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TO: Interested Parties

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RE: Clean Energy Bonds

Overview

Building a clean energy economy is critical for America's future economic and global success. The road to achieving this goal has always been difficult, but the financial crisis has made it even more challenging to develop clean energy projects at exactly the time when rapid expansion is required. While the American public has been repeatedly asked to change their personal behavior to help build a clean energy economy and stop global warming, the scale of this challenge cannot be met through personal action alone. In addition to proactively changing individual behavior, the United States must create an outlet for the public to financially and politically invest in transforming how our nation uses energy.

Perhaps the best comparison for a challenge of the magnitude the United States faces today is our nation's mobilization of the home front during World War II. Today, changing light bulbs is the equivalent of collecting tin 65 years ago. But, as in that era, this alone is insufficient. A challenge of this size also requires a national strategy for the public to invest in the country's goals. To help galvanize and maintain support for World War II, the United States issued War Bonds to directly invest the public in the national mission of winning the war. We need a similar mobilization today.

Therefore, Third Way proposes that the federal government issue new Clean Energy Bonds to the public as the War Bonds of our era. The revenue from these bonds will fund a Clean Energy Investment Fund to help generate financing for the deployment of clean energy projects throughout the United States.

THE PROBLEM

Not enough credit and no way for the public to participate

Building a clean energy economy faces two interrelated problems. First, Americans have to support and actively engage in helping transform how we consume energy. To accomplish this, the government must directly invest the American public in the larger national goal. Simultaneously, there is not enough

private sector money available to finance construction of the wind farms, solar facilities, and nuclear plants needed to generate clean energy. While the credit freeze has exacerbated this problem, even when credit loosens, clean energy project will need more capital than is available from private sector financing.

Americans do not currently have a way to invest in government action on clean energy.

Personal behavior change has been the primary way to make an impact.

At a time of historic crisis and anxiety, Americans are looking for ways to help revive the nation's economy. One solution is building a clean energy economy—the public believes that this is critical for the nation's future, and they strongly favor significant government action in this direction.[1]

The public is also looking to elected officials to provide tangible ways for them to participate in the solution. In his inaugural address, President Obama identified this emerging public spirit, noting that every American has duties "to ourselves, our nation and the world" that we will "seize gladly."[2] He is right—Americans are hungry to participate in our national renewal, and they seek an outlet to contribute.

Until now, the only real outlet for this has been to change one's own behavior: buying energy efficient lighting, setting thermostats two degrees lower, or driving less. From Chevron ads[3] showing regular people pledging to take personal action like "I will use less energy", to *An Inconvenient Truth* website's list of actions individuals can take,[4] the public is inundated with ways to change their personal behavior.

But, beyond buying the stocks of renewable energy companies or driving a hybrid car, the public does not currently have a way to collectively support clean energy. Most can't even purchase clean energy from their utility companies. Instead, Americans are left on the sidelines to wait for government and the private sector to act on their behalf.

The Clean Energy Credit Crunch

The United States also faces a clean energy investment gap, exacerbated by the credit freeze. Even when credit eventually unfreezes, the huge investments required to build a clean energy economy cannot be met through private investment alone.

The financial crisis has frozen clean energy investments.

The financial crisis has virtually shut down the capital markets, destabilized energy prices and undermined the utility of the renewable energy tax credit.

Utilities and power plant developers are unable to obtain the credit necessary to construct large-scale clean electricity generation.[5] Many clean energy entrepreneurs have cancelled or delayed their projects, several of which were extremely high-profile, and new projects are not able to move ahead.[6]

Globally, investment in construction of new renewable energy projects fell significantly between the 2nd and 3rd quarters of 2008, from $23.2 billion to $17.8 billion.[7] And in the US, clean tech investment was down 16% in the 4th quarter of 2008 alone.[8] *John Eber, head of renewable energy investing at JP Morgan Capital Corp., predicts that equity investments in renewable projects will drop by another 20% in 2009.*[9] The disappearance of Wachovia, Lehman Brothers, and AIG, significant players in the clean energy sector, only complicates efforts to secure financing for new clean energy projects. The disappearing profits of solvent firms in the financial sector has also contributed to this, as the renewable energy tax credits are primarily useful in driving investment into the sector when profitable firms are able to write-off tax liability. Additionally, tax shelters created to help the financial sector weather the economic crisis have driven capital out of the unpredictable renewable energy market.[10]

