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Benchmarking Energy Policy:

Scoring the Impact of Proposed Policies on Private Investment

WHITE PAPER

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Executive Summary

Government energy policies—be they national, state or local—can interfere with private investment and market forces and if not calibrated properly. Policies must be carefully balanced between private investors and the public good, and proposals must be vetted to ensure this balance at the earliest possible stage. And yet, despite this need, no single organization applies an objective market-oriented analysis to government energy proposals.

To facilitate development of successful energy policies to address national security, economic and environmental challenges, the Milken Institute has developed an analytically based scoring system using seven objective standards, listed in the introduction. This white paper focuses on assessing the balance between government and markets, so that better policies can be constructed to prevent, among other things, the crowding out of private investment, while promoting appropriate investment in new, often risky, technologies.

To accomplish these ends, this paper lays out four criteria important to understanding how policies will influence private investment:

1. Do policies lead to the fair allocation of risks and rewards between the public and private sectors?
2. Will policies establish stable incentives and regulations?
3. Do policies provide clarity regarding incentives and regulations?
4. Will policies allow for proper and flexible investment structures?

After examining public policy with regard to these four criteria, using a number of analytical tools (including case studies), we propose in this paper a simplified method of scoring public energy policies. (These scoring criteria can be applied to other areas where government and private-sector investment intersect.) To that end, we have identified the following policy principles as contributing to the appropriate balance between government and the private sector:

- The objective of government investment in an energy technology is to maximize private investment, not to replace it.
- Since private investment may lag public investment by years or even decades in energy, a long-term perspective on government support is critical.
- Because all investments involve risk, government investment must be assessed on a portfolio basis, not a project basis.
- Although it is impossible to know which investments will pay off, it is easier to identify technology and resource areas that have the potential for great long-term impact, so capacity for scale is an important criterion for government support.
- Government investment should go where private investment is reluctant to go, such as projects where spillover benefits result, suggesting the objective of technology development over corporate finance.
- Overcoming commercialization and scale-up problems with regard to technology (often dubbed a “valley of death”) is an important function for government support.
- Government support should decline on a per-unit basis as technologies move from basic research to industrial maturity. However, the decline should be gradual and predictable,

or else the policy would introduce risk to investments in research and development, manufacturing scale-up and commercial deployment.

- Government regulations should be stable and clear to minimize legal costs and complexity and regulatory risk.
- Since the deployment of private capital is the long-term objective, policy should not arbitrarily restrict the private sector from using favorable investment structures.

Finally, government faces a difficult task – investing in energy technologies that may take decades to have a significant impact, if they ever do. And, while it is true that government failures make news, the bigger truth is that public policy, when correctly applied, can lead to breakthroughs with lasting, positive effects. This paper looks at successes as well as missteps to help legislators formulate better policy. This study is an element in the Milken Institute's larger research effort to promote effective energy policymaking.

I. Introduction

With the United States expanding energy production through newly available sources as well as novel technologies to access conventional sources, it does so without a national plan to guide its progress. The nation has gone without a comprehensive policy for the past 50 years, when energy became increasingly scarce as U.S. consumption outpaced production and imports grew to fill the gap. In this new era, the U.S. faces concerns regarding economic growth, national security, energy reliability and environmental protection. Some of these issues are longstanding while others have only recently arisen.

To address these concerns, federal and state officials have made a wide range of policy proposals. However, problems in design may hinder some policies. Other approaches may have unintended consequences, or may accomplish one goal to the detriment of another. To better assess the effectiveness of proposed energy policies and reveal any likely problems in advance, the Milken Institute suggests a benchmarking framework that scores policies against seven objective standards. The seven standards are:

1) *Will it make the United States safer*?
2) *Can it make the United States more economically secure?*
3) *Will it lead to using more domestic energy rather than imports? And, given that energy independence is now a possibility, how close will it take the country to that goal?*
4) *Will it protect the environment?*
5) *Does it allow a menu of fuels and technologies*?
6) *Will it encourage private investment? How will it balance government and markets*?
7) *Will it provide smarter regulation*?

