

Statement of Arun Majumdar
Nominee for Under Secretary for Energy
Senate Committee on Energy and Natural Resources

December 8, 2011

Chairman Bingaman, Ranking Member Murkowski, and distinguished members of this committee, it is my distinct honor and privilege to appear before you today as the nominee for Under Secretary of Energy.

I would like to first thank my wife, Dr. Aruna Joshi, and our two daughters, Shalini and Anjali, who have been immensely tolerant over the last two years of my bi-coastal lifestyle spanning California and Washington. Unfortunately, they cannot attend today's hearing. I wish to also thank President Obama for his confidence in me and Secretary Chu for being a thoughtful mentor, an outstanding boss, and someone I have the honor to call a friend.

As I told this committee over two years ago, I spent most of my career as an educator and researcher in science and engineering at the University of California, Berkeley and Lawrence Berkeley National Laboratory. While at Berkeley Labs, I led strategic initiatives in the areas of energy efficiency, renewable energy, and energy storage. In 2005, I was elected to the National Academy of Engineering, the nation's highest honor in engineering.

The breadth and depth of my knowledge in science, engineering, and management of technological innovation has served me well in taking on the challenge of being the first Director of the Advanced Research Projects Agency – Energy (ARPA-E) – an honor and privilege that I will cherish for the rest of my life. In ARPA-E's short existence, we have stood up an organization with a philosophy of excellence in everything we do.

I would like to briefly describe the five core values, which I believe have been instrumental in ARPA-E's success and which, if confirmed, I intend to bring to my role as the Undersecretary of Energy. Value #1: **People**. ARPA-E has been able to attract some of the best and the brightest scientists and engineers as program directors. We also have assembled a superb administrative support staff. Value #2: **Speed and efficiency**. To be globally competitive, speed is of the essence. We have developed a streamlined process where we can execute with a fierce sense of urgency and unprecedented speed and efficiency. Value #3: **Breakthrough technologies through competition**. ARPA-E funds research to translate science into breakthrough energy technologies that are too risky for the private sector, but if successful could create the foundation for entirely new industries. ARPA-E programs have attracted some of the best scientists, engineers and entrepreneurs to compete against each other and provide a portfolio of approaches that will ensure our national security, economic security and environmental security. Value #4 **Stewardship and integrity**. All projects are selected purely based on merit. We also engage in active program management, and have had the discipline to discontinue projects when they simply did not work out. Finally, Value #5: **Create value for a secure American future**. It is important that ARPA-E creates value for society and makes an impact on our economy. For example, over the last two years, 11 of ARPA-E technologies received \$40 million in funding,

which allowed the teams to conduct research, that has subsequently attracted more than \$200 million of private sector investment – five times leveraging of federal dollars. And this number continues to grow.

While such innovations in new energy technologies are critical and necessary, they are not sufficient. Cost and scale are equally important to address the significant challenges and opportunities we face in the 21st century. First, the challenges our country faces. We import roughly 50 percent of the oil we use and pay about \$1 billion per day. America invented the lithium-ion battery, and in 2009 we manufactured only 1 percent of the world's batteries. We invented the solar cell and this year we will manufacture only 7 percent of the world's photovoltaic modules. We have an aging grid infrastructure that needs to be modernized and secured. We have massive coal and natural gas resources that we must use in an environmentally responsible and cost-effective way. We invented nuclear energy as a clean source of electricity, and we must regain our technological lead and become globally competitive.

Now, the opportunities. The rising world population and economic growth presents the biggest economic opportunity of the 21st century with trillions of dollars of worldwide investment in the next few decades. Other nations are positioning themselves to take advantage of this opportunity and become energy leaders of the future. America faces a choice about what to do with the opportunity presented by the global energy race. We can compete in the global marketplace – creating American jobs and selling American products – or we can buy the technologies of tomorrow from abroad. I believe the road to a secure future is to: invent locally, make locally and sell globally. And we need to do this with fierce urgency.

This requires the Department of Energy to galvanize all its rich resources in science, engineering, and policy from across the whole enterprise spanning the Office of Science, ARPA-E and the Applied Energy Offices, the national laboratories, and university and industrial research laboratories to catalyze and enable our small and large industries to become globally competitive and ensure a secure future for our children and grandchildren. If confirmed, I will work diligently within DOE and with Congress to make sure that the DOE will work as an integrated team where the whole is bigger than the sum of its parts, to address the challenges and avail the opportunities of the 21st century.

I thank you for the opportunity to testify before you today, and I look forward to answering your questions.