

Testimony of Will Coleman, Mohr Davidow Ventures
Before the House of Representatives Committee on Ways and Means
Joint Hearing on Energy Tax Policy and Tax Reform
September 22, 2011

Thank you Chairman Tiberi, Chairman Boustany, Ranking Member Neal, Ranking Member Lewis, and distinguished members of the Committee. I appreciate the opportunity to be here today. It is an honor and a privilege to speak with you on issues that are so critical to our nation.

I am Will Coleman, a partner at the venture capital firm Mohr Davidow. We invest in early stage companies on behalf of some of the largest endowments, foundations, and families in America. Since 1983, we have funded over 250 companies, helping entrepreneurs transform new ideas into thriving businesses in information technology, life sciences, and energy.

We were one of the first mainline funds to move into the energy space, and have since invested in a range of sectors including bio-chemicals, energy storage, solar, coal gasification, and transportation among others. We have seen first-hand the challenges of building new companies in the sector. We have also seen how public policy directly and indirectly impacts private sector capital flows and the viability of emerging companies.

I am here today to share some perspective from our experience and to propose that we take a hard look as a nation at how the government can create a more supportive environment for economic growth.

Tax policy is a key element. In the energy sector, tax reform offers an opportunity to level the playing field, simplify the tax code, and make it more accessible to emerging companies. We need a tax code that consistently supports innovation and draws private capital in to drive the long term growth our economy depends on.

Energy Innovation: The key to enduring economic growth

As venture investors, we focus on areas that have high potential for growth. Our track record shows a clear linkage between the innovative activity we support and the impact on the economy. While under 0.2 percent of GDP is invested in venture capital each year, over 21% of GDP is generated by companies that were originally venture backed, with 11% of all Americans employed by these companies.

Energy – particularly the global transition to next generation forms of energy – remains one of the largest growth opportunities we have seen in our time. Global investment in renewable energy jumped 32% in 2010 to \$211 billion, according to Bloomberg New Energy Finance¹ and the International Energy Agency (IEA) further projects energy demand to grow 36% between 2008 and 2035. Such demand creates a massive and growing global market opportunity.²

This transition also happens to be critical to our ongoing competitiveness. As a nation, we depend heavily on access to stable, low-cost energy sources to fuel economic growth and ensure national security. 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 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.”³

Over the past few years other nations have recognized the opportunity in energy. China alone has committed \$738 billion by 2020 to meet their targets. Some would argue that we cannot

¹ United Nations Environment Programme and Bloomberg New Energy Finance. Global Trends in Renewable Energy Investment, 2011. p. 6

² International Energy Agency. World Energy Outlook 2010.
http://www.worldenergyoutlook.org/docs/weo2010/WEO2010_es_english.pdf. Accessed September 15, 2011.

³ U.S. Department of Commerce, [*Patent Reform: Unleashing Innovation, Promoting Economic Growth & Producing High-Paying Jobs*](#). 2010

afford to outspend the Chinese. However, I cannot accept that premise. Our economy is still two times larger than China's with one quarter the population. The US private sector can absolutely out-innovate and out-invest the Chinese government, but we need the policies in place to draw U.S. private capital and foreign capital back into the U.S. economy.

Tax policy is one critical tool. Over the last 30 years the tax code has become an increasingly popular vehicle for government policy and a significant portion has been dedicated to energy. However, very little of the code has been effectively targeted at jumpstarting the innovation that fuels most growth.

Government: A key player in energy

We have undergone technology transitions before, and it is important to recognize that each time government has played an active role. According to a forthcoming report from Nancy Pfund of DBL Investors, the average annual inflation adjusted federal spending on oil over the first 15 years of its deployment was 5 times greater than what we have spent on renewables, and nuclear was 10 times greater.⁴ Even today, many of these programs continue.

The current state of the energy industry is a product of over a century of public policy and investment with which new entrants must contend. Over the last several decades, layers of tax policy have been woven into the business operations and investment decisions of most energy companies. Some of these supports are direct, energy-focused policies such as royalty relief and exploration credits. Others are indirect tax treatments and benefits leveraged heavily by the industry incumbents such as foreign tax credits, Master Limited Partnerships (MLPs), accelerated depreciation, tax-exempt bonding, and numerous others that are rarely considered as part of the energy subsidy equation.

