepared to threaten to kill. The left-wing parties are more ambiguous; they support disarmament but have not called for India unilaterally to give up its nuclear weapons arsenals and ambitions. Some of them even feel Indian nuclear weapons may be needed to hedge against a more belligerent U.S. exercise of power and influence.

Standing outside the political parties is a broad network of social movements in India that have become an increasingly important element in its political life. The most prominent of these, the National Alliance of Peoples Movements, an umbrella group of several hundred organizations and campaigns that support the rights of

the poor, women, minorities, farmers, and workers, has come out against the deal because they see it as having been concluded without any public debate; as strengthening an unaccountable, dangerous, and costly Indian nuclear energy and nuclear weapons program; and as undermining important nuclear nonproliferation and disarmament goals.<sup>10</sup>

### Nuclear Energy Failures

On the Indian side, a primary motivation for the deal has been the history of failure of its Department of Atomic Energy to produce large quantities of nuclear electricity. In 1962, Homi Bhabha, the founder of India's nuclear program, predicted that by 1987 nuclear energy would constitute 20,000-25,000 megawatts of installed electricity-generation capacity.<sup>11</sup> His successor as head of the Department of Atomic

Energy, Vikram Sarabhai, predicted that by 2000 there would be 43,500 megawatts of nuclear power.<sup>12</sup> Neither of these predictions came true.

Despite more than 50 years of generous funding, nuclear power currently amounts to only 3,300 megawatts, barely 3 percent of India's installed electricity capacity. Indian nuclear capacity is expected to rise by nearly 50 percent over the next few years, largely because of two 1,000-megawatt reactors purchased from the Soviet Union in a 1988 deal and now being built by Russia. Even if more such deals were to be made in the future, it is by no means clear that India's nuclear establishment will be able to keep its promises, let alone contribute a significant fraction of projected electricity demand.

Another of the Department of Atomic Energy's failures has been in ensuring sufficient supplies of uranium to fuel its nuclear reactors. As an Indian official stated in an interview to the British Broadcasting Corp., "The truth is we were desperate. We have nuclear fuel to last only till the end of 2006. If this agreement had not come through, we might have as well closed down our nuclear reactors and by extension our nuclear program."<sup>13</sup> This is not a new crisis; the former head of the atomic energy regulatory board has reported that "uranium shortage" has been "a major problem...for some time."<sup>14</sup>

India has been unable to import uranium for its unsafeguarded nuclear reactors because of the rules of the 44-member Nuclear Suppliers Group (NSG), the countries that manage international nuclear trade with a view to preventing proliferation. Apart from two very old imported U.S. reactors, India relies on natural uranium-fueled nuclear reactors, which are based on the two Canadian-designed and -built pressurized heavy-water reactors it acquired in the 1960s. The total electric capacity of these reactors is 2,990 megawatts. At 75 percent capacity, these require nearly 400 tons of uranium every year. The plutonium production reactors, CIRUS and Dhruva, which are earmarked for nuclear weapons purposes, consume perhaps another 30-35 tons annually. We estimate that current uranium production within India is less than 300 tons of uranium a year, well short of the fuel requirements.

The Department of Atomic Energy has been able to continue to operate its reactors by using uranium stockpiled from

when its nuclear capacity and thus its fuel needs were much smaller. Our estimates are that, without the nuclear deal, this stockpile would be exhausted by 2007. The department's desperate efforts to open new uranium mines in the country have met with stiff resistance, primarily because of the health impacts of uranium mining and milling on the communities around existing mines.<sup>15</sup>

For decades, the department has offered the potential shortage of domestic uranium as justification for a plutonium fast-breeder reactor program, which has involved costly and hazardous reprocessing facilities to recover plutonium from spent nuclear fuel. Its efforts to build a breeder, however, have not made much progress: the Fast Breeder Test Reactor started functioning in 1985 and has been plagued with problems while the Prototype Fast Breeder Reactor is not expected to be completed until 2010 if all goes accordingly to plan. Poor economics and safety and engineering problems have effectively killed such breeder reactor programs in the United States, France, and Germany, but India may choose to try to follow the example

of Japan and proceed with its program, ignoring both the costs and risks of reprocessing and the many problems with breeder reactors.

