BREAKTHROUGH INSTITUTE

POLICY CONCEPT DRAFT

NATIONAL ENERGY EDUCATION ACT

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NATIONAL ENERGY EDUCATION ACT

Fifty years ago, in the wake of the launch of Sputnik, the federal government authorized the National Defense Education Act (NDEA) of 1958. The legislation provided billions of dollars to inspire and train a new generation of young innovators to confront the Soviet challenge. It was a critical first step toward developing the human capital necessary to put a man on the moon and invent the technologies that catapulted our world into the Information Age.

Today, a half-century later, a new generation of Americans must rise to confront the single greatest challenge of the 21st century: energy. America and the world are in energy crisis. Energy prices are rapidly escalating, foreign energy dependency is increasing, global warming continues unabated, and billions of people worldwide are living without access to energy. The key to solving these crises is the rapid development and deployment of cheap and clean energy.

Transforming our nation's energy systems will require a level of expertise, innovation, and generational effort unlike any before. America needs major new investments in our educational infrastructure to overcome the energy challenge and reclaim our economic competitiveness. As centers of knowledge creation and diffusion, higher education will play a central role in the transition to a clean energy economy.

A National Energy Education Act (NEEA) would direct new federal investments to retool our nation's top universities and colleges as centers of research, education and workforce training in energy-related fields. These investments would expand clean energy education through new research grants, graduate fellowships and energy science and policy focused curricula; financial aid and loan forgiveness for students entering clean energy development fields; building efficiency, clean energy installation, and green manufacturing workforce development programs; and support for "innovation pipelines" that help commercialize new technologies produced in the laboratory.

Public investment in clean energy education will more than pay for itself, just as the post-Sputnik education programs did in the 1950s and '60s. These programs accelerated technological development and paved the way for the information-age productivity revolution -- from microchips and telecommunications to personal computing and the Internet. Today, NEEA would equip a new generation of Americans with the highest-caliber human capital, inspire them to tackle energy as their generational undertaking, and pave the way for new industries and technologies that will drive the U.S. economy for decades to come.

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POLICY FACT SHEET

NATIONAL ENERGY EDUCATION ACT

FACTS ON EDUCATION

I. Servicemen's Readjustment Act (aka the GI Bill), 1944

Return on every dollar invested in education for returning GIs: ***$6.90***

Added value to national economic output over 35 years: ***$281 billion***

II. National Defense Education Act, 1958

Number of students who received federal student loans in 1959: **24,831**

Number of students who received federal student loans in 1964: **247,000**

III. Higher Education Today

Number of additional students that must access higher education by 2025 in order for the U.S. to remain competitive in strategic fields: **20 million**

Number of students enrolled in higher education today: **17 million**

Percentage of civilian Department of Defense employees with STEM degrees who will be eligible to retire in 2015: **70%**

Sources

"A Cost-Benefit Analysis of Government Investment in Post-Secondary Education Under the World War II GI Bill." Subcommittee on Education and Health of the Joint Economic Committee, Congress of the United States. December 14, 1988.

U.S. Secretary of Education Margaret Spellings. Remarks, "A Test of Leadership." 2008 Higher Education Summit. Chicago. July 18, 2008.

Institute for Defense Analyses, Science and Technology Policy Institute. "The National Defense Education Act of 1958: Selected Outcomes" (2005). Executive Office of the President. Washington, DC.

GOALS OF A NATIONAL ENERGY EDUCATION ACT

I. Improve quality of and access to education in energy-related fields

- Increase financial aid and loan forgiveness for students entering energy-related fields
- Support the creation of new multidisciplinary curricula and career development resources focused on energy
- Expand energy-related service learning and work-study opportunities
- Provide improved training and resources for energy-related educators at the collegiate level

II. Increase funding for clean energy R&D at universities

- Expand funding for basic energy-related research via new research grants and graduate fellowships
- Provide incentives to create energy research centers and initiatives

III. Support the development and implementation of new workforce training programs in clean energy industries

- Increase funding for workforce training programs at technical and community colleges and worker retraining centers
- Support partnerships with clean energy firms to identify workforce training needs and develop training programs

IV. Create "innovation pipelines" to move new products out of research labs and into private sector ventures

- Support collaboration between government research facilities, higher education institutions, and industry on demonstrations of technologies that will be ready for deployment in the near future
- Provide incentives for the creation of research parks and other forums facilitating communication and technology transfer between private firms and university research labs