

**Testimony of Will Coleman, OnRamp Capital**  
**Before the Senate Finance Committee**  
**Energy, Natural Resources, and Infrastructure Subcommittee**  
**Hearing on “Powering Our Future: Principles for Energy Tax Reform.”**  
**July 31, 2013**

Thank you Chairwoman Stabenow, Ranking Member Cornyn, and distinguished members of the Committee. It is my privilege to be here today to share my views on how best to reform our nation’s energy tax code to unlock new energy innovations, create jobs and improve the lives of Americans.

I am Will Coleman, the founder of OnRamp Capital, which partners with corporations to invest in early stage innovations. In this position and in former roles within the venture capital and energy industries, I have focused on investing in and building companies at the earliest stages of the innovation process and helping to grow them to commercial scale.

I am here today to talk about the fundamental role that tax policy plays in shaping the energy landscape, and in particular, how it continues to impact investment in the kinds of advanced energy innovations that we need to remain competitive as a nation. We have an enormous opportunity to leverage new innovations in energy and the industries that rely on access to affordable, domestic, efficient, safe energy. However, we will miss this opportunity if we don’t take this moment to adjust some of our policies in the energy sector.

As an investor in the earliest stages of the innovation process, I have seen first-hand how policy and market gaps can produce ripple effects throughout the financing ecosystem. I would like to share some perspective on how the overlap between economics and public policy is causing persistent and growing barriers to investment in energy innovations – particularly the scaling up of new technologies. I will share a few thoughts on where I think the federal government – using the tax code – can and should play a role. Lastly, I will provide details on one newer approach – an energy innovation manufacturing tax credit – that offers a framework to address the continuing financing gaps in the energy sector for commercializing innovative domestic energy technologies.

**How the Federal Tax Code Already Drives Energy Markets**

It is important to acknowledge that the federal government has always influenced the energy sector, and that tax policy has been one of its primary tools for doing so. For over a century the federal government has used tax policy to guide investment on the premise that energy is

critical to the nation's strategic interests. Tax policy has helped drive investment in energy R&D, exploration, infrastructure, and generation projects. It has been used to stand up new technologies and expand others. Just over a year ago the CEO of Continental Resources, the largest leaseholder in the Bakken Shale explained to this committee the importance that tax incentives have played for the development of that resource. He said that the long standing oil and gas provisions in the tax code "played a significant role in the technology-driven oil and gas renaissance we are currently experiencing... the development of horizontal drilling took trial and error. Without the current capital [federal tax] provisions in place, we would not have been able to fail over and over again, which is what it took to advance the technology needed to produce the Bakken and numerous other resource plays across America. And this technology that allows us to drill two miles down, turn right, go another two miles and hit a target the size of a lapel pin is the technology that has unlocked the resources that make energy independence a reality."<sup>1</sup>

These tax credits have been critical to the development of our energy resources, but they must be applied more equitably to avoid picking winners and losers.

According to a report from DBL Investors, the average annual inflation adjusted federal spending on oil over the first 15 years of its deployment in the U.S. was five times greater than what we have spent on renewables. Spending on nuclear was 10 times greater.<sup>2</sup>

Today the tax code is an amalgam of decades of shifting energy priorities. It continues to support both renewable and conventional energy technologies, but the support is inconsistent in several key ways that make investing in new innovative technologies difficult. Different resources enjoy different levels of certainty, support, and commitment.

One of the biggest inconsistencies in the current code is that almost all of the conventional energy credits are permanent and targeted at increasing supply from mature technologies, while credits for renewables are temporary. This has a profound effect on where equity investors, corporations, and lenders are willing to invest their money. Tax policy has always been the silent dictator of winners and losers in energy markets. Long term capital, and venture capital in particular, must anticipate the competitiveness of a technology and the ability to finance future projects. If credits are permanent, then it is easier to invest in companies and technologies that leverage those credits well in advance of their readiness to use them. If credits are temporary then any amount of political uncertainty negates the signaling value of the credits. Short-term extensions, in particular, do little to provide certainty, especially when

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<sup>1</sup> See <http://www.finance.senate.gov/imo/media/doc/Hamm%20Testimony1.pdf>, p. 2.

<sup>2</sup> Nancy Pfund & Ben Healey. *What Would Jefferson Do? The Historical Role of Federal Subsidies in Shaping America's Energy Future*. DBL Investors, Sept. 2011.

recent Congressional moves to repeal even one-year extensions undermine confidence in these types of provisions. As long as some sectors get permanent credits and others don't, the playing field will not be level.