In this paper, we focus on the sixth standard, whether a policy encourages private investment and how it balances government and markets. We have chosen to examine this standard more closely for three reasons. First, the effect on private investment has dimensions of great importance that are not immediately apparent. Second, the Milken Institute has expertise in evaluating what markets need to function well and the impacts of healthy versus constrained markets. Third, since private investment is necessary for the widespread development and use of energy resources and technologies, the effectiveness of any energy policy will depend largely on whether it induces private investment.

Effect on private investment is reflected in the four criteria that we use to score policies: (i) fair allocation of risks and rewards between the public and private sectors, (ii) stability of incentives and regulations, (iii) clarity of incentives and regulations and (iv) allowance of investment structures. Although additional factors affect private-sector investment, we limit the criteria to those that are broadly significant to the energy sector and that would not better fit under one of the other benchmarking standards, particularly that of smarter regulation. For each criterion, we include one or more examples to illustrate the beneficial or adverse effects of policies on private investment. Our purpose is to show how the fundamental structures of the policies sway the market, not to comment on details of the illustrative policies, endorse their objectives or pick winning technologies or approaches. Our sole objective is to assess policies with respect to private investment.

For each criterion, we score policies based on the direction of their likely effects on private investment, from negative to positive, as well the magnitude of those effects, from minor to major. To compute each score, we consider factors related to direction, such as investment risk, cost and availability of private capital, and use of public funds, as well as factors related to significance, such as resources and markets affected, scope of the policy and size of the budget. Finally, we aggregate the scores of the individual criteria into a combined score for private investment impact. A combined score provides an overall metric to assess how a proposed policy fares with respect to the market. Added to the scores of the six other standards, it will give policymakers and the public full benchmarking across a wide range of measures.

II. Criteria

2.1. Fair Allocation of Risks and Rewards

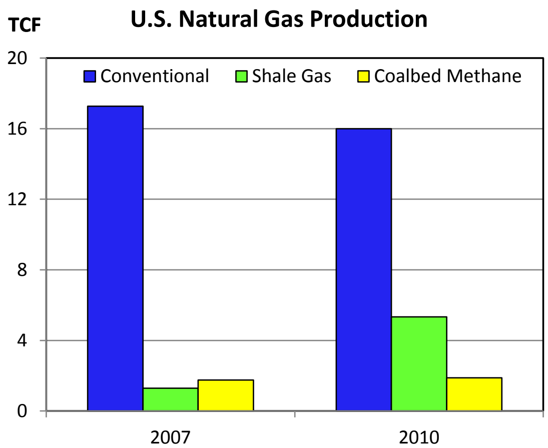
The first criterion focuses on setting the appropriate boundary between government and private investment. Government support, whether through the assumption of risks or direct investment, is warranted when the benefits of an investment spill over to others who have not shared in the cost of the investment. In such public-good circumstances, the private markets will under-invest because investors cannot claim the full amount of the resulting benefits. Basic energy research is an unambiguous situation where the benefit (knowledge) will spill over to others not involved in the endeavor. However, going from basic research to applied research to demonstration projects to commercial deployment, the proportion of benefits that spill over tends to diminish. As a result, government investment would be increasingly likely to crowd out private investment and benefit only the project supported.

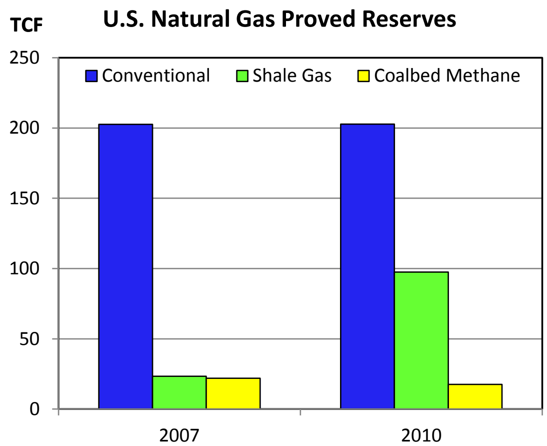
The Department of Energy's Loan Guarantee Program (DOE LGP) provides a recent example of government support crowding out private investment. Designed to bolster innovative energy manufacturing and generation projects, the LGP was broadened by the 2009 Recovery Act to also support commercial technologies due to concerns that even commercial projects might face difficulties in the aftermath of the financial crisis. However, loan guarantees were not the only form of government aid. In the instance of the Shepherds Flat wind project in Oregon, there was also a cash grant equal to 30 percent of the capital costs, state tax credits, accelerated depreciation and a price premium paid for the electricity generated. In a White House briefing memo to President Obama, the authors note that the sponsor's equity was only 11 percent of the project's cost, and they estimate the return on equity to be 30 percent.[1] Given the attractive economics in the absence of the loan guarantee, it is likely that private markets could have financed the wind farm.