The decreasing cost of natural gas and cheap price of coal compared to renewable energy has only made the financial challenges facing renewable projects more significant. As prices of natural gas dropped from $13.58 per cubic foot in July 2008 to $6.03 in December, renewable projects once again were forced to compete with the lower-cost and low capital natural gas turbines, which have been the primary new energy construction since 1990.[11] The limited private capital still in the market, then, has a relatively inexpensive option in natural gas, thereby crowding out new renewable construction.

A gap between what is needed and what is available in private markets.

Even before the collapse of credit markets in September 2008, the United States was not building sufficient renewable energy capacity quickly enough to meet demand or to adequately reduce carbon emissions. So, as credit unfreezes, investment is likely to increase at a pace insufficient to meet the challenge of building a clean energy economy.

While renewable energy has seen enormous growth in the past year[12], non-hydro alternative energy still provides only about 2.5% of domestic electricity production. Including conventional hydro-electric power, which holds little potential for growth, clean energy production is only 9.5% of total electricity production in the United States.[13] Based on current energy development and demand projections, unless there is a significant change in government policy, fossil energy will continue to provide 79% of energy in 2030.[14] This pace of renewable energy development will not meet the critical clean energy benchmarks

envisioned by President Obama (25% by 2025),[15] former Vice-President Al Gore (100% in 10 years),[16] or even the Bush Administration's Department of Energy (20% from wind alone by 2030).[17]

President Obama has also set ambitious but important clean energy goals, including doubling renewable energy in the next three years[18] and advocating a renewable energy standard that would require that the U.S. produce 25% of its electricity by renewable energy by 2025. To reach the Obama Administration's goal of 25% renewable energy generation by 2025 will require significantly more than the 6% growth rate in renewable electricity seen between 2005 and 2006, even before factoring in demand growth. A doubling of renewable energy in 3 years will require an investment of $150 billion dollars.[19]

Private credit is simply not available for the energy sector to meet these goals. Factoring in anticipated demand increase, population growth, and the need to replace aging existing infrastructure, to reach renewable electricity goals, the United States must enter into a significant clean energy generation build phase now. Utilities will have to invest $2 trillion over 20 years in new energy generation to meet these challenges and transition from existing unsustainable technology to clean energy sources.[20] This investment includes approximately $1 trillion of new generation capacity and $1 trillion in smart meters, transmission and efficiency measures.[21]

THE SOLUTION

Clean Energy Bonds

To build the public's personal and financial investment in an American clean energy economy and assist securing financing for renewable energy in this time of economic challenge, the federal government should issue Clean Energy Bonds. The money raised from these bonds, which would be sold directly to the public, would be distributed through a new Clean Energy Investment Fund.

While changing behavior is a vital component of creating a clean energy economy, the size of our national endeavor requires more. It requires a direct and sustained investment by the public. During World War II, citizens were asked to do more than collect scrap material and change personal behavior; they were asked to directly invest in the war effort by purchasing War Bonds. The sale of War Bonds, supported by a massive government-sponsored public relations campaign, provided some financing for the war and offered the public an outlet to feel personally invested in the national effort. This was particularly important for the millions of people who were not directly involved in the nation's defense.[22]

Given the size and cost of today's national mission to transition to a clean energy economy, the government must similarly engage the public to invest in and become part of the solution. A program similar to War Bonds will help accomplish this by providing the public an outlet to support this effort and build the political will needed to achieve this goal.

Clean Energy Bonds

The Treasury Department would create a Clean Energy Bond as a new product designed for purchase by individual investors. This bond would be structured similarly to current Series I Savings Bonds. Backed by the full faith and credit of the United States Government, bonds would be issued at face value to any investor, in denominations ranging from $25 to $10,000.

