



Submission to the Working Group on Manufacturing  
House Committee on Ways & Means  
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National Venture Capital Association (NVCA)

**Background**

The tax credit described in the following paper is a manufacturing credit geared to the production and manufacture of fuels and energy generation property. Therefore, we thought it appropriate to submit to both the Manufacturing Working Group and the Energy Working Group.

Today's web of energy tax policies is in need of significant reform. Current policy is an amalgam of decades of regional priorities and inconsistent policies. No current policy supports the kind of innovation and adoption of new technology that ensures our long-term competitiveness in global energy markets. Continued innovation is critical. The United States needs to adopt a long-term energy tax policy that encourages corporations to invest in new technology, aligns with the needs of small emerging companies who are often the source of these innovations, and provides greater incentives to adopt new technologies.

As a nation, we must look carefully at which challenges are appropriate for the federal government to address. Regulations, standards, and incentives must balance support for existing technologies with the necessary incentives needed for continued innovation to meet our national priorities. They must also require that technologies can eventually compete on their own in the private market.

The approach discussed below would help streamline the nation's energy tax policy and create a more level playing-field for new technologies. The structure (1) simplifies the energy tax code and provides consistent, durable incentives for new technologies across the entire energy industry; (2) ends the current practice of the government picking long-term technology winners; (3) refocuses federal support on early technology deployment where it is needed most; and (4) encourages private investment in innovation, which is one of the most critical components to unlocking new economic growth.

It is not the purpose of this paper to suggest the repeal, modification, or expansion of any other energy tax credits; these credits serve a variety of public policy objectives. Rather, we believe enacting this approach could provide a valuable framework with a technology-neutral tax credit that phases out automatically when a technology reaches commercial maturity and a tax subsidy is no longer needed. This proposed tax credit model could truly inform the Congress should it choose to reconsider the full panoply of tax benefits available to fossil, nuclear, and renewable

energy sectors in order to achieve technology neutrality, automatic phase-out provisions, and the support of innovation in the energy sector.

Innovation is a critical component of economic growth. According to a report released by the Department of Commerce, “technological innovation is linked to three-quarters of the nation’s post-WWII growth rate. Two innovation-linked factors – capital investment and increased efficiency – represent 2.5 percentage points of the 3.4% average annual growth rate achieved since the 1940’s.”<sup>1</sup> But historically, private investment in innovative technologies has been weaker within the energy sector than in almost every other industry. In 2010 the five largest oil companies spent just \$3.6 billion on R&D which represents less than 2 percent of profits and less than 0.4 percent of total expenditures.<sup>2</sup> In the utility sector, the major utilities employ on average less than 5 people in R&D roles per 1000 employees. This is the lowest level of any industry.<sup>3</sup> These numbers are a result of many industry dynamics, but also reflect how little incentive exists for energy companies to invest in new technology, even with R&D tax credits.

### **Venture Capital Plays a Key Role in Innovation**

According to a 2011 IHS Global Insight report, companies that were founded as small start-ups with venture capital accounted for 12 million jobs and \$3.2 trillion in revenues in the United States. These figures equate to 11 percent of private U.S. employment and 21 percent of our country’s GDP.

Venture-backed companies are responsible for the creation of entire industry sectors here in the United States including semiconductors, biotechnology, Internet content and software. Today, we are creating the companies that will serve as cornerstones for cloud-based computing, internet security, healthcare, social media and new energy. Many companies founded with venture capital are household names today, including Apple, Genentech, Starbucks, Facebook, Home Depot and FedEx.

Over the past 10 years, venture capitalists have invested over \$25.0 billion in 762 energy and cleantech companies. With this burgeoning growth of venture capital investment in energy companies over the last ten years, the next generation of successful companies innovating in energy is poised to follow in their footsteps.

The chart below highlights the considerable increase in venture capital investment in energy and cleantech over the past ten years. The data is from the MoneyTree Report by PricewaterhouseCoopers LLP and the NVCA, based on data from Thomson Reuters.

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<sup>1</sup> U.S. Department of Commerce, [Patent Reform: Unleashing Innovation, Promoting Economic Growth & Producing High-Paying Jobs](#). 2010

<sup>2</sup> Congressional Research Service. *Research and Development by Large Energy Production Companies*. August, 2011.

<sup>3</sup> National Science Foundation, *Research and Development in Industry: 2006-07* (Arlington, VA: National Science Foundation, 2011), 130-131. Table 31 and 261. <http://www.nsf.gov/statistics/nsf11301/pdf/nsf11301.pdf>

Investments by Year	\$M Invested
2003	228.97
2004	431.08
2005	630.94
2006	1,800.84
2007	3,123.66
2008	4,279.31
2009	2,519.23
2010	4,091.53
2011	4,615.18
2012	3,325.42
<b>TOTAL</b>	<b>25,046.16</b>

### **Policy Recommendations**

For tax policy to effectively drive domestic innovation, it will need to address the scaling challenges and accommodate the financial constraints of smaller emerging companies in the energy sector. These companies play a major role in driving energy innovation, along with some larger companies, that are in fact committed to continuous innovation. And if they receive the private investment they will need to reach commercial scale, these companies will create thousands of new jobs -- just as entrepreneurial companies have done in the information technology and life sciences sectors over the past four decades.

Moreover, policy should be structured in a manner that encourages emerging, high-growth companies to develop a wide range of energy technologies (from renewables to fossil to nuclear), allows the private market to determine winners and losers among these technologies, and creates robust opportunities for new and improved technologies to access the market and compete on a level playing field.

