Maximizing Small Business Innovation for Energy Independence

Overview

Cost-sharing dis-incentivizes small business engagement in R&D programs designed to reduce the nation's dependence on foreign sources of energy. This white paper recommends that the Department of Energy eliminate ***all*** cost-sharing for companies that qualify for Small Business Innovation research (SBIR) contracts.

Background

Small companies are acknowledged to be the primary sources of innovation and job creation, and employ more scientists and engineers than all the nation's universities and Fortune 500 companies combined. The primary investment being made by the federal government in these companies is the Small Business Innovation Research (SBIR) program. The SBIR program saw approximately 6-7,000 companies compete in 2008 for funding from the Departments of Defense (DoD), Health and Human Services (NIH), Energy (DoE) and other agencies. In 2008, the DoE alone received 1,494 Phase I and 279 Phase II proposals, making 318 and 161 awards, respectively. As with the other agencies, the DoE Phase I and Phase II SBIR program is funded entirely by the government.

Unlike the other agencies, the DoE requires small businesses to contribute between 20% and 50% of the costs of non-SBIR research and development (outside of Office of Science grant programs). As stated in US Code 42, Chapter 149, Subchapter IX, Part I, Paragraph 16352, "Cost share applies to research (other than basic or fundamental), development, demonstration, or commercial application programs starting after August 8, 2005…" It is generally presumed by this statute that "basic or fundamental research" is performed at universities and not in the for-profit sector, despite the historical evidence to the contrary. From its beginning, small businesses have made significant contributions to the nation's knowledge base in the energy and environmental sciences, working closely with the National Energy Technology Laboratory and other DoE labs.

Current situation

As a direct result of the above-cited statute, all DoE Broad Area Announcements (BAAs) have required a 20% cost-share, and the newly-established ARPA-E requires up to 50%. If it is the goal of ARPA-E to engage the most innovative and entrepreneurial companies, most of whom have not received venture capital, this is not the way to do it (DARPA, the alleged model for ARPA-E, has never required cost-sharing of any kind in its solicitations). Proponents for DoE cost-sharing argue that the for-profit sector should have some "skin in the game", since it will ultimately be the commercial beneficiary of federally-funded technology. For small businesses, technology commercialization is a serious and risky activity. It is not a "game", and such businesses have little "skin" to gamble.

Unlike the DoD, the DoE does not represent a "first-adopter" market for the output of the development efforts that it funds. Furthermore, the commercial market for energy-related products and services is both qualitatively and quantitatively different from the defense sector, requiring many years, if not decades, for market acceptance, regulatory approval and real-world scale.

Where the DoD annually budgets over $80B of RDT&E to bring technologies through the various phases of development (6.1, 6.2, 6.3, ….) until they are adopted by "Programs of Record", without requiring any cost-sharing (DoD even reimburses IR&D expenses), there are no advanced development budgets within the Department of Energy, except, perhaps, at the national laboratories.

Recommendation

Small businesses are fully capable of contributing to energy research, development, innovation, demonstration and commercialization, but are highly constrained by the availability of risk capital. Cost-sharing is a dis-incentive to this sector to engage in R&D programs designed to reduce the nation's dependence on foreign sources of energy. To remove this barrier to maximizing small business participation, it is recommended that:

The Department of Energy eliminate all cost-sharing requirements for all research and development performed for the Department by SBIR-eligible companies.

Respectfully,

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