

Nuclear Energy Program

U.S. Leadership Essential for International Nuclear Energy Programs

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Global growth in the civilian nuclear energy sector represents an annual trade market estimated at \$500 billion to \$740 billion over the next 10 years. As

new nations consider nuclear energy technology to produce low-carbon electricity, the United States should take a leadership role that will enhance the safety and nuclear nonproliferation regimes globally, while creating tens of thousands of new American jobs.

The United States is the world leader in safe and efficient operation of nuclear power plants, with an average capacity factor of 90 percent or higher in each of the past 10 years. When ranked by 36-month unit capability factor, the United States has the top three best performing nuclear reactors in the world, seven of the top 10, and 16 of the top 20. Nuclear energy facilities produce electricity in 31 states and have attained a four-fold improvement in safety during the past 20 years. This underpinning in safety and reliability is one reason why America generates more electricity from nuclear energy than the next two largest nuclear programs combined.

Bilateral agreements on nuclear energy cooperation are vital to advancing global nonproliferation and safety goals as well as America's interests in global nuclear energy trade. A 123 agreement, named after section 123 of the Atomic Energy Act, establishes an accord for cooperation as a prerequisite for nuclear energy trade between the United States and other nations. The

agreement contains valuable nonproliferation controls and commitments.

One of the most significant elements of U.S. agreements is approval granted by our government as to how other countries process uranium fuel after it is used in a commercial reactor. Under U.S. agreements, these nations cannot reprocess the fuel—chemically separating the uranium and plutonium—without U.S. notification and consent to do so. This is a significant safeguard against the potential misuse of low-enriched uranium from the commercial sector.

Several public policy considerations must be weighed in evaluating the impact of 123 agreements, including those related to national security, economic development, energy production, and environmental protection.

In the competitive global marketplace for commercial nuclear technology, inconsistent bilateral agreements will have unintended consequences for U.S. suppliers. Imposing overly restrictive commercial restrictions or conditions in U.S. 123 agreements that are not matched by other nations' bilateral agreements may significantly bias the country against selecting U.S.-based suppliers, even if the agreements don't have malicious intentions.

The imposition of requirements that seem unnecessary and unfair can affect commercial decision-making by the affected country. Such conditions put U.S. commercial contracts and jobs at risk. Moreover, if the country does not use U.S.-based technology, fuels or services, the value of conditions in the 123 agreement (i.e., consent rights) would be lost.

Some U.S. leaders are proposing a prohibition on uranium enrichment and reprocessing as part of all bilateral nuclear energy agreements for cooperation. Ensuring enrichment technology and reprocessing technology are used only for peaceful purposes is a paramount goal for government and industry. But U.S. 123 agreements are neither the best, nor

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Fukushima and Iran: The Case for Tightening the Nuclear Rules

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Fukushima and Iran's use of civilian nuclear energy to get the bomb ought to serve as fair warnings to tighten conditions on future nuclear exports. Surely, if we fail to do so when Europe, Japan, and America have slowed new nuclear construction in reaction to Japan's nuclear meltdowns, we risk encouraging the world's hungry nuclear suppliers making up the difference with more dangerous exports to unstable regions, like the Middle East. This would not only risk nuclear competitions in the world's most war torn regions overseas, but jeopardize public support in the world's advanced economies for nuclear power's further development.

Unfortunately, under existing nuclear rules, expanding nuclear power globally also risks spreading nuclear fuel making activities. This, in turn, risks creating more Irans – i.e., more states that can get to the very brink of acquiring nuclear bombs by enriching uranium or separating plutonium from spent reactor fuel. The further expansion of these nuclear fuel making activities in India, Pakistan, and China, also risks increasing these emerging nuclear weapons states' capacity to make significantly more nuclear bombs any time they wish.

The current nuclear control wisdom is that all states have a “right” to engage in such activities so long as they claim that they are for “peaceful” purposes. Unfortunately, there is no reliable method of using nuclear inspections to assure that such fuel making won't be quickly diverted to make bombs. That's why the United States and other states through the United Nations have called on Iran to suspend its nuclear fuel making activities.

It's also why Presidents Bush and Obama, worked so hard to establish a new, tougher set of nuclear nonproliferation conditions with the United Arab Emirates (UAE) in the nuclear cooperative agreement the United States reached with the UAE in 2009. Under this deal, the UAE could not receive any

controlled nuclear goods until it forswore making nuclear fuel and ratified the Additional Protocol -- a set of tough, international nuclear inspection rules. President Obama sold this agreement arguing that it established a new non-proliferation “Gold Standard” for civilian nuclear cooperation agreements.