Each month, the bond would earn interest comprised of a fixed interest rate set at purchase by the Department of Treasury, plus the rate of inflation. For example, an investor could purchase a $1,000 clean energy bond in May 2009 for $1,000. Each year, the investor could earn 5.02%.[23] In May 2019, the investor could cash the bond in for $1632, having made $632 over the course of the decade. Investors can choose to hold the bonds and continue to accrue interest for an additional 10 years.

The revenue that Clean Energy Bonds would generate is not possible to predict with precision. But savings bonds generated $3.5 billion in sales in 2007, down from a high of $12 billion in 2003.[24] US Savings Bonds, however, have not been widely marketed to the public and, in fact, 41 marketing offices were closed in 2003.[25]

Just as it did with War Bonds at the outset of the Second World War, the federal government should launch a national public relations campaign to galvanize public investment in Clean Energy Bonds. Sales could begin the week of July 4, with a rally or address by the president, supported by rallies across the country (perhaps at baseball games and other events hosted by a bipartisan list of prominent public figures) that emphasizes the shared national purpose of the clean energy mission and tie it closely to America's success. This could also serve as the launch of a national television, radio, print, and Internet ad campaign to educate the public about the bonds.

The government could augment this effort with an Internet strategy that deploys government, corporate and non-profit partner websites to educate the public and enlist them as "Digital Minutemen and Women" to get their friends and neighbors to buy bonds. A central Clean Energy Bond website could allow individuals to track their efforts and highlight progress individually, by town, age group or region to reinforce the common public purpose of this effort. It could also show how the government is using the money raised from the bonds, demonstrating the tangible outcome of Americans' investments.

The government should also make the Clean Energy Bonds available for purchase at as many venues as possible. For example, in addition to the Internet, post offices and banks, bonds could be sold via ATM machines, at gas stations (where people are already thinking about energy), and high volume retail outlets like Starbucks or Wal*Mart. Purchase could even be included as an option on federal income tax forms for refund balance, as once was available for savings bonds. With such promotion, Clean Energy Bonds should be able to raise approximately $10 billion annually.

The issuance of bonds, in denominations as low as $25, will provide the opportunity for Americans to demonstrate their commitment and become financially invested in the success of a clean energy economy. Purchasers would have a built-in incentive to support renewable energy policies and to actively encourage their Members of Congress to take proactive action. Clean Energy Bonds would function as the War Bonds of our time, tying consumers in to the success of the national effort and therefore mobilizing political will for significant changes to the US economy.

Clean Energy Investment Fund

In order to distribute the money raised by Clean Energy Bonds, Congress should establish a governmental Clean Energy Investment Fund. All revenue raised by Clean Energy Bonds should be directly allocated to the Fund, bypassing the normal appropriations process to avoid allowing Congress to "pick winners" in clean energy that benefit their political interests. The Fund would invest in deployment of new clean energy projects, with the expressed goal of bringing new above-market rate technologies to market.

Investments would be made on the criteria that they (1) advance America's clean energy economy; (2) leverage private capital; and (3) demonstrate potential for long-term profitability. Investment types may include any debt instrument legally available that meet these criteria. This may include loans, loan guarantees, purchase of equity, issuance of insurance, or other instruments.

Projects could include, but would not be limited to, photovoltaic, concentrated solar thermal, onshore and offshore wind, geothermal, hydrokinetic hydro-power, recovery and recycling of waste heat/energy in the industrial sector, large scale efficiency and conservation programs, advanced nuclear, and advanced transmission capabilities. Uniquely, investments could be made in an aggregation of projects that increase efficiency at the residential and commercial level, providing financing that can be hard to secure individually.

The fixed interest rate on Clean Energy bonds, set by the Department of Treasury, would be determined based on, among other factors, the expected return

on the Clean Energy Investment Fund. This rate is designed to *keep the entire program revenue neutral* so the return on the Fund's investments pays the interest rate on the bonds.

This Fund would not be doling out charity or supporting the pet projects of political leaders. Indeed, to show investors that the Fund is intended to make money and *not* support projects that are not economically feasible, it would be led by a private-sector board of directors, appointed by the President and confirmed by the Senate. This board would be responsible for hiring expert management and staff to evaluate projects and make determinations about appropriate finance mechanisms. The Fund and its expert staff could also be made responsible for the current federal energy loan guarantee program set up by the 2005 Energy Policy Act.[26] This would ensure greater coordination among the government's deployment initiatives.

