



CAPSTONE TURBINE CORPORATION

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The Honorable Sander Levin  
Chairman  
Ways and Means Committee  
United States House of Representatives  
1102 Longworth House Office Building  
Washington, DC 20515

April 28, 2010

Dear Chairman Levin:

Attached please find Capstone Turbine Corporation's written testimony on the Committee's April 14, 2010 hearing on energy tax incentives.

I thank you for the opportunity to provide comment on this important issue.

Sincerely,

Darren R. Jamison  
President and CEO

## TESTIMONY PREPARED BY CAPSTONE TURBINE CORPORATION

### HEARING: ENERGY TAX INCENTIVES DRIVING THE GREEN JOB ECONOMY

#### HOW MICROTURBINES AND COMBINED HEAT AND POWER CAN CREATE JOBS, STIMULATE AMERICAN MANUFACTURING AND LOWER EMISSIONS

April 28, 2010

On behalf of the nearly 200 employees of Capstone Turbine Corporation, our 90-plus distributor companies, and our thousands of customers throughout the world, I would like to thank you for holding this hearing on the importance of U.S. energy tax incentives. As an American manufacturer of clean energy technology, energy tax incentives are vital to the deployment of our product in the United States. However, the current tax credits for microturbines and combined heat and power systems are inadequate to help customers purchase innovative energy systems in today's economic climate.

#### Current Tax Credits Versus What Is Needed

Since the passage of EPACT 2005, microturbines have been eligible for a ten percent investment tax credit up to \$200 per kilowatt. However, since the average microturbine project costs up to \$3,000 per kilowatt installed, owners are not able to claim the full ten percent. Since 2008, combined heat and power (CHP) systems are also eligible for a ten percent investment tax credit.

Our experience has been that the ten percent tax credit is inadequate to stimulate widespread adoption of ultra low-emission, highly efficient microturbine technology, and that CHP deployment has been stagnant despite the implementation of the tax credit. In fact, over 60% of our sales are outside of the United States, with the majority of those sales in countries where incentives are more readily available. This means that the American market is lagging the rest of the world in adopting ultra low-emission microturbine-based CHP.

The need for financial assistance to enable highly efficient CHP projects in the U.S. market is substantial. Last year the Department of Energy released a solicitation to fund approximately \$150 million worth of "shovel ready" CHP projects. According to the DOE the program received over \$9 billion in applications representing projects that would have created 57,000 U.S. jobs. A thirty percent tax credit is necessary to move the balance of the unfunded projects forward and create much needed green jobs.

#### Microturbines and CHP

We support raising the tax credits for both microturbines and for CHP. A microturbine is a small, ultra low emission gas turbine, generally under two hundred fifty kilowatts. Capstone Turbine's products include microturbines with output ratings of thirty kilowatts, sixty-five kilowatts, and two-hundred kilowatts, as well as a one megawatt package. Microturbines produce usable efficient thermal energy and clean electrical

power, which can be harnessed in cogeneration, also known as combined heat and power. Microturbines are also used in renewable fuel applications such as landfill gas and digester, or biogas. In addition, they are now being used as onboard range extenders for hybrid electric vehicles, including transit buses, trucks and cars. Customers are starting to select microturbines as their technology solution because of their ultra low emissions, high reliability and overall efficiency.

Because of low pollutant emissions, microturbines are among the cleanest ways to drive a CHP system. Only microturbines and fuel cells are certified by the California Air Resources Board to meet its 2007 emissions standard. Fuel flexible, microturbines can run on fossil fuels such as natural gas, coal bed methane, diesel, propane and kerosene, and on renewable fuels such as digester gas, landfill gas, and biodiesel. Capstone Turbine is also developing a solar power microturbine system with grant funding from the U.S. and Israeli governments, as well as a synthetic gas-powered microturbine with funding from the U.S. Department of Energy.

### Our Company – Capstone Turbine Corporation

Our company is a prime example of the type of innovative American manufacturer of clean, efficient technology that energy tax incentives are designed to promote. Based in Chatsworth, California, we are the world's leading manufacturer of low emission microturbine energy solutions, and were the first to market commercially viable microturbine energy products. Founded in 1988, Capstone Turbine has shipped over 5,000 Capstone MicroTurbine® systems to customers worldwide.

Here are a few examples that provide insight into how microturbine technology is helping to create a cleaner, more efficient economy in the United States:

- At Syracuse University, microturbines power a new, state-of-the-art data center that uses 50 percent less energy than a traditional data center. Capstone Turbine's Hybrid UPS is the first power system to integrate low emission microturbines directly with a dual-conversion UPS to provide power for mission-critical loads. Syracuse University's Green Data Center features a clean and extremely efficient trigeneration system. Exhaust heat from the Capstone microturbines is piped to double-effect absorption chillers, which use the heat energy to make cold water to cool the data center's computers. The microturbines also serve the heating and cooling needs of a nearby office building.
- In our home state of California, sixteen 65 kilowatt microturbines provide electricity to the Ronald Reagan Presidential Library. The waste heat from the turbines runs through an absorption chiller to provide air conditioning to the Air Force One Pavilion. Installing this CCHP system eliminated the need to construct an additional power line to the site and saves the facility \$300,000 per year in utility bills.
- In Michigan, at the Dulk Dairy in Ravenna, the biogas from cow manure powers a microturbine that creates clean onsite power while the heat is used in the farm's

processes. This dairy project and others like it help farmers become cleaner, more efficient, and more productive.