Shepherds Flat highlights the broad range of subsidies that may exist for energy projects. Subsidies may be at the federal, state or local level and may be explicit or implicit in form. Explicit subsidies include grants, tax credits or deductions, and loans or loan guarantees. However, subsidies may also be implicit, such as financial incentives that result from policy mandates or caps. In the case of Shepherds Flat, the mandate of California's Renewable Portfolio Standard allowed for the sale of electricity to Southern California Edison at a premium price. Implicit subsidies may also be in the form of renewable energy certificates or carbon permits that have a market value. As all subsidies create value for projects, governments must take into account all other incentives available to avoid crowding out the private sector.

The bankruptcy of Solyndra was a well-known loss for the DOE LGP. Nevertheless, while government-backed efforts to find innovative energy solutions carry the risk of failure, their potential spillover benefits greatly exceed those of commercial projects that rely on less-speculative technologies.[*] Furthermore, government investment in less-risky commercial projects may displace private investment—with little external benefit. While the results of a single project may be important to a private investor, government investments are dispersed within and across sectors, and thus success must be evaluated on the portfolio level. In addition, since the ultimate success of government funding will depend on the amount of private investment, the potential for large-scale impact is an important criterion for policymakers.

Hydraulic fracturing for shale gas is an example of how government investment that focuses on innovative-but-risky technologies can result in an enormous commercial benefit. As of 2010, shale gas accounts for 23 percent of natural gas production and 31 percent of proven reserves in the U.S., up from insignificant percentages a decade earlier.[2] Although hydraulic fracturing had been used since the 1940s to extract natural gas from limestone formations, the geology of shale had proved difficult for applying the technique. Beginning in the 1970s, partnerships between predecessor organizations to the DOE, national labs, universities and industry led to breakthroughs in drilling. These included directional drilling in shale, diamond-studded drill bits, three-dimensional micro-seismic imaging and, finally, a public-private venture in 1986 to demonstrate multistage horizontal fracturing in the Devonian shale in the Appalachian Basin.[3]





Source: U.S. Energy Information Administration
Notes: 2007 was the first year that EIA broke out shale gas production and reserve data. TCF stands for trillion cubic feet.

[*] Rather than focusing on its riskiness, a more sensible critique of the Solyndra loan guarantee is that the government was, in effect, financing a corporation rather than investing in a technology. Corporate finance requires an expertise in company operations and market conditions that only private investors possess. In contrast, the DOE and the national labs have tremendous knowledge of technology and thus should invest with that focus.

This public-private work was crucial for Mitchell Energy, after making further technical advances in the 1980s and 1990s, to extract gas on a commercial level from the Barnett shale in Texas in 1998. Moreover, from 1980 to 2002, a production tax credit of $0.50 per thousand cubic feet of unconventional natural gas enabled industry to continue developing the technique before shale gas production became economically competitive. While it is impossible to know whether shale gas development would have occurred without government support, it is worth noting that there are large shale deposits in many other countries with oil and gas industries, such as the United Kingdom, France, Norway, South Africa and Russia, but only in the U.S. was the technology pioneered. The example of shale gas also demonstrates that new technologies can take decades to reach commercial viability. Thus, government energy investments must be assessed from a long-term perspective.