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

⁴ Nancy Pfund & Ben Healey. *What Would Jefferson Do? The Historical Role of Federal Subsidies in Shaping America's Energy Future*. DBL Investors, Sept. 2011 (forthcoming).

domestic oil and gas development and production.⁵ In addition, tax advantaged structures such as MLPs, which are targeted at 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 which provide relief for “qualifying production activities” reduces the corporate tax rate by approximately 3% according to the American Petroleum Institute.⁶ Foreign Tax Credits, 40% of which are used by the petroleum industry, provided an additional \$42 billion in relief in 2008 alone.⁷ These are just a few of the current incentives.

My point is not to question the appropriateness of these incentives. Many of these direct and indirect supports have historically 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, we must acknowledge that they exist and that they significantly influence investing and operating decisions. Most of these credits focus on oil, gas, and natural resource extraction rather than alternative technologies, and most are designed for 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 kind of innovation that can significantly impact cost or performance; and (2) it makes it more difficult for new entrants to enter the market and compete.

The energy industry is already slow to adopt new technology, and so the current tax code perpetuates the status quo. 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.⁸ In the utility sector, the major utilities employ on average less than 5 people in

⁵ Joint Committee on Taxation. *Estimates of Federal Tax Expenditures for Fiscal Years 2010-2014*. Government Printing Office, 2010.

⁶ American Petroleum Institute. *Repealing the 199 Manufacturing Deduction for Oil and Gas Companies Puts Jobs at Risk*. February 2011.

⁷ Internal Revenue Service. *Statistics of Income Tax Stats, 2008*. Corporation Complete Report Publication. Accessed May 26, 2011.

⁸ Congressional Research Service. *Research and Development by Large Energy Production Companies*. August, 2011.

R&D roles per 1000 employees. This is the lowest level of any industry.⁹ These numbers are a result of many industry dynamics, but also reflect how little incentive exists for energy companies to invest in new technology.

The challenge to investing in new energy technologies has not been a lack of technology solutions or the underlying economics; it has been overcoming the resistance in the market to investment in innovation and adoption of new technology. A tax code that fails to support innovation simply compounds this market failure. We face a global competition to lead the largest energy transformation in decades, but the bulk of federal investment in energy remains focused on incumbent technologies. As global demand continues to climb and the cost of conventional fuels continues to rise, the U.S. needs to recommit to supporting the innovation required for the country to remain competitive.

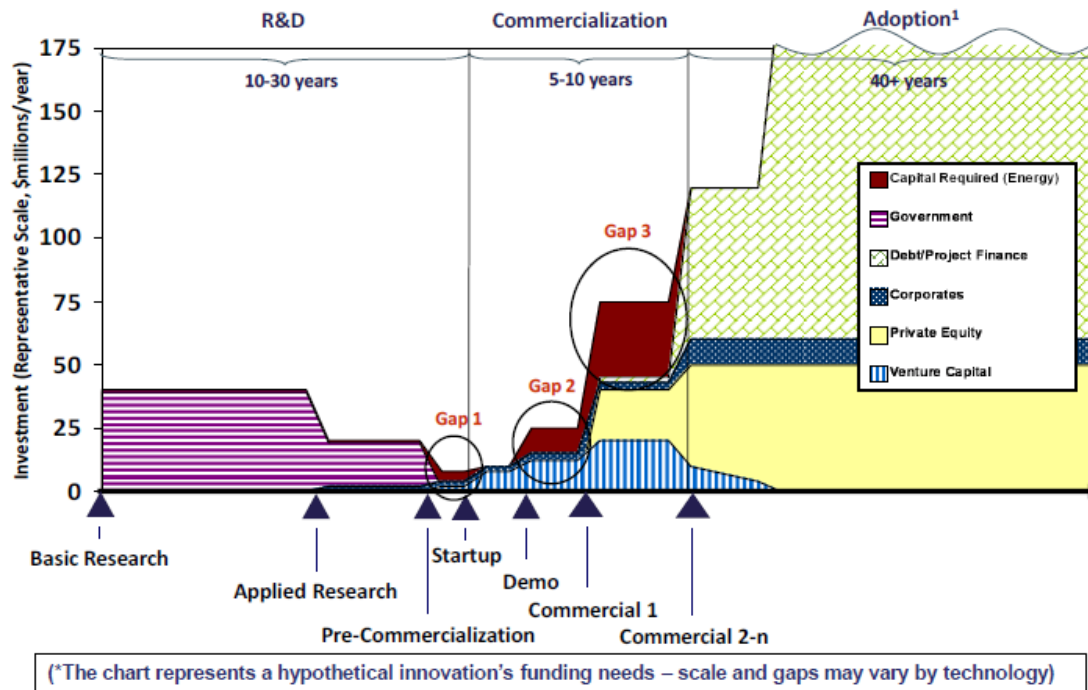
Tax policy must address the commercialization gap

Our premise and our requirement as an investor has always been that we invest in technologies and companies that, regardless of political regulation or subsidy, will be able to stand on their own two feet and compete on a level playing field within the lifespan of our investment. However in energy the playing field is not level.