A new approach is in fact possible. Creating a new, non-refundable credit would support technologies as they develop and begin to enter the market -- before they have fully reached economic scale. The structure would be focused on driving technologies down their respective cost curves and then automatically roll off tax credit support as these technologies reach maturity and can compete on their own in the market. America has the most robust private capital markets in the world, but long-term, reliable incentives that create a level playing field are required to unlock this capital. Such a framework would provide certainty to investors across all stages of investment – seed, early, growth, and debt financing for commercialization -- and help to attract the capital required to fill development gaps throughout the commercialization process.

## **The Energy Innovation Credit**

NVCA, in coordination with industry partners and investors across the capital spectrum, has developed the following proposal for an “Energy Innovation Credit”:

***Eligibility:*** The tax credit seeks to achieve technology neutrality and applies to any innovative technology used for the production of fuels, energy generation property, or any technology that can be paired with energy generation property to improve energy efficiency, including energy storage. Companies eligible to receive the credit must be operating qualified facilities in the United States that manufacture or produce an eligible technology.

***How a technology is deemed “innovative”:*** Qualifying technologies must be determined to meet a threshold as “new and significantly improved” relative to commercially available alternatives. This means that a technology must: be only recently developed, discovered, or learned; depend on proven improvements to production processes; or, involve or constitute new or improved function, performance, reliability, or quality, in comparison to commercial technologies. Such requirements would include as eligible the adoption of existing or previously proven commercial technologies at a different scale or for a wholly separate function in the market relative to their initially intended commercial value.

***Permanence & Commercial Scale Roll-Off:*** The credit will be permanent in the tax code (until repealed by statute), but will be available to individual companies **only** temporarily as they scale up. As a company grows and reaches commercial scale, the credit will reduce to zero once the company reaches the first of two distinct “roll-off triggers.” One trigger is a volume-based threshold, calculated as the cumulative lifetime production or manufacturing volume for an individual producer. This refers to total production -- potentially from multiple demonstration, pilot, and commercial facilities -- measured in kilowatts for electricity-generating technologies or gasoline gallon equivalent (GGE) for fuels. The second trigger is a cap on “qualifying capital expenditures,” calculated as the aggregate capital expenditures by an individual company associated with the implementation of new or improved technology elements of the system.

The volume-based thresholds sufficient for an individual producer to have reached commercial scale will be determined for each qualifying technology by the Secretary of the Department of Energy (DOE) in consultation with the Secretary of the Department of Treasury. These thresholds will be subject to revision based on market conditions every five (5) years and will be adjusted only in the case that technology development capabilities and market conditions have shifted significantly such that the volume at which commercial scale can be achieved is determined to have changed significantly. The Internal Revenue Service (IRS), in consultation with DOE, will have authority to regulate the threshold on qualifying capital expenditures.

***Transferability:*** The credit will be transferable up-stream and down-stream in a company’s supply chain of business relationships to allow pre-revenue and emerging growth technology companies to take advantage of the credit. The tax credit won’t achieve its objective without this ability to transfer this credit to larger incumbent companies in their supply chain with tax liability.

## **CASE STUDY 1: Next Generation Solar Manufacturer**

Because the current Production Tax Credit (PTC) or Investment Tax Credit (ITC) for solar typically is claimed by solar developers, it does not directly benefit U.S. manufacturers of innovative solar technologies. These credits support the deployment of solar projects regardless of whether they use domestically manufactured solar panels, foreign panels, older more proven technologies, or newer and potentially more efficient technologies.

The “Energy Innovation Credit” outlined above would provide the credit directly to the panel manufacturer as cents/KW of electricity-generating-capacity manufactured. Therefore it would be for the manufacturing of the equipment rather than the production of electricity. The credit would only go to “new” technologies (for example, the threshold in the case of solar could be such that only technologies that have produced under 1 GW of total cumulative production qualify). However, this would also be capped by the total capital expenditures required for the production of that capacity. In other words, if the panel manufacturer spent \$400M on capital equipment associated with the “substantially new or improved” components of the panel, then the credit would roll-off at the earlier of the volume threshold being met (1 GW of capacity) or the cumulative credit amount reaching an established percentage of the capital expenditures (X% of \$400M).

## **CASE STUDY 2: Next Gen Bio-Refinery**

Current tax law supports companies that operate refineries that produce biofuels by offering certain per-gallon tax credits ranging from a few cents to approximately \$1.00 per gallon, depending on the specific type of fuel produced. Those biofuels need not be new or innovative (because the tax credit is designed to support the replacement of fossil fuels by biofuels of certain types), and these companies may receive the benefits of the tax credit so long as they produce fuels and the tax credits are extended by Congress. Uncertainty among investors about whether and for how long Congress will periodically extend these credits has slowed private investment in this sector.

Under the “Energy Innovation Credit,” a company building and operating the facility would receive credits per gallon produced, regardless of fuel type, up to a percentage of the “qualifying capital expenditures” or up until the production threshold has been met (i.e. 500,000 cumulative gallons of production). Although the credit ultimately phases out for that company as it reaches scale, it would provide more certainty and a clearer economic forecast for investors to base their decisions on and thus drive private investment into the innovative biofuels sector.

## **Conclusion**

NVCA encourages the Committee to focus on innovation as it considers a long-term approach to tax reform. The Energy Innovation Credit we propose would ensure a productive, focused role for the federal government in helping energy technology innovation reach commercial scale – but not beyond that point. Furthermore, the Energy Innovation Credit would help increase participation of private-sector investors who will ultimately drive economic growth and ensure U.S. leadership in the global energy economy.

