American Energy Innovation Council

Norman Augustine • Ursula Burns • John Doerr • Bill Gates • Charles Holliday • Jeff Immelt • Tim Solso

FOR IMMEDIATE RELEASE
Tuesday, September 13, 2011
Contact: Paul Bledsoe
(202) 204-2400
pbledsoe@bipartisanpolicy.org

Top Business Leaders Issue New Report on Critical Role of Government Investment in Energy Tech Innovation

Report Outlines History of US Government Research Sparking Key US-led Industries and Role in Creating Energy Technology Breakthroughs

Group Describes Revenue Options for Energy R&D

WASHINGTON, DC – A group of America's top business executives including Bill Gates today released a new report detailing the case for government investment in research to produce long-term energy breakthroughs, arguing that even in times of budget austerity such investments are crucial to US economic competitiveness and to the development of clean, affordable, and secure supplies of energy.

The American Energy Innovation Council's (AEIC) new report, Catalyzing American Ingenuity: The Role of Government in Energy Innovation, finds that while US government investment in technology research has been integral to American economic competitiveness in many sectors, needed investments in energy breakthroughs are simply not being made.

"We are in critical need of a government commitment to research into new energy technologies that can free us from our dependence on foreign oil and create affordable clean-energy alternatives," Gates said. "Yet today, the U.S. government spends only one-sixth as much on energy innovation as it does on medical research."

In addition to Gates, chairman and former CEO of Microsoft, AEIC members include: Norm Augustine, former chairman and CEO of Lockheed Martin; Ursula Burns, chairman and CEO of Xerox; John Doerr, partner at Kleiner Perkins Caufield & Byers; Chad Holliday, chairman of Bank of America and former chairman and CEO of DuPont; Jeff Immelt, chairman and CEO of GE; and Tim Solso, chairman and CEO of Cummins.

As the AEIC members note in today's report, "From gas turbines to smart phones, medical imaging technologies to space flight, GPS to the internet—government funded innovation research has improved lives, created jobs, and supported more than a century of U.S. preeminence. As business leaders we are acutely aware that America's future success depends on its ability to carry forward this tradition of

innovation and continue generating new ideas, technologies, processes and products—especially when it comes to energy."

The new AEIC report finds an urgent need for government innovation investments due to the lack of private sector incentives for long-term energy research, and because neither government nor the private sector are investing adequately in energy technology today. The report proposes reforms of government programs to yield greater economic benefits, especially in concert with the private sector. Finally, the group outlines possible funding approaches for increased investment outside annual appropriations and that originate from revenues from the energy sector itself.

"Understandably, especially in this period of tight budgets, people ask why the private sector can't fund the necessary R&D into energy alternatives," said Gates. "No matter how well intentioned, utility companies and other private investors simply are not going to invest deeply in the kind of R&D needed to create scalable, low-cost, low-carbon energy innovations They have little or no economic incentive to do so. This is a unique but critical role for government, one central to our long-term economic competitiveness."

"Neither the private sector nor the government are making investments in research even remotely commensurate to the vast opportunities in the $5 trillion global energy market," said Norm Augustine, who is also a former Undersecretary of the Army. "Energy innovation is a matter of national and economic security given oil reliance, nuclear power, climate change and related issues, and must be treated that way by Congress and the Administration in terms of investment priorities."

Specifically, the report:

1) Finds that a more robust government role in energy innovation is needed because:

- **The energy sector has suffered from chronic under-investment in R&D.** "Utilities, in particular, steer remarkably few resources to R&D. Across all U.S. industries, private firms spend an average of 3.5 percent of revenues on R&D. By contrast, utility spending on R&D averages 0.1 percent of revenues," the report finds. U.S. government investment in energy R&D, meanwhile, is also quite low compared to other areas, the report notes—about $5 billion in 2010 on energy in contrast to over $30 billion for medical research and over $80 billion for defense R&D.

- **Energy technologies are capital-intensive and long-lived, requiring significant up-front cash with a slow return**. Slow turnover of capital assets combined with the large up-front investments required for many new energy supply or end-use technologies mean that the sector as a whole is subject to a

high degree of inertia, a tendency to avoid risk, and domination by incumbent firms.