The problem is accentuated when looking at investing in innovative technologies because investment decisions are made well in advance of when a company or technology would access a production credit. Even in some of the faster moving sectors in which venture capital invests the average time from initial funding to liquidity is 4-8 years. In energy, where large commercial facilities often take years to construct and cannot be financed until a technology has been fully de-risked, investors require piloting, demonstration, and operating track records. Even if a company can secure the financing for a first-of-a-kind commercial facility, the company will need to operate that facility for up to five years before it can secure conventional debt financing for future plants. That means the timeline can be 15+ years from early R&D to initial commercialization for some energy technologies. These realities of today's funding ecosystem necessitate more predictable, long term structures to draw capital into innovative companies.

The second major issue with the current energy tax code is that it is mostly focused on producing more of the same from proven technologies rather than encouraging the adoption of newer, better solutions that can ensure continued competitive advantage for the U.S. Very little of the code has been effectively targeted at jumpstarting the innovation that fuels long term economic growth. Most of the oil and gas credits such as depletion allowances, expensing of drilling costs, and domestic production credits focus merely on expanding the current resource and allowing for quicker cost recovery, and even the alternative energy credits focus primarily on enhancing the economics of current technologies. Almost all the energy credits in the code are only accessible to large, mature corporations with sizable balance sheets and cash flows. This approach creates two problems: (1) it biases investment decisions toward tax advantaged primary production rather than the innovations that can significantly impact cost or performance; and (2) it makes it more difficult for new entrants to enter the market and compete.

The Congressional Joint Committee on Taxation (JCT) estimates that from 2010-2014, the federal government will spend upwards of \$74 billion on an array of **direct** subsidies to support domestic oil and gas development and production.<sup>3</sup> This far outpaces support for emerging technologies. These incentives include exploration credits, depletion credits, royalty relief, and several others. In addition, the oil and gas industry enjoys many **indirect** tax incentives that most people don't recognize as part of the energy tax equation. Tax advantaged structures such

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<sup>3</sup> Joint Committee on Taxation. *Estimates of Federal Tax Expenditures for Fiscal Years 2010-2014*. Government Printing Office, 2010.

as Master Limited Partnership (MLPs), which are limited to oil, gas, and natural resource projects, have grown from just \$2 billion in 1994 to over \$220 billion in 2010. Section 199 credits created in 2004 that provide relief for “qualifying production activities” reduce the corporate tax rate for qualifying energy companies by approximately 3 percent according to the American Petroleum Institute.<sup>4</sup> Foreign Tax Credits, 40 percent of which are used by the petroleum industry, provided an additional \$42 billion in relief for the energy industry in 2008 alone.<sup>5</sup> And yet, oil prices continued to climb in 2012 to over \$112/bbl.

Many of the direct and indirect supports have been essential to expansion of our domestic resource production, and were implemented at times when US oil companies were struggling to compete at \$20 per barrel of oil. However, as we now strive to diversify the fuel sources that supply America’s energy, we must acknowledge the role these “legacy” incentives have in shaping the current market if we are going to rebalance the current energy tax code.

The recent boom in U.S. natural gas production, which was largely unleashed by advancements in drilling and fracking technologies, has been a boon for the refining industry and has helped stave off some of the growing concerns about energy supplies. However, it is a mistake to think we have solved our energy problems. Even with the boom in gas production and slowing global economies the amount of money Americans spent on imported oil increased from \$337 billion in 2010 to \$434 billion in 2012.<sup>6</sup> In other words, we continue to transfer increasing amounts of America’s wealth overseas – dollars that could be reinvested here at home.

The reality is that energy is a global commodity and growing global demand will continue to outstrip supply if we don’t continue to innovate. We will continue to rely on gas, coal, oil and other conventional resources for decades to come, but we need to continue to develop new resources and use these existing resources with increasing efficiency.

To create a level playing field that encourages continued innovation we must acknowledge the past investments that have created the current systems. It is important to recognize that the government has played a role in cementing the current energy landscape. If we can agree that continued innovation in energy is critical to our competitiveness as a nation, then the federal government can and should play a role in helping to unlock that innovation.

### **Emerging Technologies Provide a Significant Opportunity**

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<sup>4</sup> American Petroleum Institute. *Repealing the 199 Manufacturing Deduction for Oil and Gas Companies Puts Jobs at Risk*. February 2011.