While all emerging technologies do not necessarily need a perfectly level playing field, they do need a market that rewards long term performance. Almost all new technologies start out with much higher cost bases than their mature competition. Over time, with development and scale, these costs are reduced. As investors, we deploy our capital to unlock the rapid cost reductions at the front end of the curve. However, a significant portion of the cost reduction comes through the scaling that occurs in the early commercial deployment of a technology. In the energy industry, it is these stages that require significant capital, in some cases well beyond the capacity of early investors.

⁹ 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>

Capital Investment Profile of a Cleantech Innovation



Source: Mohr Davidow Ventures.

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

The chart above depicts the challenge of scaling a new technology in energy and the ramp in capital requirements. The capital required to deploy a technology is often orders of magnitude larger than the cost of developing the technology. The added challenge is that technologies at these early stages of development are not proven and therefore not “bankable”. Thus, lower cost debt financing is unavailable to these technologies. 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 proving to be inaccessible to smaller companies because of qualifying criteria that don’t accommodate the funding cycles of such fast growing companies. As a result, some of the most compelling technologies never receive the support they need to scale and compete.

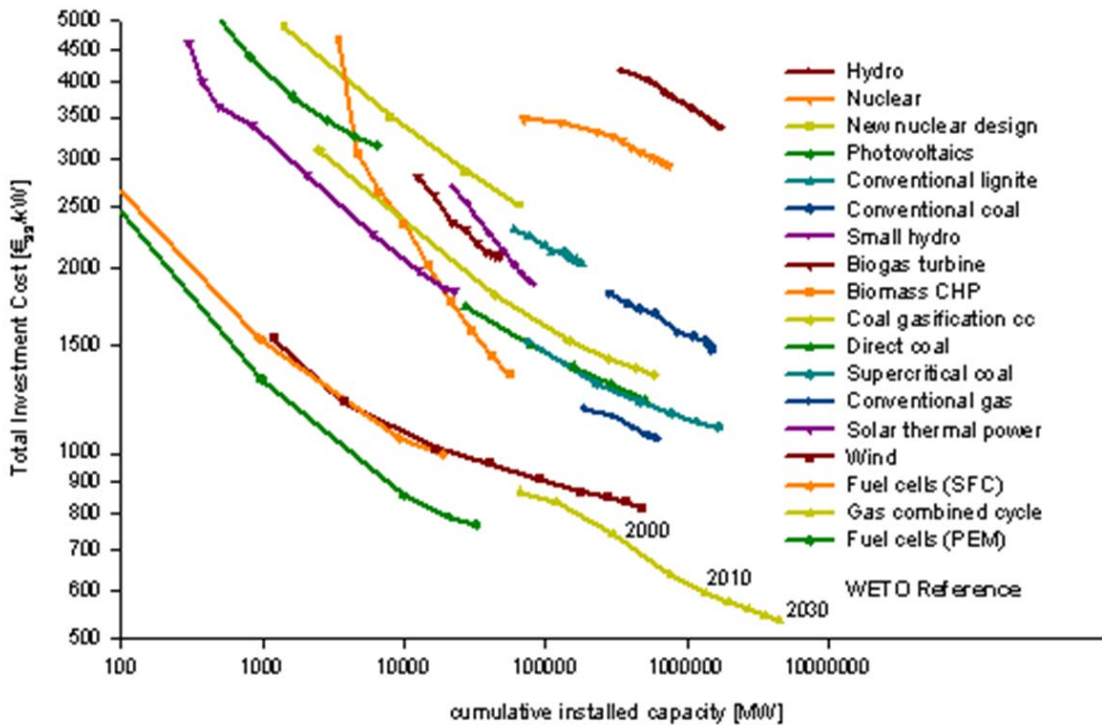
Scaling is critical to innovation

The current debate over energy tax policy is largely a technology debate. Technologies are pitted against each other, and the result is that the government must necessarily pick winners and losers. Stakeholders are forced to engage in semi-annual wrestling matches over the balance of incentives between oil and gas, wind, solar and so on; and whether a given technology still needs incentives.

This technology centric debate is broken for two reasons: (1) even within single technology categories, each solution has differing economics and benefits; and (2) it does not account for the varying stages of maturity in each of the categories.

