Testimony of Dan W. Reicher

Director, Climate Change and Energy Initiatives, Google.org

Senate Committee on Energy and Natural Resources

Hearing on Legislation to Improve the Availability of Financing for Clean Energy and Energy Efficiency

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Mr. Chairman and members of the Committee, my name is Dan Reicher and I am pleased to share my perspective on legislation to advance the deployment of clean energy technology. I serve as Director of Climate Change and Energy Initiatives for Google.org, a unit of Google which has been capitalized with more than $1 billion of Google stock to make investments and advance policy in the areas of climate change and energy, global poverty and global health. At Google we have been working to lower the cost and increase the deployment of renewable energy through our Renewable Electricity Cheaper than Coal (RE<C) Initiative and also to accelerate the deployment of plug-in vehicles through our RechargeIT Initiative. We have also been working to increase our use of clean power and energy efficiency at Google data centers and offices in the US and other countries.

Prior to my position with Google, I was President and Co-Founder of New Energy Capital, a private equity firm funded by the California State Teachers Retirement System and Vantage Point Venture Partners to invest in clean energy projects. New Energy Capital has made equity investments and secured debt financing for ethanol and biodiesel projects, cogeneration facilities, and a biomass power plant. Prior to this position, I was Executive Vice President of Northern Power Systems, one of the nation's oldest renewable energy companies. Northern Power has built almost one thousand energy projects around the world and also developed path-breaking energy technology.

Prior to my roles in the private sector, I served in the Clinton Administration as Assistant Secretary of Energy for Energy Efficiency and Renewable Energy, the Acting Assistant Secretary of Energy for Policy, and Department of Energy Chief of Staff and Deputy Chief of Staff.

There is an established pathway for investment in clean energy:

- It often starts with government investment in early stage high risk technology research
- It moves to corporate and venture capital funding of technology development
- It then proceeds to actual deployment of technologies through project finance and other mechanisms.

Your bill is focused primarily on the final stage of this continuum – the deployment of clean energy technologies at a scale significant enough to actually address our energy-related challenges like climate change, national security, economic competitiveness, and poverty alleviation

The good news is that there is an array of clean energy technologies that have been developed with government and private sector investment that could address our many energy-related challenges.

The not so good news is that investment in the actual deployment of these technologies – "steel in the ground" as we say in the project investment world – is inadequate.

- Sometimes the risk profile of the technology is too high.
- Sometimes the return profile of the technology is too low.
- Sometimes the technology is too costly in comparison with competing technologies.

The most important point I will make today is that aggressive federal policy can drive private sector investment – measured in the trillions of dollars – that will be required to move the nation and the globe toward a more sustainable energy future. There are several critical steps the federal government must take:

- First, the federal government must put a price on greenhouse gas emissions in order to internalize the costs of climate change and move energy investments toward lower carbon and more efficient technologies.
- Second, we must remove barriers to cleaner and more efficient technologies and establish rigorous standards to move these technologies to market.
- Third, we must significantly increase public funding of research and development of advanced energy technologies.
- And fourth, the federal government must provide financial support to the private sector to help move immature and often higher risk technologies to the market - and from there to commercial scale.

The fourth role is well illustrated by the current debate over the reauthorization of tax credits for renewable energy. There is no better example of the role of federal policy in stimulating – and retarding – investment in clean energy projects than the on-again, off-again investment in US wind projects because of the on-again off-again nature of the wind production tax credits. For more than a decade these credits have been here for a year or two and then gone for months or years. Investors simply will not back a US wind project if it looks like the tax credit authorization will expire prior to completion of the project. This has caused a damaging boom and bust cycle in the industry.

This fourth role is also illustrated by the bill you have recently introduced, S. 3233, the 21st Century Energy Technology Act. The bill, if enacted, would increase the capital available for clean energy projects, thereby helping to mature the underlying technologies and move them to scale. I welcome your bill and in this testimony provide my thoughts on how it might be improved including integration with a related bill Senator Domenici introduced in March.

There are typically two elements of energy project finance: equity and debt. Federal tax credits – when they are available - have stimulated equity investment in wind, solar and other clean energy

projects. Securing loans for projects has been more problematic, especially for higher risk projects. Bankers are generally reluctant to provide a loan for a project involving a technology that has not been proven at commercial scale. The bankers are critical, however, because a commercial-scale energy project can often cost hundreds of millions or billions of dollars, generally beyond the capacity or interest of venture capital investors who have often advanced the technology through pilot scale. This problematic moment - moving a technology from a small pilot project to a full commercial-scale plant - is often the point at which many promising energy technologies falter. In the clean energy technology industry we call it the "Valley of Death". It is a major focus of our RE<C (Renewable Electricity Cheaper than Coal) Initiative.

The Valley of Death looms large. Failing to bridge it has cost us serious progress on many clean energy technologies from wind, solar, and geothermal, to biofuels and efficiency. In some cases investors from other countries have stepped into the breach and the technology has advanced but we have lost the tax and employment benefits of a company based in the U.S.

S. 3233 would begin to address this problem. It would increase the willingness of banks to make loans for clean energy projects by providing a secondary market for their loans through the 21st Century Energy Deployment Corporation (Corporation). Implemented well this secondary market should increase the capital available for the scale-up of clean energy technologies with lower risk profiles. The question is whether the Corporation in its operation would also purchase loans from higher risk "Valley of Death" projects. One of the primary purposes of S. 3233 is "to promote access to affordable debt financing for accelerated deployment of advanced clean energy technologies and first-of-a-kind commercial deployments." The bill directs the Corporation to establish criteria that will enable banks to determine the eligibility of loans for resale at the time of initial lending. A key issue in the development of these criteria will be the level of project risk that the Corporation is willing to assume as it develops a portfolio of loans for the secondary market. I am concerned that the bill will fail to address precisely the kind of higher risk Valley of Death projects - as part of a larger portfolio of projects - that most need a smart push from the government.