<sup>5</sup> Internal Revenue Service. *Statistics of Income Tax Stats, 2008. Corporation Complete Report Publication*. Accessed May 26, 2011.

<sup>6</sup> [http://www.eia.gov/dnav/pet/pet\\_move\\_impcus\\_a2\\_nus\\_ep00\\_im0\\_mbbbl\\_a.htm](http://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbbbl_a.htm)

The global transition to next-generation technologies and resources remains one of the largest economic growth opportunities in generations. We are fortunate to have a strong, diverse natural resource base. However, much of our competitive advantage over the last two centuries has come from our ability to innovate – to develop new, lower-cost or advantaged technologies such as oil, nuclear, and now renewables, ahead of our global competitors. According to a report released by the Department of Commerce, “Technological innovation is linked to 75 percent of the Nation’s post-WW II growth rate. Two innovation-linked factors – capital investment and increased efficiency – represent 2.5 percentage points of the 3.4 percent average annual growth rate achieved since the 1940’s.”<sup>7</sup>

The high cost of gas and oil in the early 2000’s and the presumption that governments would need to begin to regulate carbon emissions drove significant new investment in shale gas development and other alternatives. In both cases the investments in commercializing these technologies and then scaling them up have led to impressive reductions in cost. Natural gas has dropped from a high of \$7.97/thousand feet<sup>3</sup> in 2008 to \$2.66/thousand feet<sup>3</sup> in 2012 and production has grown 16 percent over that time frame<sup>8</sup>. Wind, solar, biomass and other renewables are also playing increasing roles. Wind deployments grew more than 500 percent from 2007-2012<sup>9</sup> and solar grew more than 1000 percent over the same time period. Meanwhile, the cost of solar modules has dropped more than 60 percent in the last two years alone.<sup>10</sup> In comparison, most conventional resources that are affected by global demand have increased in cost. Coal prices have climbed more than 200 percent since 2003<sup>11</sup> and imported crude oil prices have climbed 350 percent over the same time period.<sup>12</sup>

Technology transitions have always been good for economic growth, driving both investment and jobs. The solar industry already employs more people in the U.S. (119,000)<sup>13</sup> than the coal mining industry (87,000)<sup>14</sup>. Solar employment has more than doubled in the last four years alone. It is important to recognize, however, that many industries are still largely in their infancy and barriers to entry remain high. Wind provides only 2.9 percent of our electricity and solar just 0.4 percent as compared to 42 percent from coal and 25 percent from natural gas. The reason is not a lack of resource. The U.S. has some of the largest wind, solar, and biomass

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<sup>7</sup> U.S. Department of Commerce, *Patent Reform: Unleashing Innovation, Promoting Economic Growth & Producing High-Paying Jobs*. 2010

<sup>8</sup> [http://www.eia.gov/dnav/ng/ng\\_sum\\_lsum\\_dcunus\\_a.htm](http://www.eia.gov/dnav/ng/ng_sum_lsum_dcunus_a.htm)

<sup>9</sup> [http://www.awea.org/learnabout/industry\\_stats/index.cfm](http://www.awea.org/learnabout/industry_stats/index.cfm)

<sup>10</sup> <http://www.seia.org/research-resources/solar-industry-data>

<sup>11</sup> [http://www.eia.gov/totalenergy/data/annual/pdf/sec7\\_21.pdf](http://www.eia.gov/totalenergy/data/annual/pdf/sec7_21.pdf)

<sup>12</sup> <http://www.eia.gov/forecasts/steo/realprices/>

<sup>13</sup> <http://thesolarfoundation.org/sites/thesolarfoundation.org/files/2012%20Census%20Press%20Release%20FINAL.pdf>

<sup>14</sup> [http://www.bls.gov/oes/current/naics4\\_212100.htm](http://www.bls.gov/oes/current/naics4_212100.htm)

resources in the world. In fact, the US possesses more than 231,000 GW<sup>15</sup> of annual capacity from untapped wind and solar resources alone. This is over 222 times our current total electricity capacity, and it disappears every day that we don't harness it.<sup>16</sup>

Unfortunately, the energy industry is extremely slow to adopt new technology. In 2010 the five largest oil companies spent less than 2 percent of profits and less than 0.4 percent of total expenditures on R&D.<sup>17</sup> In the utility sector, the major U.S. utilities employ on average less than five people in R&D roles per 1000 employees. This is the lowest level of investment in innovation of **any** industry.<sup>18</sup> Many companies recognize the value of innovation, but are understandably driven by optimizing and protecting existing business lines. This is particularly true when the majority of all federal energy incentives focus on bolstering the supply of conventional resources, irrespective of the efficiency or efficacy of the technologies used to access those resources.

