Statement for the Record

by Infinia Corporation

Committee on Ways and Means

Subcommittee on Select Revenue Measures and Subcommittee on Oversight

Joint Hearing on Energy Tax Policy and Energy Tax Reform

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Thank you for the opportunity to submit a statement for the record on whether energy policy should be advanced through the tax code, and if so, how best to design provisions that most efficiently promote the country's energy policies. Infinia believes that energy tax policy plays a critical role in advancing the country's broader energy objectives. Historically, Congress has used the tax code as an effective way to encourage domestic energy production, but these tax incentives have not always been well-coordinated with one another and the country's broader energy policies. Comprehensive tax reform presents Congress with an opportunity to improve the structure of energy tax provisions so that they consistently and efficiently further the country's energy priorities, whether that be reducing the country's dependence on foreign oil, diversifying the country's energy portfolio, increasing domestic energy production, reducing greenhouse gas emissions, increasing energy security or encouraging investment in emerging energy technologies.

In order to achieve these priorities in a cost-effective and efficient manner, Congress should use tax reform as an opportunity to restructure energy tax provisions from a technology-specific regime to a technology-neutral regime. The current tax code treats comparable technologies differently, creating market inefficiencies and resulting in the misallocation of private capital. Additionally, since most energy projects are long-term endeavors, energy tax provisions should be reformed to provide investors with the certainty they need to make long-term investments.

Before we discuss the principals we believe should underlie comprehensive energy tax reform, Infinia would like to provide the Committee with greater details about its own experiences with the current tax code.

Infinia

Infinia is an energy technology company specializing in free-piston Stirling cycle devices which can be used in myriad applications, including combined heat and power systems and a solar power generation product that converts concentrated solar power into electricity. Infinia employs 60 people, with offices in Utah and Washington. Additionally, since Stirling cycle devices are built from the same parts and components used to make cars, Infinia uses the same suppliers as the domestic automobile industry, providing a unique opportunity to repurpose some of the nation's traditional automobile manufacturing infrastructure for the production of renewable energy.

Free Piston Stirling Cycle Devices

Originally developed by Robert Stirling in 1816, free-piston Stirling cycle devices use a working fluid (typically Helium, Nitrogen or Hydrogen gas) in a closed cylinder containing a piston. Heated on one end and cooled on the other, the expansion and cooling of the gas drives the piston back and forth in the cylinder. The work performed by this piston-motion is used to drive a generator or to create pressure waves to drive a compression process. Although Stirling cycle devices can be driven by most any fuel source, because there is an existing infrastructure for the delivery of natural gas, it is a likely candidate to be used as a fuel source, just as it is with fuel cells. Currently, both free-piston Stirling cycle devices and fuel cell applications are being developed in which renewable resources would power the respective processes.

In fact, often times free-piston Stirling cycle devices can be used in applications similar to fuel cells. For instance, a military application has been developed for free-piston Stirling cycles to provide electricity for a mobile field kitchen to operate the lights and burners in the field while simultaneously boiling water to heat tray-pack hot rations. Some Stirling cycle-based applications are so efficient that they use up to 85%-90% of the energy in the natural gas input to produce heat and electricity, far exceeding comparable technologies.

A Proven Technology

Since 1985, Infinia has been delivering highly reliable, zero-maintenance, free-piston Stirling cycle devices and power systems to commercial companies and government agencies. In 2010 alone, the Department of Energy and Department of Defense awarded Infinia almost $10 million in grants for the further development of Stirling cycle device technology. Notably, Infinia has been awarded a prestigious $3 million ARPA-E (**A**dvanced **R**esearch **P**rojects **A**gency – **E**nergy) grant to develop a revolutionary Stirling cycle air conditioner. Additionally, Infinia's Stirling cycle devices are being developed by the DOD for such applications as tactical power generation for forward deployed forces, micro-Combined Heating and Power systems for field kitchens, micro-Combined Cooling, Heating and Power systems for potable water chilling, power systems for UUV's (**U**nmanned **U**nderwater **V**ehicles) and a number of confidential and classified applications. Thus, over the past decade the basic Stirling cycle device technology has proved to be a reliable, innovative technology, allowing Infinia to continually experiment and improve upon existing applications to develop its next, cutting-edge application.

Current Treatment under the Technology-Specific Tax Code

Despite the Federal government's recognition of Stirling cycle device technology in the broader areas of Defense and Energy, the technology-specific energy provisions in the tax code only apply to Stirling cycle devices when they are used in the solar configuration. Consequently, other applications of free-piston Stirling cycle devices are not eligible for tax incentives for which comparable technologies, such as fuel cells and microturbines.

More specifically, when free-piston Stirling cycle devices are used for solar energy production, they qualify for the section 48 investment tax credit; yet, when the same device is used in other

configurations, like its remote power applications, it no longer qualifies for the thirty percent section 48 investment tax credit. However, other renewable energy technologies with comparable energy efficiencies qualify for the section 48 investment tax credit regardless of their configurations because the credit specifically includes them as a category of qualified energy property. The same disparate treatment occurs under the section 25D residential energy efficient property credit. Since free-piston Stirling cycle devices are not explicitly included as a type of qualified expenditure, they are not eligible for the credit despite the fact they are as energy efficient, if not more so, than the technologies included under the section 25D credit.

Ultimately, the technology-specific energy tax provisions hinder free-piston Stirling cycle devices' ability to compete in the market place. Investors in energy technologies look to the federal tax code, among other indicia, as a basis upon which to make their investments. Inclusion in the tax code signals to the market place that the federal government has confidence in a technology and also increases the rate of return on the investment. Consequently, private capital is more likely to invest in technologies covered by the tax code, placing free-piston Stirling cycle devices at a disadvantage when it comes to raising private capital. In turn, less private capital makes it more difficult for a company to reach the point of commercialization, when costs begin to rapidly decrease as the company move down along the cost curve.

Energy Tax Reform

Comprehensive tax reform provides Congress with the opportunity to transition from a technology-specific tax regime to a technology-neutral one. Instead of identifying and rewarding specific technologies under multiple code provisions, Congress should identify broad energy objectives based on generally applicable, rigorous performance criteria and then establish tax incentives that equally support all technologies meeting or surpassing that criteria. A technology-agnostic energy tax regime ensures that both emerging and established technologies receive the same treatment under the tax code. Such a technology-neutral regime would allow free-piston Stirling cycle technology to appropriately receive the same tax benefits as comparable technologies that are currently advantaged by the technology-specific tax code.

Additionally, as Congress reforms the energy tax regime it should also consider lengthening the duration of energy tax credits. Most energy investments are capital-intensive, long-term projects; however, most energy tax credits are short-term provisions. Consequently, in order to efficiently incentivize the type of behavior covered by the tax credit, the credit's duration must be sufficiently long enough to provide companies and investors with certainty that upon the project's completion they will be able to qualify for the tax credit.

Conclusion

Infinia would like to thank the Ways and Means Committee for its consideration of tax reform and the future of energy tax policy, issues of great importance to the nation and our company. Thank you for the opportunity to discuss Infinia's experiences with the tax code and the immense potential of free-piston Stirling cycle device technology. We look forward to working with the Committee in the future as it undertakes comprehensive tax reform.