Mr. Chairman, the legislation you have introduced obviously comes at a challenging time with the downturn in the economy and tumult in the credit markets. But it is precisely at this moment - when clean energy projects so vital to our economy, environment and security are facing increasing difficulty getting financed - that the mechanism you propose is so important. This is especially the case for projects involving innovative technologies with higher associated risk – the very technologies that may well hold the keys to addressing the climate crisis, our oil dependence, a deteriorating electric grid and also provide a major stimulus to the faltering economy. These higher risk projects should be part of a broader, risk-balanced portfolio of loans that enter the secondary market created by the Corporation you propose in S. 3233.

In addition to a secondary market for energy project loans, this Committee has been focused on various credit enhancement tools for some time, including enacting a loan guarantee program in the 2005 energy bill, potentially refining and expanding that program in Senator Domenici's pending bill, and considering various tools during development of S. 3233. These tools, including loan guarantees, letters of credit, direct loans and related mechanisms, could directly address these higher risk projects. Loan guarantees, for example, help borrowers obtain access to credit with more favorable terms than they might otherwise obtain in private lending markets because the federal government guarantees to pay lenders if the borrowers default. By doing so we could help leverage

the vast amounts of private sector capital that is so critical to taking clean energy technologies to scale. Unfortunately, S. 3233 as currently written does not provide these tools to the Corporation. Given the scale of the challenge, I suggest you revisit this decision.

In summary, S. 3233 as drafted may not result in loans for high-risk projects finding a home in the secondary market and will not provide credit support, such as loan guarantees, for these high risk projects.

In March, Senator Domenici introduced S. 2730, the Clean Energy Investment Bank Act of 2008. The bill has goals similar to S. 3233 and the two bills are complementary in certain respects in their approach. S. 2730 creates the Clean Energy Investment Bank of the United States which has authority to make investments in eligible clean energy projects using a variety of tools including loans, loan guarantees, purchase of equity shares, and participation in royalties, earnings and profits. The bank, however, is restricted to investments in projects deploying a "commercial technology", i.e. "a technology in general use in the commercial marketplace." This, combined with the requirement that investments be made "on a self-sustaining basis" seems to limit the scope of the activities to technologies that have already navigated the Valley of Death.

So we have an interesting dilemma: S. 3233 has an important focus on high-risk Valley of Death projects but as written it does not authorize the Corporation to use the most effective tools for advancing these critical plants. Senator Domenici's bill includes these important credit support tools, such as loan guarantees, but does not allow the new bank to invest in higher risk Valley of Death projects. I urge the Committee to explore the integration of these two important bills to ensure that the critical need for capital for these projects can be addressed through two important mechanisms: a secondary market for energy project loans and credit support including direct loans and loan guarantees.

As you further explore credit support, one risk mitigation measure you might analyze is whether it would make sense to require that a loan or loan guarantee for a high risk early stage project be provided to the underlying technology company rather than the typical special purpose limited liability project company. In this way if the project fails there may still be revenues, assets etc. in the underlying company that can reduce the government's financial liability. This approach might also reduce the level of technical due diligence required by the government-sponsored bank or corporation.

It is important to note that the existing DOE loan guarantee authority could, in principle, address the Valley of Death problem and, more generally, help with scaling important technologies. But DOE's loan guarantee program (LGP) faces a number of challenges that have in part motivated the legislation this Committee is considering. In a report issued last week the Government Accountability Office reviewed the LGP for the Energy and Water Development Subcommittees of the House and Senate Appropriations Committees. GAO concluded that the LGP program has been slow in implementation; as of this month DOE had not approved any loan guarantees. GAO also concluded that DOE is not well positioned to manage the LGP effectively and maintain accountability. Additionally, GAO found that it will be difficult for DOE to estimate the "subsidy costs" of the LGP, i.e. the estimated long-term net cost of loan guarantees including, for example, government payments of defaults and delinquencies. GAO suggested limiting the amount of DOE loan guarantee commitments until DOE had addressed these and other problems.

Before I conclude let me highlight two other aspects of S. 3233. First, I strongly agree with the direction in the legislation to develop deployment goals and numerical performance targets in order "to guide and measure the performance of the Corporation toward supporting the deployment of clean energy technologies…." While some details may need to be considered further, these kinds of goals and measures are an important element of a successful deployment program.

Second, I also support your effort in the bill to develop debt instruments that aggregate smaller clean energy technology deployment projects. This could be particularly helpful to an array of energy efficiency projects which tend to be smaller but often share enough characteristics to be aggregated into larger financeable packages.

In conclusion, I strongly support the efforts of this Committee to greatly increase the debt capital available for clean energy projects, especially for higher risk ventures that might not otherwise cross the Valley of Death. Mr. Chairman, I would urge you and Ranking Member Domenici to integrate the best aspects of your two bills and thereby provide important mechanisms that will stimulate the massive private sector investment required to take clean energy technologies to scale. We stand ready at Google to help you in your important legislative efforts.

Thank you for the opportunity to testify today. I look forward to answering any question to assist this Committee in its important examination of ways to finance clean energy and energy efficiency.