The net result is an industry that does not natively produce an enormous amount of innovation or adopt novel technologies except in times of acute disruption. Given the length of the innovation cycle and the strategic importance of energy to our competitiveness, we cannot afford to wait until the next disruption or allow other nations to take over the lead on new technology. Many forward-looking companies are examining ways to get ahead of this trend in the sector and these companies will no doubt prosper. However, the bulk of investors in new energy technologies are increasingly struggling to overcome these hurdles for many of the most strategic and fundamental innovations.

The U.S. must continue to leverage its energy assets effectively to embrace the growth potential of new energy technologies and to remain economically competitive. Conventional technologies represent the vast majority of today's production, but we cannot afford to ignore the growing opportunity that other alternatives represent. We need a tax code that provides both consistency between conventional and renewable frameworks and encourages investment in new technologies that have the greatest potential to lower our energy costs over time. Congress should consider how to incentivize conventional industries to adopt new and

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<sup>15</sup> [http://www.windpoweringamerica.gov/pdfs/wind\\_maps/poster\\_2010.pdf](http://www.windpoweringamerica.gov/pdfs/wind_maps/poster_2010.pdf)  
<http://www.nrel.gov/docs/fy10osti/45889.pdf> [http://votesolar.org/wp-content/uploads/2011/02/NREL\\_Solar\\_Tools.pdf](http://votesolar.org/wp-content/uploads/2011/02/NREL_Solar_Tools.pdf)  
[www.nrel.gov/gis/docs/resource\\_maps\\_200905.ppt](http://www.nrel.gov/gis/docs/resource_maps_200905.ppt)

<sup>16</sup> <http://www.eia.gov/electricity/annual/pdf/tables1.pdf>

<sup>17</sup> Congressional Research Service. *Research and Development by Large Energy Production Companies*. August, 2011. Calculations are based on total R&D spending of \$3.6bn in 2010.

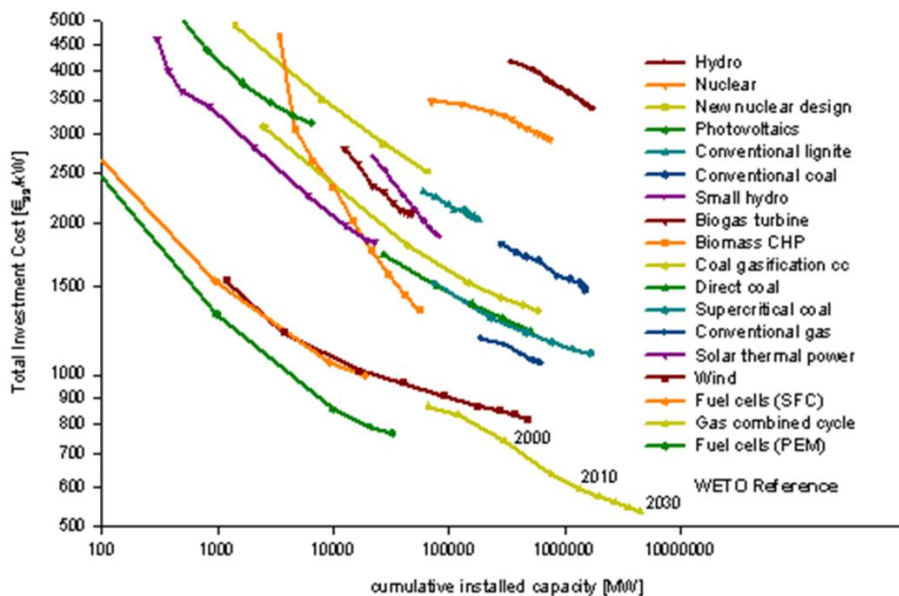
<sup>18</sup> National Science Foundation, *Research and Development in Industry: 2006-07* (Arlington, VA: National Science Foundation, 2011), 130-131. Table 31 and 261. <http://www.nsf.gov/statistics/nsf11301/pdf/nsf11301.pdf>

innovative technologies and implement a tax regime that enables new and emerging energy technologies to compete on a more level and consistent playing field.