One fundamental premise of technology development is that each technology reduces its costs over time through a combination of technical innovation and scaling. The result is that each technology undergoes a “learning curve” that drives costs down. Different technology solutions – even within the same vertical – can have different learning curves and development trajectories.

Historical Learning Curves by Technology (over volume)



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

If we as a nation want to reap the benefits of continued cycles of innovation, our focus should be on getting new technologies down their respective cost curves and to a point of maturity where they can compete on their own two feet. In the same way that an infant needs more support than a teenager, innovative technologies require more support than mature technologies. At some point, established technologies must be able to compete on their merits.

For tax policy to effectively drive domestic innovation, it will need to address scaling challenges and accommodate the financial constraints of smaller emerging companies. Ideally policy would be structured in a manner that encourages growth across a wide range of energy technologies, allows the private market to determine winners and losers, and creates opportunities for new and improved technologies to access the market and compete on a level playing field.

A New Approach: Innovation Tax Policy

A new approach to energy tax policy that focuses on unlocking innovation is possible. The structure would create a simple volume-based production tax incentive across a broad array of technologies, designed to support technologies as they scale and roll off as they hit maturity. Such a framework would provide certainty to investors across all stages and help to attract capital required to fill development gaps in the commercialization process. Existing technology-specific credits would be replaced with a common framework that supports **all** energy technology innovations. These credits would be slowly phased out over the full technology development cycle: a full credit would be provided to technologies as they successfully advance beyond the pilot scale; this would gradually ramp down as the technology approaches commercialization.

Streamlining such a structure across a wide range of energy technologies, both currently under development and yet-to-be patented, would require the framework to maintain a measure of flexibility, but also support a firm foundation. While certain technology verticals inherently possess differing timelines associated with development cycles, a set of criteria could be established to create front- and back-end parameters to define the “stages” associated with the phased approach. These parameters would be industry specific and would help group technologies into categories based on characteristics and functionality. For example, technologies under the umbrella of energy generation could be measured perhaps by megawatts (MWs) created, with each stage beyond construction of the first demonstration facility defined as a percentage of the industry average annual MW generated at commercial scale. Fuels could be viewed similarly through the lens of gallons-produced, relative to an industry average at commercial scale. The creation of stage-defining parameters spanning multiple technology categories would more effectively allow the private market to pick winners and losers compared to our current structure.

Establishment of discreet, transparent eligibility criteria would be essential to achieving the desired certainty for the investment community. Such criteria defining the universe of energy technologies eligible for such a credit could be based on the technology’s impact on broad

policy goals including, potentially: energy security, national security, public health and economic return/domestic growth potential. The umbrella of eligibility could be defined using both proven and projected practical benefits of the technologies, connecting the technologies directly to firmly bipartisan policy objectives. A shift in tax policy to such a structure would (1) end the current practice of the government picking long-term technology winners; (2) refocus federal support on early technology deployment where it is needed most; and (3) encourage private investment in innovation, which is a critical component to unlocking new economic growth.

Conclusion

In order to drive investment into the energy sector, the tax code needs to be restructured to encourage corporations to invest in new technology, align with the needs of start-up companies, and provide access to a market currently blocked by policies that cater to incumbents.

In cases where the system **does** currently provide incentives and tax credits to support new technologies, many of them are not designed for small emerging companies. Startups do not have the balance sheets or track records of larger corporations and have trouble securing and monetizing the existing credits and incentives. As a result, the current system forces startups to either construct a consortium of unnatural third-party relationships or go to market through the large incumbents, which can have dramatic impact on their value and investor interest. More simply, the limited ability of start-ups to take advantage of tax credits hampers their ability to grow, innovate and create jobs.

Once tax breaks are ensconced in the code they are incredibly hard to extricate. The energy industry is a robust example of how these breaks pile up. But I believe we have a rare opportunity to re-assess whether the existing credits accomplish the goals that they were created to serve or the priorities we now need to meet. In today's fiscal environment we need to make every dollar work toward stimulating growth and incentivizing investment in the next generation technology that will support our competitiveness. I am not saying that we need to

cut all energy credits, but I am saying that we need to simplify them, refocus them, make them technology neutral, and make them easier for emerging companies to access.

To this end, we are calling on the federal government to articulate a stable, long-term, rationalized tax policy based on the framework outlined above that the private sector can invest behind. Such a system will help level the playing field within energy markets, encourage market access for emerging technologies, and better reflect the needs of the innovative companies that fuel our economy.

One thing I am certain of is that we will lose as a country if we resign ourselves to the technology of today. Other nations are looking to be the America of tomorrow. We must be willing to evolve as an economy and nation not only to keep pace, but to continue to lead the world in innovation.