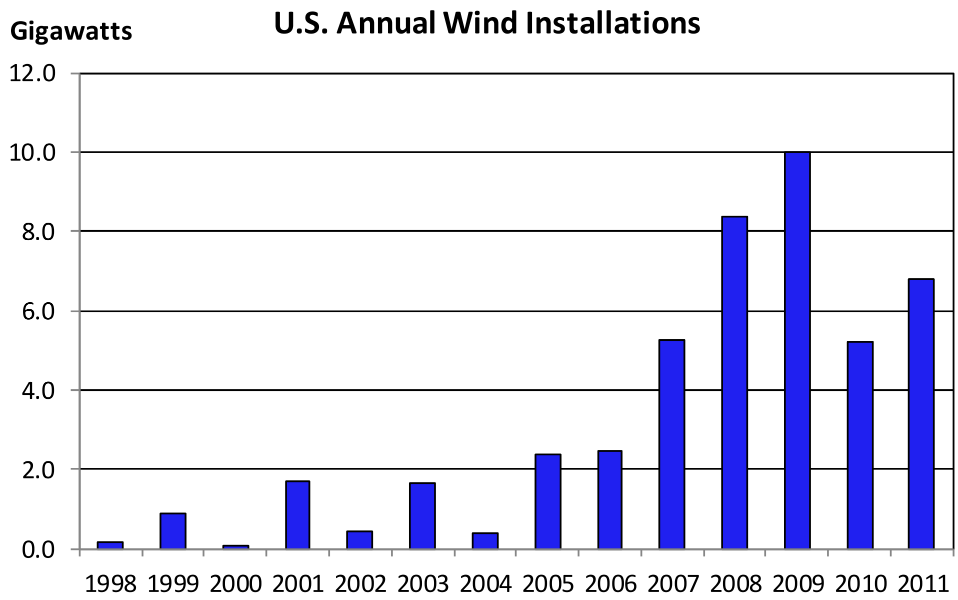
2.2. Stability of Incentives and Regulations

Among the most important considerations for private investments in energy is the stability of the incentive and regulatory environment. Project developers, utilities, financiers, manufacturers and others must know what the subsidies, taxes, mandates, caps, standards or other policy instruments will be in order to make appropriate investments. If the incentive or regulation has a lifetime that is too short, investments may be limited because they could prove unprofitable if the policy expires and is not renewed. Likewise, if there is a risk that a policy will be cut short or altered negatively, investors will be wary of committing capital. Lastly, private financing will be especially difficult if there is only a certain probability of policy being enacted and no details of what that policy will require.

We distinguish between energy policies that are resource- and technology-specific and those that are sector-wide. This is because of important differences between the two with respect to policy goals and market impacts. Policies that seek to promote the development or use of a specific new resource or technology should be of a shorter duration. In contrast, sector-wide policies aim for a gradual transition of the entire energy economy, or a particular energy sector, from one phase to another.

The most common recent examples of resource-specific policies have been in the renewable energy sectors, including incentives for using wind, solar and biomass. The rationale for such incentives is to scale up manufacturing, promote investment in research and development, and enable learning-by-doing so that renewable technologies will be able to compete with conventional resources. As the industry matures and achieves those goals, the need for incentives declines.

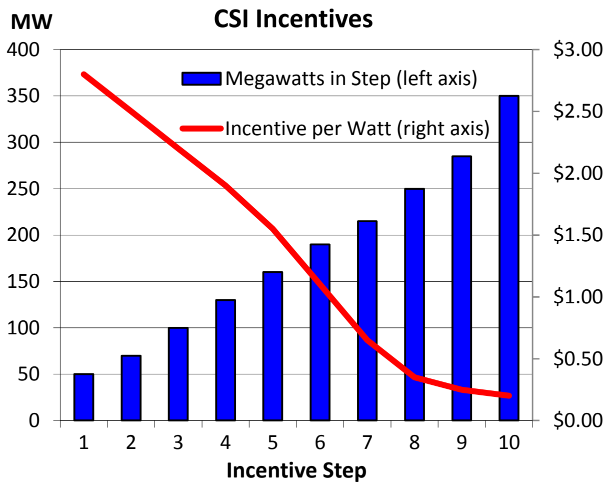
The production tax credit (PTC) for wind provides a useful study in incentive instability.[4] Established in 1992, the PTC underwent a series of expirations (in mid-1999, 2001 and 2003) and extensions (in late 1999, 2002 and 2004). The booms and busts created by this incentive pattern are clearly visible in the number of annual U.S. wind installations, which dropped by 93 percent in 2000, 76 percent in 2002 and 76 percent in 2004.[5] As the wind industry was in a nascent state in the 1990s (only 1.5 gigawatts [GW] had been installed before 1999), it was not until the uninterrupted PTC period beginning in 2004 that the U.S. wind industry achieved significant scale, with more than 50 GW installed by October 2012.[6]