### Innovation Drives Long Term Cost Reductions

Any tax solution that is going to provide support for innovation needs to account for the factors that drive innovation and competitiveness. One of the fundamental premises of technology development is that each technology reduces its costs over time through a combination of technical innovation and scaling up the volume of production. The result is that each technology undergoes a “learning curve” that drives costs down.

### Historical Learning Curves by Technology (over volume)



Source: European Commission. *World Energy, Technology and Climate Policy Outlook 2030*. 2003. P.71

Different technology solutions – even within the same type of technology – can have different learning curves and development trajectories. For instance, in solar, learning curves are specific to individual technology platforms such as silicon panels (SunPower, Suntech, etc...) or cadmium telluride panels (First Solar), and even specific to different approaches within these material systems, rather than to solar technology as a whole. This is important because it means that different companies are at different places in the innovation cycle at different times and are at different levels of readiness to compete without support. Continued innovation on both variations and wholly new platforms can unlock step-changes in cost reductions even after existing technologies in a category have reached commercial scale.

Technology development is one piece of the equation, but “scale” is critical. First Solar, the leading solar company in the world, is a great example. Over the past 30 years, solar engineers have reduced cost with every generation of new technology, but for First Solar the final critical cost reductions came from taking one such technology and scaling up the volume of manufacturing for that technology. First Solar has reduced panel production costs from over \$3.00/watt in 2004 to under \$0.66/watt in 2013, due in large part to a 2,500 percent increase in production capacity from 2004-2008<sup>19</sup>. Further cost reductions are possible, but only if both research and deployment capital are available.

Solar is not alone. Almost every technology-driven industry evolves this way, whether it is energy, semiconductor, or steel production. The U.S. has benefitted from leading the innovation cycles in many of these industries, but commercial scale always requires significant investments from private capital sources which in turn requires the right market conditions, a robust pipeline of technology, and constructive public policy. Unfortunately, when it comes to energy, the U.S. is currently faltering in all three of these categories.

### **State of New Energy Financing**

Over the last 10 years, market conditions, technology advancements, and public policy expectations led venture capitalists to deploy \$25.1 billion into energy related technologies<sup>20</sup>. Investors relied on the supposition that macro conditions would persist and that other types of investors would participate in the scaling and deployment of the most effective technologies. This investment drove a boom in new technologies and attracted a growing pool of talent to the industry. The macro conditions have in large part remained. However, scaling these technologies has proven to be a major stumbling block. Commercializing most energy technologies demands a magnitude of capital and level of collaboration with incumbents that goes beyond the capacity of the venture capital industry. This financing gap has proven to be a persistent and fundamental economic obstacle for industrial technologies.

The challenge for most startups is that without operating track records or large balance sheets, they are unable to secure lower-cost debt capital to get to scale. This means that they typically need to raise higher-cost equity or some combination of equity, mezzanine financing (if available), or higher-cost debt (which often isn't available) to build early commercial manufacturing plants. More expensive forms of financing reduce the profitability of producing any technology and make it harder for investors at each level to realize competitive returns.

