

RESEARCH & DEVELOPMENT

DOE relaxes foreign-company restriction in new \$100M funding round for ARPA-E

Responding to criticism from foreign-owned companies, the Energy Department launched a new, \$100-million funding solicitation for its ARPA-E program last week that allows foreign firms to more fully participate in the cutting-edge research-and development initiative.

Under the new solicitation, foreign-owned companies will be eligible for ARPA-E funding as long as they are incorporated within the US. In addition, a minimum of 90% of the work must be performed on US soil, as defined by total project costs, the solicitation states.

The new solicitation represents a big shift for DOE, which previously did not allow “foreign entities” to act as the “lead organization” in applying for ARPA-E funds. DOE did allow such companies to apply as part of a group, but the department limited them to spending only 25% of the total funds their teams received.

Nancy McLernon of the Organization for International Investment, a Washington-based group that represents foreign owned companies with US subsidiaries, hailed DOE’s move.

“The administration’s decision to allow the US operations of foreign companies to fully compete for these programs will have a direct positive impact on US job creation and the ability to achieve our energy goals,” McLernon said in an e-mail. “Just like any other company seeking to participate in ARPA-E, the research and work will be completed in the US by Americans.

The decision is a nod to the 5 million Americans already working for these companies.” ARPA-E, short for the Advanced Research Projects Agency-Energy, is designed to pursue high-risk, high-reward research related to combating climate change and reducing US dependence on foreign oil, among other things.

McLernon had lobbied DOE to remove the prohibition on “foreign entities” receiving ARPA-E awards, which had been included in the first solicitation issued in April. German-owned energy and technology giant Siemens had separately called on DOE to relax the restriction (IE, 16 November, 14)).

In response to the criticism at the time, Energy Secretary Steven Chu said the restriction on foreign participation was included because of the so-called “Buy American” provision of the \$787-billion economic stimulus bill, which requires certain projects to use only US-made iron, steel and manufactured goods. ARPA-E is funded with \$400 million from the stimulus package. But after McLernon complained that DOE had misapplied the provision, Chu promised that he would relax the restriction on foreign participation in the second ARPA-E funding solicitation.

The new solicitation announced last week makes \$100 million available for projects in three areas, including so-called “electrofuels, which are liquid transportation fuels using microorganisms to harness chemical or electrical energy to convert carbon dioxide into fuels. The two other areas are innovative materials and processes for advanced carbon-capture technologies; and batteries for electrical energy storage in transportation. On electrofuels, ARPA-E is seeking the development of microorganisms that can extract energy from hydrogen, reduced earth-abundant metal ions, organic redox active species or a direct electric current.

On carbon capture, the program is looking for low-cost catalysts to overcome slow kinetics as a limiting factor, robust materials that can resist degradation from caustic contaminants in flue gas, and advanced capture processes that are dramatically more efficient.

On batteries, ARPA-E is hoping to develop a new generation of ultra-high energy density, low-cost battery technologies that can power long-range electric vehicles as well as plug-in hybrid vehicles.

Concept papers are due to DOE by January 15, with final award decisions expected in March. The competition for the awards figures to be fierce. The first solicitation, with \$150 million available for awards, generated 3,700 applications, of which just 37 were selected for awards.

“We expect a similar level of creativity,” Chu said at a news conference Monday announcing the solicitation. In his letter introducing the solicitation, which is available on DOE’s web site, ARPA-E Director Arun Majumdar said the three focus areas resulted from many workshops held over the last three months that included input from the technical community.

“We urge you to continue informing and educating us through such forums, and also through one-on-one interactions with the program directors,” he wrote. “In short, ARPA-E is looking for the best ideas, and we are coming to the table with an open mind.”

Majumdar also wrote that he is in the process of recruiting “some of the best and brightest program directors,” with backgrounds in both science and business. Those directors will serve for appointments of three to four years. ARPA-E is also forming a technology outreach team to help awardees develop business plans for their technologies to be adopted in the market. Majumdar also announced last week a fellowship program

for scientists and researchers to assist ARPAE directors in developing research program areas.

Future plans include workshops to help create new programs, and an annual event to highlight awardees' technologies, as well as to meet with teams that did not get funded.

“We know that we cannot financially support everyone, but we also realize that we need to build a large community beyond ARPA-E for our nation to change course with fierce urgency,” Majumdar wrote. “If we are to foster rapid technological innovations, we also need to innovate in creating a system and a process that enables them to thrive. We are now creating that ‘DNA’ of ARPA-E.” — *Herman Wang*