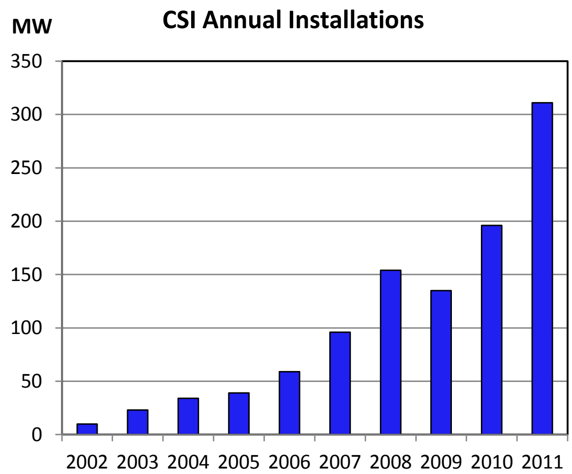


Source: U.S. Department of Energy, "2011 Wind Technologies Market Report"

The PTC is set to expire again at the end of 2013, but despite technological advances in wind power during the past two decades, it has remained constant on a real dollar per kilowatt-hour (kWh) basis since 1992.[7] The PTC was set at 1.5 cents/kWh in 1993 dollars and indexed to inflation, so its current nominal value is 2.2 cents/kWh. Unlike the investment tax credit for solar power,[8] the wind PTC is not based on a percentage of costs, so its amount does not decline even if the costs of wind installations decrease. Furthermore, despite its history of expirations and extensions, the PTC was never set to decline on a $/kWh basis over time, and thus it has remained constant in the face of technological improvement and maturation of the wind industry.

The California Solar Initiative (CSI) illustrates how a resource-specific policy can instead provide for incentives that gradually and predictably decline. The CSI offers incentives for photovoltaic (PV) systems, which started at a high level and subsequently declined in a series of 10 steps as more systems were installed.[9] The CSI set this step schedule in advance, so it was clear to investors how much the incentives would be and how they would diminish as the industry grew in the state. Annual PV installations under the program have grown from 10 MW in 2002 to more than 300 MW in 2011 as pre-incentive system costs, which fell by roughly 30 percent between 2007 and 2011, offset the declining incentives.[10]