- DesignLine, located in North Carolina, installs our microturbines into hybrid electric transit buses. Municipal bus fleets in New York, Baltimore, Denver and U.C. San Diego in California, among others, have purchased buses. The bus's microturbine can run on diesel, biodiesel, or compressed natural gas, and is much more energy efficient and produces significantly less emissions than a traditional transit bus.
- In Oregon, a microturbine CHP plant provides electricity and hot water to the LEED Platinum Oregon Health and Science University building. The CHP system helped OHSU to receive LEED energy points and attain Platinum status. The building is a showcase of our technology interacting with other clean and efficient technologies, such as solar energy.
- In New Mexico, fifteen of our units provide remote power to a booster station on an oil pipeline near Ramon, where there is no grid power. The reliability of our technology was the motivation for this customer. Microturbines provide primary power at pumping stations across New Mexico and in other oil and gas producing states.
- In New York City, we have several microturbine CHP plants located on rooftops and setbacks of high rise office buildings. The electricity produced from these systems reduces energy costs while also providing secure power through loss of grid power. The waste heat captured by the system provides heat and air conditioning to the buildings.

### Why Tax Incentives Are Vital

- **To Bring State-of-the-Art Clean and Green Technologies into Mainstream American Businesses.** New and innovative technologies benefit from government incentives to promote commercial deployment. Capstone Turbine is a relatively new company, having been formed in 1988 and engaged in commercial production for approximately ten years. With over 5,000 units shipped, our company has achieved product acceptance, primarily outside of the United States. Widespread commercial deployment will accelerate in the United States with additional U.S. Government tax incentives for customers.
- **To Promote U.S. Manufacturing in Key Industries.** American companies currently dominate the global microturbine industry, but this preeminence is not assured to continue. Two American manufacturers, Capstone Turbine and Ingersoll Rand account for over ninety percent of global microturbine sales. A robust tax credit for microturbines is needed to maintain American manufacturing dominance. A March 2010 report by Pew Charitable Trust observed that China has moved ahead of the United States in clean energy spending. In the report,

Energy Secretary Steven Chu is quoted as saying that the U.S. "has fallen behind" other countries in the race to be at the forefront of the clean-energy industry.

As stated earlier, Capstone Turbine ships the majority of its product overseas, mainly to Europe due to the existence of feed-in tariffs which compensate owners of clean energy systems. While we are very pleased to be able to contribute to U.S. trade, we hope that the American market will improve so that microturbines and CHP can be adopted by U.S. consumers.

- **To Help American Companies Bring Down Energy Costs and Be Green.** Most businesses choose to install CHP systems to save money on energy costs. CHP is clean because of the higher efficiencies that systems achieve relative to separate production of electricity and heat and their ultra low emission technology. When customers choose to purchase a microturbine to generate CHP, they often do so because they want the cleanest technology available. While microturbines and other CHP systems save the customer money on a monthly basis, the biggest hurdle is the initial cost of the system. With tight debt markets and businesses holding cash for necessary business operations, clean CHP is beyond many businesses' current financial capabilities.

### **Why CHP and Microturbines Deserve Parity with Renewables**

A thirty percent tax credit for microturbines and CHP gives parity with renewable technologies such as wind, solar and geothermal, as well as non-renewable technologies such as fuel cells. A 2008 Department of Energy report enumerated the many environmental and economic benefits that achieving 20% of U.S. power from CHP would deliver:

- Deliver CO<sub>2</sub> savings equivalent of taking 154 million cars off the road;
- Save an estimated 5.3 quadrillion BTUs of fuel annually (the equivalent of half of all energy consumed by U.S. households);
- Generate \$234 billion in new investments;
- Create 1 million skilled jobs.

Microturbines deserve parity with renewables and fuel cells because they have ultra low emissions and represent a state-of-the-art, high-tech energy solution. Moreover, the global microturbine market is currently dominated by American manufacturers, including Capstone Turbine (manufactures in California) and Ingersoll Rand (manufactures in New Hampshire). Providing a thirty percent tax credit for microturbines means that more consumers will adopt innovative American technology as opposed to dedicating U.S. tax dollars for the purchase of foreign equipment benefiting overseas companies.

Microturbines, like renewable power and fuel cells, are an emerging technology that have not yet benefited from economies of scale. Although lifecycle costs of microturbines can be lower than traditional reciprocating engines that emit significantly more pollution, microturbines have higher upfront costs. This creates a “catch-22,” because until microturbines have greater commercial penetration they will not be able to achieve the economies of scale necessary to drive down production costs, but until they drive down production costs they continue to face difficulties achieving widespread commercial adoption.

### Conclusion

Congress has a unique opportunity to pass legislation that would have a threefold benefit to Americans by increasing the tax credit for microturbines and CHP to 30%. One, drive up demand for these systems and therefore create much-needed jobs in the manufacturing, construction, engineering and trades. Two, provide investment into the clean energy economy and drive forward deployment of innovative green technologies. Three, clean the air, conserve fuel, and lower greenhouse gases by increasing the efficiency of how American businesses generate electricity and heat.

We strongly urge you to pass H.R. 4751 and also to increase the tax credit for microturbines.

Thank you for the opportunity to provide testimony on this issue of critical importance to America.

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