The dismal state of India's nuclear energy complex, despite 50 years of determined government support and funding, may offer the clearest proof yet of one of the basic assumptions underlying the NPT. The treaty recognized that developing countries would need a great deal of help if they were to establish nuclear energy for peaceful purposes successfully. That is why Article IV of the treaty calls for a trade-off: providing non-nuclear-weapon states with access to international cooperation with nuclear energy in return for a demonstrated commitment not to develop nuclear weapons. In refusing to sign the NPT and in developing nuclear weapons, India had until now sacrificed the benefits of this international support. Now, through the nuclear deal, the United States has promised India all the help it needs for its civilian nuclear program, all without signing the treaty or even accepting any limits on its nuclear arsenal.

## How Many Bombs Are Too Many?

In particular, the deal promises to allow India access to the international uranium market. If the deal goes through, New Delhi will be able to purchase the uranium it needs to fuel those reactors it chooses to put under IAEA safeguards. This will free up its domestic uranium for its nuclear weapons program and other military uses and would allow a significant and rapid expansion in India's nuclear arsenal. India is believed to have a stockpile of perhaps 40-50 nuclear weapons, with fissile materials stocks for many more, and plans that reportedly involve an arsenal of 300-400 weapons within a decade.<sup>16</sup> Realizing these plans will require the production of much larger quantities of fissile material and at much higher rates than India has achieved so far. Such production of fissile materials specifically for nuclear weapons is not constrained by the deal.

India could use its newly unallocated domestic uranium to meet its fissile material needs in several ways. It could choose to build a large plutonium-production reactor to add to CIRUS and Dhruva, its two weapons-grade plutonium-production reactors at the Bhabha Atomic Research centre



Dibyangshu Sarkar/AFP/Getty Images

**Indian workers examine iron rods at the construction site of the prototype fast breeder reactor at the Indira Gandhi Centre for Atomic Research in August, 2004. The reactor is scheduled for completion in 2010.**



in Bombay. CIRUS and Dhruva could continue to produce about 25-35 kilograms of weapons-grade plutonium a year. Another Dhruva-sized production reactor could yield an additional several bombs worth of such plutonium each year.

Another way in which India could increase its fissile material stockpile is to expand its small-scale centrifuge enrichment program and make highly enriched uranium (HEU) for nuclear weapons. So far, it is only believed to have enriched its domestic uranium to make fuel for the nuclear submarine that has been under development since the 1970s and has recently completed testing of its nuclear reactor.<sup>17</sup> India could make HEU both for weapons and enriched fuel

of such weapons-useable material is the plutonium in the spent fuel of the unsafeguarded Indian power reactors. Over the years, some 9,000 kilograms of reactor-grade plutonium may have been produced in these reactors, though a large fraction of this plutonium is probably still not separated from the spent fuel. Even though it has a slightly different mix of the plutonium isotopes from the weapons-grade plutonium normally used for weapons, reactor-grade plutonium can be used to make a nuclear explosive.<sup>18</sup> The United States conducted a nuclear test in 1962 using plutonium that was not of weapons grade, and one of India's May 1998 nuclear tests is reported to have involved

safeguards on the breeder program begs the question as to whether this is or ever was intended only for civilian purposes.

### Why Nuclear Electricity?

Both Indian and U.S. supporters of the deal claim that the growth of nuclear energy generation capacity in India is a practical and even a necessary way to maintain India's current rate of economic growth. The evidence suggests otherwise.

According to our estimates, the cost of producing nuclear electricity in India is more expensive than the non-nuclear alternatives.<sup>21</sup> Construction costs are high, and construction times are long, making the capital cost of a nuclear reactor very high

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for its submarine if it no longer needs to rely on domestic uranium to fuel its power reactors.

There is also the possibility, as hinted at by some hawkish critics, that India's nuclear power reactors may become part of the weapons complex. For instance, if kept out of safeguards and with sufficient uranium supplies on hand, power reactors could be used to make weapons-grade plutonium by limiting the time the fuel is irradiated. Run this way, a typical 220-megawatt pressurized heavy-water reactor could produce 150-200 kilograms per year of weapons-grade plutonium when operated at 60-80 percent capacity. This could mean as much as an eightfold increase in the existing rate of plutonium production. The penalty to be paid in terms of the increased and less efficient use of uranium would be covered by access to imported uranium to be used in other power reactors. There would no longer be a trade-off between uranium for electricity generation and weapons plutonium production.