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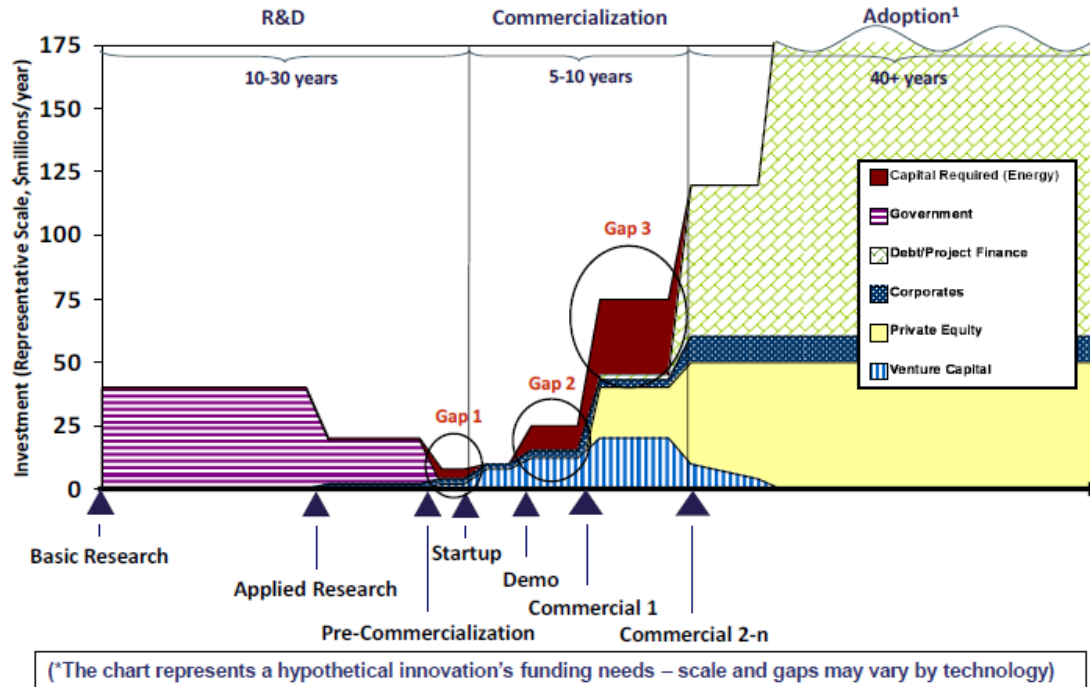
<sup>19</sup> <http://www.greentechmedia.com/articles/read/First-Solar-Surprises-With-Big-2013-Guidance-40-Cents-Per-Watt-Cost-by-201>

<sup>20</sup> Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report, Data: Thomson Reuters



The result has been a series of financing gaps that exist for scaling larger industrial technologies that need to reach a minimum efficient scale to be competitive.

### Capital Investment Profile of a Cleantech Innovation



Source: Mohr Davidow Ventures.

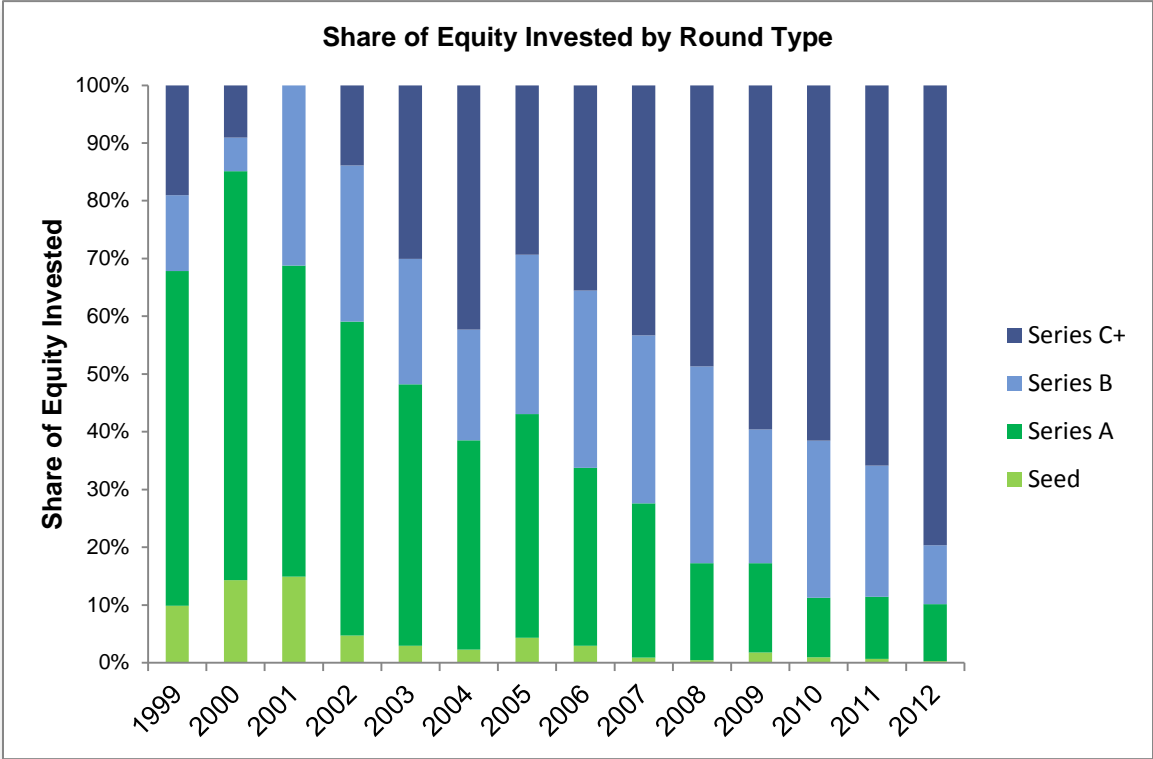
<sup>1</sup> The capital investment associated with adoption is depicted to indicate that it may well exceed \$175 million/ year.