Now, that standard is up for grabs as the U.S. State Department is negotiating nuclear cooperative deals with Jordan, Saudi Arabia, and Vietnam. Congress would like these agreements to meet the Gold Standard. If they fail to do so, the House Committee on Foreign Affairs (HCFA) has proposed legislation that would require such agreements be approved by a majority vote in both houses.

This means that after these nuclear agreements are negotiated, it cannot be assumed, as is currently the case, that they would be approved automatically. Proponents of this legislation note that Saudi Arabia has warned that it must get nuclear weapons if Iran does so and that Jordan and Vietnam refuse to forswear making nuclear fuel and are far from being stable democracies. They insist that if these agreements fail to meet the Gold Standard, it makes sense to scrutinize them closely and put them to a vote.

The HCFA has also called for Congressional approval of new overseas efforts to separate or reprocess nuclear weapons useable plutonium from spent fuel generated from U.S.-origin fuel or U.S.-exported reactors. This would mean that reprocessing such fuel in India or China –



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Multilateral agreements are more appropriate mechanisms for policy regarding the global challenge of nuclear proliferation. Promising mechanisms include the decision by the International Atomic Energy Agency to establish a uranium fuel bank, potential nuclear fuel lease/takeback contracts, and other multilateral, institutional nonproliferation arrangements. In addition, the Nuclear Suppliers Group (an international body of 46 nuclear technology supplier nations that sets standards for commercial nuclear trade) recently adopted new clear and strict criteria for the transfer of nuclear energy technology. These institutional controls do not require the receiving country to cede sovereign rights, which the U.S. government and other countries with civilian nuclear energy programs would never give up.

Fast-growing electricity needs in developing countries and concern about air quality and climate change are

stimulating significant global demand for nuclear energy. Sixty-six plants are being built worldwide and another 154 are in the licensing and advanced planning stage.

U.S. suppliers are vying for business around the world – including China, Poland and India. Continued U.S. leadership in global nuclear safety and nonproliferation matters go hand-in-hand with a strong presence in the global marketplace. Both are critical to our national and global security. We must continue to participate in worldwide trade and nonproliferation policy discussions, or cede leadership in these areas to other governments and industrial competitors. Unless we choose engagement, America will lose tens of thousands of jobs and other benefits such trade has for our economy while forfeiting the nonproliferation benefits that 123 agreements are intended to achieve. ■

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two states that might later seize the material to ramp up the size of the nuclear weapons arsenals significantly -- would have to be put to a vote in both the House and Senate.

Industry and the State Department oppose these proposals, arguing that the current automatic approval of nuclear cooperation agreements works fine. Under the current rules, Congress can only block or amend a nuclear cooperative agreement if it passes a law to do so with an improbable two-thirds majority.

Also, if the United States insists on new nonproliferation conditions before other nuclear suppliers do, the State Department insists it will disadvantage U.S. nuclear exporters and eliminate the “control” U.S. exports would otherwise exercise. This argument, though, seems strained. After Fukushima, it’s unlikely that the United States will be making many nuclear reactor sales – let alone enough to control the trade unilaterally. The U.S.-designed reactors that melted down at Fukushima, in fact, were sold on the condition that U.S. nuclear reactor vendors be exempted of any responsibility for damages in the case of an accident. Now, few, if any, new foreign nuclear customers would be foolish enough to agree to such an exemption.

Nonetheless, the United States does have leverage over French and Russian nuclear exporters. Both want to expand their business in the United States. Japan, Korea, and Germany, meanwhile, are inclined to follow the United States on nonproliferation efforts.

Supporters of tightening the nuclear rules point to this leverage and insist the United States should use it to lead. They also point to history.

After India tested a bomb in 1974 using material it diverted from a “peaceful” U.S.-Canadian-exported cooperative power program, the nuclear industry and State Department warned Congress against imposing more nonproliferation conditions on nuclear exports lest it undermine U.S. nonproliferation leverage. Congress ignored these arguments, passed the Nuclear Nonproliferation Act of 1978, and the Nuclear Suppliers Group subsequently adopted all of this law’s U.S. export conditions and imposed them internationally.

This history constitutes tough medicine against inaction today. Indeed, it more than suggests why presuming that we can do no better than we have already done to condition nuclear exports is a mistake. ■