



## Fuel Cell Stimulus Plan Will Create US Jobs and Clean Energy Capacity, Reduce CO<sub>2</sub>

Congress can dramatically accelerate deployment of a clean, home-grown, US manufactured green energy technology, create an estimated 24,000 jobs<sup>i</sup> and fight back against global climate change, simply by taking advantage of federal laws already on the books. Fully funding programs of the Energy Policy Act of 2005 (EPACT) at levels Congress has already approved for FY2010, and use of other authorized funds, will invest \$1.2 billion in fuel cells, hydrogen and infrastructure. This investment will put hundreds of fuel cell vehicles and up to 100 megawatts of fuel cell power into customers' hands, reap efficiency, environmental and security benefits and create green jobs and high-tech manufacturing capacity for the American economy.

### Benefits of Fuel Cells

- Fuel cells generate electricity and heat electrochemically, providing overall energy efficiencies of up to 80%, or even higher. Fuel cells produce benefits in all applications – power generation, industrial equipment, transportation, military power and consumer electronics.
- Fuel cells are essential to achieving carbon reduction goals, with CO<sub>2</sub> reductions ranging from 40% or better using conventional fuel to nearly 100% using renewably derived hydrogen. Because fuel cells are electrochemical systems and do not rely on combustion, they are the cleanest fuel-consuming energy technology, with near-zero smog-causing emissions.
- Fuel cells can greatly simplify the sequestration of CO<sub>2</sub> from hydrocarbon fuels, enabling the environmentally responsible use of domestic fuels like coal and biomass.
- Fuel cells and hydrogen can help provide stability and continuity to the electric grid since they can provide continuous “base load” power in parallel with or independent of the grid. In addition, they can support intermittent renewable energy. These attributes make them ideal resources for supporting critical loads for military and civilian consumers.
- Federal support will accelerate job creation and keep innovation, industrial capacity and jobs in the U.S., avoiding the fate of advanced batteries, which are made in Asia.

### Steps We Can Take Now

#### DEPLOY Fuel Cells

**\$100 Million<sup>ii</sup>**

Dozens of power systems are available today for commercial and defense applications, supplying energy efficiency and secure power for critical loads. Fuel cells have shorter lead times than large generation systems and most are built in the US. Federal agencies can buy fuel cells from the GSA Schedule and directly from manufacturers. Federal policies and federal funds should support public and private sector purchases and leases of fuel cells and infrastructure for stationary, portable and micro fuel cells. Including fuel cells in federal clean energy installation requirements also would accelerate commercialization. *Authority: EPACT Sec. 783, FY2010: \$100 million for purchases.*

#### STIMULATE Deployment, by Supporting a Fueling Infrastructure

**\$65 million**

Federal grants and tax credits for hydrogen and other fuel cell fueling infrastructure will dramatically accelerate activity in existing markets like industrial equipment, and prepare communities for the arrival of fuel cell passenger vehicles. Federal policy should support hydrogen infrastructure deployment via an investment tax credit and by cost sharing for fueling stations, and fully fund the current vehicle Learning Demonstration. *Authority: EPACT 2005, Sec. 782, FY2010: \$65 million for vehicles and infrastructure.*

#### IMPROVE Federal Fuel Cell Investment Tax Incentives

Given the current economic climate, Congress should temporarily provide refunds for entities that can pay no taxes because they are losing money, and permanently provide payments for entities like hospitals and schools that are tax exempt. Technical changes in the language of the Investment Tax Credit for fuel cells would allow its provisions to work better together. Increasing the credit for fuel cells for homeowners to 30% or \$3,000 per kilowatt would give home owners the same support already provided to businesses and industry. *Provisions: IRC Sections 25D, 48.*

#### EXPAND Learning Demonstrations

**\$375 Million**

Learning demonstrations put early commercial and advanced experimental systems in the hands of government and private sector users who help evaluate the systems even while enjoying their real-world benefits. Federal law already authorizes demonstrations and deployment in civilian and military applications. *Authority: EPACK Sec. 808, FY2010: \$375 million.*

#### BUILD American Manufacturing Capacity

**\$100 Million**

Fuel cell companies and suppliers need to invest in manufacturing capacity but money from banks and investors is difficult to find. Federal grants and tax credits for investment in manufacturing infrastructure will keep jobs and industrial capability in the US, stimulate the US supply chain and reduce unit costs. US manufacturers can begin upgrading and expanding their capacity immediately. *Authority: EPACK Sec. 805, FY 2010:\$100 million;\* EISA 2007 Sections 136; also IRC Sec. 4.*

#### ACCELERATE Research in Partnership with Industry

**\$350 Million**

Federal research employs thousands in high-tech professions and trades. Fuel cell and hydrogen research can retain and expand jobs at universities and national laboratories and in the private sector, and can accelerate commercialization. Basic research is needed in advanced materials, catalysis and other relevant fields. Applied research should focus on improved performance and reduced costs, and on improved availability, storage and utility of hydrogen and other fuels for fuel cells. *Authority: EPACK Sec. 805, FY2010: \$350 million for research.\**

#### INVEST In Fuel Cell Transit

**\$180 Million**

Fuel cell buses have proved their capability in revenue service operation and transit operators have expressed interest in additional deployments. Transit provisions in the stimulus should include the purchase of at least 100 zero emission fuel cell buses and funds for relevant infrastructure investment. *Authority: SAFETEA-LU Bus and Bus Facilities Program.*

#### INCLUDE Fuel Cells in President-Elect Obama's Energy Initiative

The President-Elect proposes to stimulate markets for advanced energy systems by promoting efficiency in federal buildings and by establishing a 25 percent Federal Renewable Portfolio Standard (RPS) for all electricity consumed in the U.S, and finances clean, US-made power generation via a carbon cap-and-trade auction. Fuel cells can make a huge contribution to these national programs.

**Authorized Total: \$1.2 Billion**  
**Bottom Line: A limited investment now will foster green power  
and keep jobs and capability at home.**

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<sup>i</sup> Derived from *Green Recovery* estimates [http://www.americanprogress.org/issues/2008/09/green\\_recovery.html](http://www.americanprogress.org/issues/2008/09/green_recovery.html)

<sup>ii</sup> 2010 Energy Policy Act '05 authorized level except as noted.

\* Section 805 authorizes a range of fuel cell and hydrogen research topics; total FY 2010 Sec. 805 authority is \$450M. Our proposal allocates \$100 million for manufacturing and \$350 million for research.