The Fund would be an effective instrument in encouraging renewable energy. By offering less expensive financing options for renewable energy projects (i.e. low interest loans), the total cost of installation would be reduced, allowing alternative energy producers to offer more competitive rates and thereby encourage more private investment. Also, the government would be able to issue loan guarantees to help projects secure needed financing with very little direct cost to the Fund.

Conclusion

If the United States is going to make the transformation to a clean energy economy, we need to galvanize significant public support for the changes that are required. So far, the public has only been asked to change some of their individual behaviors. While important, this along is not sufficient. Clean Energy Bonds, modeled on World War II war bonds, creates a tangible outlet for the public to literally and emotionally invest in a clean energy economy. The revenue from this would be invested in clean energy projects throughout the country. As important, the political will it would help build, is vital to the policies that will restart the American economy, protect US national security and reduce global warming.

Endnotes

[1] http://www.washingtonpost.com/wp-dyn/content/story/2008/12/21/ST2008122100258.html

[2] http://www.whitehouse.gov/blog/inaugural-address/

[3] http://www.willyoujoinus.com/commitment/mediagallery/

[4] http://www.climatecrisis.net/takeaction/whatyoucando/

[5] The credit crisis has had a particular impact on capital intense projects like new power generation, which is the third largest borrower after the government and financial institutions.

[6] T. Boone Pickens's high profile wind project in the Texas panhandle, the largest such project in the world, was put on hold in December (http://www.reuters.com/article/rbssEnergyNews/idUSN0852283820081208?sp=true); Duke Energy, American Electric Power and renewable energy leader Xcel Energy have all announced plans to significant cuts capital spending on renewable energy investments. (http://www.eenews.net/Greenwire/customize/2008/12/23); Clear Skies Solar Inc. cancelled plans to build a large solar plant in California. (http://online.wsj.com/article/SB122714114743842743.html?mod=googlenews_wsj)

[7] http://www.nytimes.com/2008/10/21/business/21energy.html?_r=1

[8] http://www.eenews.net/eenewspm/2009/01/05/5/

[9] http://online.wsj.com/article/SB122714114743842743.html?mod=googlenews_wsj

[10] http://www.washingtonpost.com/wp-dyn/content/article/2009/01/08/AR2009010803752.html

[11] http://gristmill.grist.org/story/2008/6/4/123223/5089#_ednref11

[12] http://www.eenews.net/Greenwire/print/2008/12/18/4

[13] http://www.eia.doe.gov/cneaf/alternate/page/renew_energy_consump/table3.html

[14] http://www.eia.doe.gov/oiaf/aeo/pdf/aeo2009_presentation.pdf

[15] http://change.gov/agenda/energy_and_environment_agenda/

[16] http://www.npr.org/templates/story/story.php?storyId=92638501

[17] http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf

[18] http://change.gov/newsroom/entry/dramatic_action/

[19] http://www.bloomberg.com/apps/news?pid=20601072&sid=aqsoXwTzuSSM&refer=energy♦

[20] This amount includes significant investment in energy efficiency based on EPRI's MAP efficiency scenario leading to 20% reduction in peak demand from the EIA's AEO 2008 projections.

[21] http://brattle.org/_documents/UploadLibrary/Upload725.pdf

[22] From 1941-1946, more than 85 million Americans purchased $185.7 billion in war bonds. http://www.u-s-history.com/pages/h1682.html

[23] The composite interest rate is calculated as (Fixed rate + (2 x Inflation Rate)+(Fixed rate x Inflation rate). A 1% fixed rate with a 2% inflation rate would yield (.01+(2 x .02) + (.01 x .02), or (.01+.04+.002), equaling .0502, or 5.02%.

[24] http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/12/04/BU0ATNHMO.DTL&type=printable

[25] http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/12/04/BU0ATNHMO.DTL&type=printable

[26] http://www.lgprogram.energy.gov/