BREAKTHROUGH INSTITUTE

POLICY FACT SHEET

A NEW NATIONAL ENERGY EDUCATION ACT

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A new **National Energy Education Act** (NEEA) is a legislative package directing government investment toward training a new generation of Americans in strategic energy-related fields, including engineering, technology, science, mathematics, business, and policy, and supporting their innovative work as they move through the education system and into a career.

A NEEA would provide financial aid to students and funding to universities and vocational/technical schools for improving research, education and workforce training in energy-related fields. It would also expand funding for research, development, and demonstration of new clean energy technologies at universities, and support technical and vocational schools in developing and implementing programs to train a new energy workforce.

A National Energy Education Act is a long-term investment in expertise in energy-related fields, ensuring continued American competitiveness and economic growth. America's prosperity has long been driven by advances in technology and productivity. We need to make strategic investments today if we are to remain globally competitive in the future.

A National Energy Education Act will support research, development, and demonstration of new clean energy technologies that will enable the U.S. to overcome the energy crisis and develop clean and cheap new energy for all Americans. A serious and sustained investment in technological innovation must be the core of our national strategy in addressing the energy crisis. Supporting stronger linkages between national research facilities, institutes of higher education, and workforce development programs will foster collaboration between our nation's best minds and skilled workers.

A National Energy Education Act will guarantee access to and quality of education and workforce training for hundreds of thousands of young Americans. Ensuring access to the highest quality education for America's future workforce will strengthen the middle class, provide pathways out of poverty, and fuel continued economic competitiveness and prosperity.

A politically unifying issue

- ✓ Recent legislation authorizing investments to improve education in STEM fields (science, technology, engineering, and mathematics) and increase funding for clean energy R&D has passed with **broad bipartisan support**, but has yet to be fully funded.
- ✓ A serious commitment to continued competitiveness and innovation appeals to **a wide range of stakeholders**, including Americans concerned with security and energy independence issues, economic growth, climate change and the environment, and our current system of education; blue-collar workers and citizens calling for increasing investment in new 'green jobs'; parents, students, and teachers; clean technology and green venture capital firms; and the academic community.

FEDERAL INVESTMENT IN EDUCATION

- BY THE NUMBERS -

The Servicemen's Readjustment Act (aka the GI Bill of Rights), 1944

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

Added value to national economic output over the 35 years that followed the bill: ***$281 billion (2007 dollars)***

The National Defense Education Act, 1958

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

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

Higher Education Today

Number of additional students that need to 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 degrees in science, mathematics, engineering, or technology 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 COMPREHENSIVE ENERGY EDUCATION POLICY

Improve quality of and access to education in energy-related fields, such as science, mathematics, engineering, technology and policy at universities and colleges.

- Expand funding for energy research via new research grants and graduate Fellowships
- Provide financial aid and loan forgiveness for students entering energy-related fields; additional funding of the National SMART (Science and Mathematics Access to Retain Talent) grant
- Expand energy-related service learning and work-study opportunities
- Create new multidisciplinary curricula focused on the energy challenge

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

- Support partnerships with industry and community organizations identifying workforce training needs and developing training programs
- Provide funding for workforce training programs at our nation's technical and community colleges

Provide improved training and resources for energy-related educators at the K-12 and collegiate levels.

- Incentivize teaching careers (loan forgiveness, Teacher Corps, TEACH grant expansion)
- Support innovative teaching methods in the classroom
- Grants for educational resources (laboratory equipment, a/v materials)
- Summer training and research opportunities for K-12 teachers

Create and support innovative energy research centers in national laboratories and university campuses.

- Incentives to create professional science and engineering programs/centers on campuses
- Grants supporting innovative undergraduate curriculum & research programs
- Provide tax breaks to employers of workers seeking continuing education in energy-related fields
- Incentivize careers at national laboratories
- Support for basic research through competitive grants administered through existing federal research labs

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 technology demonstration projects
- Provide incentives for the creation of research parks and other forums facilitating communication and technology transfer between private firms and university research labs