- **Energy markets are not perfectly competitive**, due to regulatory uncertainty, market fragmentation, and distortions introduced by past policies, all of which generally slow the adoption of innovative technology.

- **Government-funded R&D programs in a number of areas—such as defense, health, agriculture, and IT—have enabled the United States to lead not just in specific technologies but in entire industries**. Unfortunately, federal efforts thus far in support of clean energy R&D have been inadequate to the task and paltry in comparison with other sectors.

2) Proposes government reforms to more effectively leverage public research for private sector use, including:

- **Developing and implementing a comprehensive, government-wide Quadrennial Energy Review (QER)** that aligns capacities of the public and private sectors. The QER should pinpoint key market failures and technology chokepoints in order to better orient federal programs and resources.

- **Supporting "innovation hubs."** "Hubs" concentrate resources and knowledge and can accelerate the development of new technologies. AEIC strongly supports the direction of DOE's Innovation Hubs, Bioenergy Research Centers and Energy Frontier Research Centers and believe they should receive full funding.

- **Supporting and expanding ARPA-E**. ARPA-E challenges and empowers innovators across a range of technology pathways. By nearly all accounts, it appears that ARPA-E is being managed as a highly efficient, risk-taking, results-oriented organization. At a minimum, ARPA-E should receive at least $300 million per year. Going forward, investments in ARPA-E should be prioritized and increased.

- **Making DOE work smarter along the ARPA-E model**. DOE has a critical role to play and but needs to evolve beyond its current program structure and culture to be maximally effective. AEIC argues for "ARPA-izing" a larger portion of DOE and the national labs by expanding some of the new authorities, tools and processes that are embodied by ARPA-E to other parts of the agency.

- **Develop a first-of-a-kind technology commercialization engine along the lines of the proposed Clean Energy Development Administration (CEDA)**. Previously, AEIC called for a new government-backed institution dedicated to overcoming financing hurdles for new advanced, commercial-scale energy technologies. CEDA aligns with our original recommendation and would mobilize significant private-sector capital to bridge the transition from demonstration to commercialization.

3) Outlines options for the federal government to pay for increased investment in energy innovation, including;

- **Developing a funding regime that is dedicated, consistent, and not beholden to annual appropriations. In general, funds should originate from revenues from the energy sector itself rather than general federal revenues.**

- **Options to provide funding offsets for investments in energy innovation are commensurate with our original recommendations and include**:

    - Diverting a portion of royalties from domestic energy production;
    - Reforming and redirecting energy technology subsidies;
    - Collecting a wires charge on sales of electricity;
    - Levying fees on other energy or pollution sources; and
    - Streamlining DOE.

- **AEIC does not advocate for one revenue option over another; the only unacceptable option is to fail to make these investments.**

- **Support for innovation is an investment, not a cost.** AEIC previously called for a three-fold increase in annual energy innovation investments and maintain that such a level should be our country's target over the next decade. At the same time, the AEIC fully understands the gravity of the nation's current fiscal situation.

"We know the federal government has a vital role to play in energy innovation. We know the federal energy innovation system can be structured effectively to achieve real results. And we know there are several ways to pay for public investments in this domain," the report states. "If the U.S. fails to invent new technologies and create new markets and new jobs that will drive the transformation and revitalization of the $5 trillion global energy industry, we will have lost an opportunity to lead in what is arguably the largest and most pervasive technology sector in the world. However, if the U.S. successfully innovates in clean energy, our

country stands to reap enormous benefits. It is time to embark as a country toward our clean energy goals."

Today's report builds on the recommendations AEIC first outlined in June of 2010 in A Business Plan for America's Energy Future. The full reports and other materials can be found at www.americanenergyinnovation.org and http://www.bipartisanpolicy.org/projects/energy-project/aeic

###

About the Bipartisan Policy Center:
Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole and George Mitchell, the Bipartisan Policy Center (BPC) is a non-profit organization that drives principled solutions through rigorous analysis, reasoned negotiation, and respectful dialogue. With projects in multiple issue areas, BPC combines politically-balanced policymaking with strong, proactive advocacy and outreach. As part of BPC's work on energy issues, BPC hosts and staffs the American Energy Innovation Council. For more information about BPC, visit www.bipartisanpolicy.org.