Venture capital has historically been able to bridge financing gaps in many sectors. Where it works, the results have been transformative. While under 0.2 percent of GDP is invested in venture capital each year, more than 21 percent of GDP is generated by companies that were originally venture-backed, and 11 percent of all private sector Americans are employed by these companies. But in energy, the magnitude of capital requires many other investment partners.

At the same time, the companies that are developing these technologies often do not have the financial structures, cash flows or tax profiles to take advantage of most of the energy tax provisions currently in place. Even some of the policies targeted specifically at novel technologies, such as the IRC Section 48c manufacturing tax credit, are proved to be inaccessible to smaller companies because of qualifying criteria that didn't accommodate the funding cycles of such fast growing companies.

Even in the best market conditions, with robust financing options, many promising energy technologies are not able to overcome these gaps. Over the last few years, changes in market

conditions, instability in financing, and wavering policy commitment have eroded investor confidence in energy technologies. As a result, the financing gaps have grown larger and venture capital has begun to pull back from investing in new innovations in heavy industrial applications, including energy. Venture investors continue to support existing investments, and family offices and corporate investors have increased investments in the sector. However, we have seen a marked decline in early stage investments in energy technologies. This decline is concerning for the future of energy innovation.



Source: OnRamp Capital analysis (aggregate data from i3, venture source, NVCA)

A healthy innovation process, particularly in energy, depends on a stable ecosystem of funding partners that includes venture capital, private equity, corporate investors, project finance, and other debt providers. If we as early stage investors don't believe that low-cost capital will be available to scale these technologies in manufacturing plants or utility scale projects, then there is no way we will invest in the early technology development in the first place. Thus, financing gaps at any stage have a rapid domino effect on the rest of the financing ecosystem, and innovation funding begins to dry up at all stages.

As I mentioned, large strategic corporate investors have begun to increase their investments in the sector over the last couple years. These "strategics" now account for 10.4 percent of

venture type investment in energy technologies.<sup>21</sup> Strategic investment is a critical piece of the equation. But most strategic investors have historically relied on venture capital for the earliest stages of investment and face legal and structural challenges investing in the earliest stages of the innovation process. OnRamp Capital and other models are emerging to help address this constraint, but the bottom line is that without the promise of low-cost capital to scale new energy technologies, fewer entities are actively investing in the kind of core energy innovation that is needed to continue progressing the industry. If investments decline so too will the interest from entrepreneurs and scientists. We risk losing the accumulated knowledge and talent we have developed over the last decade, and it will take a long time to rebuild these innovation ecosystems.

### **Solutions: Certainty, Technology Neutrality, and Targeting Innovation**

As Congress considers reforms to the energy tax code, the primary challenge is to create more consistency across technologies to ensure a level playing field that encourages the market to invest in new technology development. Consistency, certainty, and a focus on innovation will be critical to attracting private capital to close the funding gaps associated with commercializing new technologies.

For federal policy to successfully unlock continued innovation, it will need to specifically consider the energy sector's scaling challenges for unproven technologies and work to accommodate the constraints of smaller emerging companies. Early stage investors can only take risks on a new technology if we believe the talent is available to develop it and that other investors and acquirers will be there to invest in the technology along the way. Other investors will only be there if the market need is persistent over a long period of time. Therefore, any solutions that the government provides need to have the same persistence and stability.

Tax provisions should prioritize innovative technologies, and they need to be flexible, efficient, and technology neutral. Above all else, they must be predictable. Investors need to know that if they invest in a company that unlocks meaningful innovations they will be able to finance the company to scale.

In order to meet these criteria, we propose the creation of a new energy innovation manufacturing tax credit. It is a new type of structure that was developed specifically to address the need for certainty, a level playing field, a focus on innovation, and a the need to draw private capital in to address funding gaps rather than rely on the government to do so. Such a credit would address the early stages of proving and scaling a technology and then force new innovations to compete on their own two feet. Whereas almost all existing credits focus on the

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<sup>21</sup> Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report, Data: Thomson Reuters

deployment of fully proven commercially available technologies, this credit would focus on accelerating the adoption of new and innovative technologies in the marketplace.