Neither does the deal constrain how India uses the weapons-useable materials produced so far. A major source

of such material.<sup>19</sup> An estimated 8 kilograms of such plutonium are needed to make a simple nuclear weapon. If this spent fuel is not put under safeguards as part of the deal, India would have enough plutonium from this source alone for an arsenal of approximately 1,100 weapons, larger than that of all the nuclear-weapon states except the United States and Russia.

Finally, the fast-breeder reactor under construction also will be a source of plutonium. The Department of Atomic Energy has always resisted placing the breeder program under international safeguards and is doing so again when asked to do so as part of the deal. Anil Kakodkar, chairman of the Atomic Energy Commission and secretary of the Department of Atomic Energy, has said that the Prototype Fast Breeder Reactor will not be under safeguards because it is a research and development program and "any research and development programme, we are not going to put under safeguards." He has also pointed out that "only that which is clearly of no national security significance, only that part will be civilian."<sup>20</sup> The department's resistance to

when compared, for example, to coal-based thermal stations. In a country where there are multiple demands on capital for infrastructure projects, including for electricity generation, this makes nuclear power a poor economic choice.

Other considerations that go against nuclear power are the possibility of catastrophic accidents and the problem of nuclear waste. In studying the safety of nuclear reactors and other hazardous technologies, sociologists and organization theorists have come to the pessimistic conclusion that serious accidents are inevitable with such complex high-technology systems. The character of these systems makes accidents a "normal" part of their operation, regardless of the intent of their operators and other authorities. In India, as elsewhere, there have been many small accidents at nuclear facilities. Given its high population density, a nuclear reactor accident in India involving the release of large quantities of radioactive materials could cause tremendous damage. Finally, there remains the problem that no country has

resolved: the disposal of large amounts of waste that will remain radioactive for many tens of thousands of years.

The issue that really needs to be discussed but has hardly figured in the debate is whether India needs any nuclear power plants at all. There are many who believe India would be better off giving up this costly and dangerous technology and finding ways to meet the needs of its people that do not threaten their future or their environment.

A 2003 study by the Confederation of Indian Industry found that there is great scope for improving Indian energy intensity (energy consumption per unit of gross domestic product), which is high compared to other countries, and called for increased cooperation with the United States in this area. It has been estimated that Indian industry could save as much as 20-30 percent of its total energy consumption and that nearly 30,000 megawatts, i.e., more than the total planned nuclear capacity by 2020, could be saved through energy conservation programs.<sup>22</sup> This would also be cheaper than building new generating capacity, especially additional nuclear capacity. This study also noted that, in the 1999 Indo-U.S. Joint Statement on Cooperation in Energy and Related Environmental Aspects, India had declared a goal of a 10 percent share for renewable energy by 2012 and a 15 percent improvement in energy efficiency by 2008 and was seeking U.S. help to meet these targets.

The real challenge facing India is the growing divide between the energy-intensive pattern of development of its cities, with increasing demands for electricity and petroleum, and the continuing dependence on fuel-wood and animal-dung energy by the majority who live in its many villages. Nuclear energy as a large, centralized, and costly source of electricity will do little for meeting the basic energy needs of rural India because connecting these areas to a central power grid is expensive, involves high transmission losses, and is financially unsustainable. The UN Development Program's World Energy Assessment in 2000 observed that "past efforts to deliver modern energy to rural areas have often been ineffective and inefficient" and that, "above all, planning for rural energy development

should have a decentralized component and should involve rural people—the customers—in planning and decision-making."<sup>23</sup> By working with the rural poor, it may be possible at last to develop and provide the small-scale, local, sustainable, and affordable energy systems that they need.

## Conclusion

If approved by Congress and India's parliament as well as the NSG, the U.S.-Indian nuclear deal will prove costly and dangerous. It will feed a cascade of mistrust, insecurity, and instability, diverting resources to a fateful military competition that will envelop China, India, Pakistan, and the United States. More broadly, it is difficult to see the deal as anything other than a fundamental rejection of the nonproliferation regime, as it abandons the assumption that access to nuclear fuel and technology must be within the terms of the regime. It undermines the aspirations of the vast majority of nations seeking global and regional nuclear disarmament.

The deal also will create the potential for the rapid buildup of a much larger Indian nuclear arsenal. It will bail out a failing Indian nuclear energy program that has had little regard either for the economics or the environmental and health consequences of its activities. It is also likely to offer little real benefit to India's poor. It is not often that so much harm may be done to so many by so few. **ACT**

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