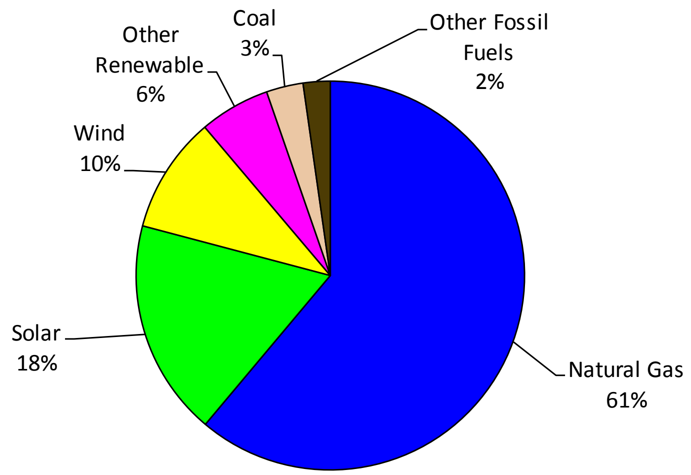


Source: California Solar Initiative

Sector-wide policies, which attempt to gradually shift an energy sector toward a desired outcome, have included regulations and standards to cut pollution in transportation and electricity generation, improve energy efficiency in vehicles and increase the share of renewables in power generation. Such policies are often long term in nature due to the long lifetimes of energy capital stock, the high expense of early stock retirements, and lengthy research, development and planning cycles. Given these long durations, private investment responds not only to current policies but also to speculation on policies that may be enacted years and even decades into the future. However, since future policies are uncertain in their existence, timeframe and details, private sources may hold back investment in the area or may not invest to the full extent that future policy would call for.

Over the past several years, the electricity sector has provided a notable example of how the markets have responded to an uncertain regulatory future. With expectations that a cost will soon be assigned to carbon dioxide (CO_2) emissions but without knowing the timing and details, power generators have planned a majority of new capacity to come from natural-gas-fired plants, as shown in the chart below. Note that these figures come from the Electric Power Annual 2010, published in November 2011, so they do not take into account the recent EPA regulations on CO_2 and only partially factor in lower natural gas prices.[11] The planned additions of solar and wind capacity reflect state renewable portfolio standards (RPS) as well as the 30 percent investment tax credit for solar, in place through 2016.

Planned New Capacity (2013 - 2015)



Source: U.S. Energy Information Administration

While relying on natural gas, which has about half the CO_2 intensity as coal, may not seem like a negative consequence of climate policy uncertainty, it has inhibited costlier options that emit less carbon: nuclear, renewables and coal with carbon capture and sequestration (CCS). The U.S. Energy Information Administration (EIA) expects only five new nuclear units totaling 5.5 GW of capacity to come online by 2020.[12] For coal with CCS, four of the 10 planned U.S. commercial projects have been canceled in the past three years. Without the certainty of a cap or tax on CO_2 emissions, the higher-cost investments in nuclear and coal with CCS have become less viable. Instead, private investors have reasoned that natural gas, with its improved CO_2 profile versus coal along with other beneficial environmental and investment attributes, was sufficient given the uncertain future costing of carbon emissions.

In contrast, stable sector-wide energy policies have successfully engaged markets at the state level, where 29 states have progressively enacted RPS obligations, mandating that an increasing percentage of electricity come from renewable resources. RPS policies have averaged 15 to 20 years from the time of enactment to the year of their ultimate requirements, which range from about 1 percent of electricity sales in Iowa to almost 35 percent in Hawaii. The predictable and gradual nature of these polices allows utilities to plan appropriately, steadily increasing their procurement of renewable generation, and enables the markets to respond accordingly. Since the late 1990s, 27 GW of non-hydro renewable capacity have been installed in states with RPS obligations, and by 2035 an estimated 100 GW will be required for full compliance.[13]

2.3. Clarity of Incentives and Regulations

Related to the criterion of policy stability is the need for clear incentives and regulations. Ambiguous policy may create legal or regulatory risk that will discourage private investment. Legislation with overly broad or otherwise vague language forces government agencies to interpret precise meaning. If this interpretation differs from that of industry, protracted legal conflicts may follow.

The most notable example of regulatory ambiguity has been new source review (NSR) under the Clean Air Act (CAA), principally affecting coal-fired plants. The 1977 amendments to the CAA established NSR to prompt existing stationary sources of emissions, notably coal plants, to install the pollution-control equipment required of new facilities under the 1970 CAA amendments. NSR required that "modification" of a facility that resulted in an increase of emissions would trigger the pollution-control technology requirements, but made an exception for "routine maintenance."[14] However, "modification" and "routine maintenance" were not precisely defined by Congress, leaving the EPA and industry uncertain as to where that threshold lay.[15] After major litigation between the EPA and utilities in the late 1980s and late 1990s, the EPA proposed in 2003 a numerical limit to set the boundary, but courts vacated this bright-line test in 2006 for being incompatible with the broad language of the 1977 CAA amendments.[16]

While NSR has been an extreme case of regulatory ambiguity, both in its impact on the electricity sector and duration of legal disputes, other examples are common. The NSR disputes also highlight the importance of clarity within the legislation itself. Even when the EPA attempted to bring certainty to the regulation, the effort failed due to the broad language of the legislation.