The credit addresses the persistent challenge of how to create a technology neutral manufacturing credit that is permanent without creating permanent dependence through the following:

- 1) The credit would provide incentives to companies as they scale an innovation and automatically sunset once a company hits a specified volume of production of that specific innovation. The volume limit would be based on estimates of the production volume needed for any given technology to reach commercial scale. Not surprisingly these vary by sector, but they are relatively consistent across electricity and fuels technologies. The volume based structure ensures that credits are provided only for actual production and that no company can take the credits indefinitely.
- 2) The credit also uses a secondary cap that limits the credit to a portion of the qualifying capital expenditures associated only with the portion of capital invested to enable the innovative technology. Such a cap ensures that companies must invest in new innovations or enabling technologies to receive the credit.
- 3) The credit would be technology-neutral across the electricity generation and fuels sectors and accessible to all companies that invest in scaling innovative technologies. Qualifying innovative technology in the proposal is defined on the basis of improvements in function, efficiency, or reliability relative to commercially-available alternatives in both production processes and end-use applications.
- 4) The credit would be available to companies assembling final technologies as well as those component suppliers innovating further upstream in the supply chain. One of the macro policy objectives the proposal seeks to achieve is to incentivize manufacturing and production and stand up the associated supply chains here in the United States.

Our proposal targets a critical financing gap essential to commercializing new energy technologies. Its targeted structure limits the government's role but still creates the long-term certainty necessary to drive private capital into commercialization gaps. It does not specify technology "winners and losers" that potentially bias investment decisions, but allows the private market to decide what technologies are most worthy of investment. It provides support only for companies who are investing in the type of innovation that will ultimately drive down long-term costs and establish a diverse, low-cost, sustainable energy resource mix. And

importantly, it provides the credit only for actual production and only for the period of time where such support is most needed in the current financing ecosystem.

There are companies across the country developing innovative energy technologies that would benefit from such a tax credit. According to the National Venture Capital Association (NVCA), there are companies in virtually every state represented by Members of this Subcommittee. These are companies -- from Texas, Michigan, Montana, Utah, and many others -- who are starting up new businesses around innovative energy technologies such as advanced batteries, underground coal gasification, nuclear power systems, solar, wind, and many others that will help transform the energy industry for decades to come.

The bottom line is that if we are serious about filling these gaps in sectors that have high strategic value to our nation, then government needs to create more enduring structures that can evolve with the market over time.

## **Conclusion**

Let me conclude with a note of urgency. The global energy landscape is changing. New technologies are emerging, and the economic strength of our economy over the next several decades will depend not just on how effectively we use existing resources, but on how we choose to cultivate newer sources of energy.

The energy industry as a whole must continue to innovate and adopt new technologies to provide the strong economic base that the U.S. needs to remain competitive. To do so requires a new way of thinking about energy policy, and particularly tax policy, that can be applied consistently across the entire energy industry and that provides the long-term certainty that investors and corporations require to make rational decisions.

This committee has held many hearings on the deteriorating competitive position of the United States in new energy markets *vis a vis* China, Japan, Korea, and Germany, so I will not recount those details here. As the U.S. emerges from recession it is critical that resources should be carefully targeted at the most effective ways to strengthen the American economy. We need to remember that our legacy of innovation is uniquely American and has driven our success over the last century, but it can't be taken for granted. Federal policy plays a critical role in whether we continue to manufacture new American energy solutions that will keep us competitive. We have begun to see some of the limitations of our innovation process. It could not be more urgent to reduce the uncertainty of our current tax credits for alternative energy technologies and explore the creation of innovative, performance-based tax credits that are permanent and provide certainty, but do not create dependence.

In this 113<sup>th</sup> Congress, the tax code is clearly front and center. I believe we have a rare opportunity to streamline the tax code to make it more efficiently support the development of the next generation of technologies. The focus must shift to accelerating the rate of innovation, continuing to reduce the costs to taxpayers, and reducing the long-term dependence on government support. Such a transformation need not be complicated. The tools and approaches already exist. But we must work to rationalize these structures to better support the innovative companies that fuel our economy. We have the talent, the capital markets and the capacity to lead in energy technology. I look forward to the opportunity to work with this Committee on addressing these challenges moving forward.