2.4. Allowance of Investment Structures

Since the wide-scale deployment of private capital is necessary for the success of earlier government investments and is generally the final step before broad adoption, the fourth criterion we evaluate is whether a policy restricts or enables private investment vehicles. Given the varying needs of energy resources and technologies, the private sector works best when it has a diversity of financing and investment structures to choose from. In energy, financing innovations can have as much impact on costs and adoption as technological progress. However, if a policy places unwarranted restrictions on financing structures, or favors one industry over another, private investment could be inhibited or distorted. Within this criterion, we focus on two areas: limitations on financing structures by industry and limitations on investment by investor type.

In the first area, a policy may limit advantageous financing structures to particular industries. Two common examples relevant to energy are master limited partnerships (MLPs) and real estate investment trusts (REITs), both of which eliminate most, if not all, taxes at the corporate level. In contrast to corporations, MLPs and REITs allow for taxes to be paid by the investor rather than the corporation (through corporate income taxes), and again by the investor (through taxes on dividends). In addition, MLPs and REITs may be traded on public exchanges, allowing them to reach a broad pool of potential investors and offering them liquidity. However, MLPs and REITs are limited by statute or Internal Revenue Service interpretation to specific uses. For REITs, a large majority of the assets must be "real property," and MLPs are limited to certain "mining, energy and real estate assets."[17,18] Notably, neither structure allows for renewable assets like solar and wind, but the scope of MLPs was broadened by Congress in 2008 to include biofuel transportation and storage assets. Further expanding the definition of REITs and MLPs would eliminate an arbitrary restriction and provide financing mechanisms that enjoy liquidity and tax advantages.

Energy policy may also limit investment by investor type. Investor limitations often occur with respect to energy incentives, which are generally tax credits or deductions. Such subsidies inhibit investment in two ways. First, tax incentives are of no use to non-profit or governmental organizations. Second, energy project developers may not have the taxable income to absorb front-end-loaded tax credits and accelerated depreciation deductions. While tax incentives may be carried forward into the future, doing so would diminish their worth on a present-value basis. For these reasons, wind and solar developers must incur the time and financial cost of finding and partnering with a so-called tax equity investor, usually a large bank or insurance company, to monetize the tax benefits. Tax incentives thus limit the supply of private capital that can flow to projects and raise the cost of financing. The U.S. Partnership for Renewable Energy Finance estimates that having tax-based rather than cash incentives raises the cost of electricity from a representative solar project by almost 20 percent.[19] With a policy aimed at promoting solar technologies for the next four years as the industry matures, it is counterproductive to use incentives that make private financing more expensive.

III. Scoring

For each criterion, we assess the policy's directional effect on private investment as well as the magnitude of its effect. A policy may have a clear effect on private investment (in either direction) but it may influence only a small market. Conversely, the effect may be more mixed directionally but its impact may be widespread. To keep things simple, we categorize directional effects for each criterion in the following way: negative (-2), somewhat negative (-1), neutral or not applicable (0), somewhat positive (+1) and positive (+2). Similarly, we categorize the magnitude of effects as minor (1), moderate (2) and major (3). As we discuss below, projecting the impacts of policies not yet enacted is intrinsically speculative, so we limit the categories to only a few. Multiplying the direction of the effect by the magnitude of the effect gives us a score for each criterion, ranging from -6 (negative and of major significance) to +6 (positive and of major significance).

As our primary interest is in policies that have been proposed but not enacted, precisely quantifying the effects on private investment is impossible. We do not have the advantage of evaluating market data before and after the policies were implemented as we did in many of the policy studies in this white paper. Even for a longstanding policy, it can be difficult to establish exact effects. In light of these difficulties, to score the likely impacts on private investment we focus on factors related to the direction and magnitude of policy effects. Factors associated with direction include investment risk, cost of capital, availability of capital and use of public funds. Factors associated with magnitude include the technologies and resources affected, size of markets affected, financing structures affected and the scope of the policy or size of the budget.

We focus much of our attention on the four criteria to consider how public policy could influence private investment. We also assess relevant examples to gauge the effects of policy on private investment. It is with the understanding of how energy policy *can impact* and *has impacted* the market that we evaluate prospective approaches. Scoring how a proposed policy fares with respect to stability, clarity, risk and reward allocation, and allowance of investment structures, we can infer how the policy is likely to affect private investment.

To calculate a combined score for impact on private investment, we aggregate the scores from the four criteria, giving a total score range of -24 to +24. Note that one or more of the criteria may not be significant to every policy, so scores will more likely fall closer to the center of this range. We then translate the numerical score into a letter grade: A (+10 and above), B (+4 to +9), C (-3 to +3), D (-9 to -4) and F (-10 and below). While it may seem reductive to produce a single letter score for this standard, it is important to view this in the context of the entire benchmarking framework as well as the policymaking process. Since there are seven standards, a single measure for each standard allows for a straightforward benchmarking of the proposed policy. With a score for each standard, policymakers and the public have a summary of the strengths and weaknesses of the policy, which may then lead to a more detailed consideration at the level of each standard.

IV. Conclusion

With respect to energy, leaders face the difficult task of creating policies for which the ultimate results will often only be apparent years, if not decades, into the future. We have examined policies, such as those that supported the development of shale gas, which led to major breakthroughs, but of course it is impossible to know in advance where these successes will lie. For that reason, our objective in benchmarking policy is to identify principles needed for successful policies and to provide scores that reflect these principles. We focus on the principles needed to engage private investment, which is necessary for the success of any energy policy. These principles are as follows:

1) The objective of government investment in an energy technology is to maximize private investment, not to replace it.

2) Since private investment may lag public investment by years or even decades in energy, a long-term perspective on government support is critical.

3) Because all investments involve risk, government investment must be assessed on a portfolio basis, not a project basis.

4) Although it is impossible to know which investments will succeed, it is easier to identify technology and resource areas that have the potential for great long-term impact, so capacity for scale is an important criterion for government support.

5) Government investment should go where private investment is reluctant to venture, such as projects with spillover benefits, suggesting the objective of technology development over corporate finance.

6) Overcoming commercialization and scale-up issues with regard to technology (often dubbed a “valley of death”) is an important function for government support.

7) Government support should decline on a per-unit basis as technologies move from basic research to industrial maturity. However, the decline should be gradual and predictable, or else the policy would introduce risk to investments in research and development, manufacturing scale-up and commercial deployment.

8) Government regulations should be stable and clear to minimize legal costs and complexity and regulatory risk.

9) Since deployment of private capital is the long-term objective, policy should not arbitrarily restrict the private sector from using favorable investment structures.

Endnotes

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[4] The production tax credit (PTC) is a federal incentive that provides a tax credit of 2.2 cents for every kilowatt-hour generated by wind installations during the first 10 years of their lifetimes.

[5] U.S. Department of Energy, "2011 Wind Technologies Market Report" (August 2012).

[6] American Wind Energy Association, "Third Quarter 2012 Market Report," http://www.awea.org/learnabout/publications/reports/upload/2Q2012_Market_Report_PublicVersion.pdf (accessed Nov. 1, 2012).

[7] The PTC was extended again on Jan. 2, 2013, as part of the American Taxpayer Relief Act of 2012. The extension allows a wind facility that begins construction by Dec. 31, 2013, to qualify for the 2.2 cents/kWh tax credit.

[8] The investment tax credit is a federal incentive that provides a credit equal to 30 percent of the capital costs of solar installations.

[9] The California Solar Initiative offers incentives in the form of rebates for smaller projects and per kilowatt-hour payments for larger projects. For simplicity, only the rebate levels are shown in the chart.

[10] California Public Utilities Commission, "California Solar Initiative; Annual Program Assessment" (June 2012).

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