OBAMA-BIDEN TRANSITION PROJECT

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CLEANTECH & GREEN BUSINESS FOR OBAMA

To: Green Transition Team, Office of the President-Elect

From: Cleantech for Obama

Date: December 10, 2008

Subject: CT4O – Expanded Memo on Green Stimulus & Financing

During our November 20th meeting with you, we were asked for input on three topics: (a) ideas for green economic stimulus measures, (b) recommendations for sub-cabinet level appointments, and (c) agency review recommendations. It was also noted that after providing an initial rapid submission on stimulus measures, there was interest in receiving more detailed ideas on both stimulus and improving the financing environment for renewable energy and energy efficiency. As requested, attached is a document addressing this additional opportunity for comment.

This document represents the collective input of over 40 contributors in our network of cleantech and green business professionals.

These comments and recommendations represent the quick feedback from a cross-section of our network that could be reached in the given timeframe. If there is interest in particular ideas outlined in this memo, we would be pleased to expand upon them further.

We hope this input is helpful. Thank you again for this opportunity and your consideration of these ideas.

Thanks and best regards,

Cleantech for Obama Policy Team

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Contributors to CT4O - Expanded Memo on Green Stimulus & Financing

We would like to acknowledge all those who contributed to the preparation of this memo.
Some individuals have chosen to provide their contributions anonymously.

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Introduction

This memo represents input and recommendations for green economic stimulus compiled by Cleantech & Green Business for Obama (CT4-O) from our network of business leaders and investors in the cleantech, renewable energy, energy efficiency, and green business sectors nationwide.

Our discussion focuses primarily the following areas:

I. Tax Incentives p. 6
II. Loan Guarantees p. 9
III. Federal Renewable Energy & Efficiency Procurement p. 13
IV. Direct Incentives for Renewables & Efficiency p. 15
V. "Smart Grid" Stimulus Proposals p. 16

These comments and recommendations represent quick feedback from our network. They do not represent a consensus view but merely the collective input of over two dozen cleantech and green business professionals. If there is interest, we would be pleased to develop these ideas (or a subset of them) further.

Executive Summary

TAX INCENTIVES

- **The problem**: The economic downturn has caused a major pullback in investment in renewable and clean energy projects and technologies. For wind and solar, lack of tax equity is the major problem. For development stage companies and smaller projects, lack of equity financing and reduced attractiveness of investments are the main obstacles.

- **Proposed solutions to tax equity**: Modest adjustments to existing tax incentives can sharply expand the renewable energy investor base, help to create jobs and bolster profitability. We highlight three examples:
    - Make renewable energy tax credits refundable for cash;
    - Expand the universe of investors able to use tax credits by eliminating at-risk and passive loss rules for a temporary period;
    - Make credits transferable so that they can be sold for cash to investors that aren't direct investors in renewable energy projects.
- **Proposed solutions to investment:** The problem of investment is felt economy-wide, but there are a few solutions to increasing investment in the cleantech sector:
    - Build certainty. In a fear-driven environment, certainty is crucial. Make the incentives long-term. The wind PTC should be extended for many years (e.g. 8 years) to encourage long-term investments in projects and manufacturing capacity here in the US.
    - Eliminate capital gains for investments in private companies that make clean energy, efficiency, transmission, and storage technologies. President-elect Obama has already promised to eliminate capital gains on small companies and startups. Extending that treatment to green startups and small businesses would be a great first step that would cost the Treasury less than applying it more broadly. A zero cap gains rate would bring new sources of capital to green infrastructure projects that today rely heavily on external finance.

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- Accelerate depreciation for a broader range of renewable, energy efficiency, and enabling infrastructure assets. More investment in green products could be catalyzed by extending the bonus depreciation (as enacted in the Economic Stimulus Act of 2008) to products such as energy efficiency upgrades, and perhaps making it more aggressive where doing so won't lead to excessive deductions and book losses in projects' early years.

LOAN GUARANTEES

Problem: Currently, due to the credit freeze, renewable energy installations (solar, wind, geothermal, etc) and energy efficiency projects are not getting financed, and as a result many projects with willing customers and capable development teams are not being developed, built, and installed, due to the lack of financing. Significant numbers of jobs are being lost or being put on hold.

Solution: Create a new program and expand on existing loan guarantee programs for renewable energy and energy efficiency project development and deployment.

(1) ***Create a new loan guarantee program for fully-commercial renewable energy and efficiency technologies; the program could be operated through financial institutions, and administered by the Department of Treasury***. These loans would provide both construction financing and long-term (~20 years) financing for both pooled distributed commercial projects and large scale centralized projects. To have an immediate impact, these loan guarantees must be readily and quickly made available to applicants. One could be created extremely quickly through the Department of Treasury, which is well suited to accomplish this goal.
(2) ***Expand on other already existing loan guarantee programs for project development.***
(3) ***Streamline the current Department of Energy Loan Guarantee Program*** to speed approval and deployment of loan guarantees for yet-to-be-commercialized technologies.

Impact: This would provide immediate job creation. For example for distributed generation solar (projects ranging from 60 kW to 2 MW), as soon as financing is available billions of dollars worth of projects will undergo construction, immediately creating tens of thousands of green-collar jobs.

FEDERAL RENEWABLE ENERGY PROCUREMENT

In the category of Federal Renewable Energy Procurement we propose four initiatives:
- Create Standard Long-Term Federal Power Purchase Agreements *(short term stimulus)*
- Turn the US Federal Government into world's largest customer for Renewables and Efficiency *(short term stimulus)*
- Establish a Federal Clean Energy Purchase Premium *(short term stimulus)*
- Establish Multi-year Federal Procurement Targets for Low-Carbon Fuels *(medium to long term stimulus)*

DIRECT INCENTIVES FOR RENEWABLES & EFFICIENCY

Under the heading of Direct Incentives for Renewables and Efficiency we offer the following proposals:
- Fully fund Combined Heat and Power Incentives *(short term stimulus)*
- US Advanced Battery Production Incentive *(medium term stimulus)*

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"SMART GRID" STIMULUS PROPOSALS

Under the heading of "Smart Grid" we offer the following proposals:
--Fully fund the Smart Grid Regional Demonstration Initiative (EISA, Sect.1304)
--Fully Fund the Federal Matching Fund for Smart Grid Investment Costs (EISA, Sect.1306)
--Fund Energy Efficiency and Conservation Block Grants

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I. TAX INCENTIVES

Background: tax credits for renewable energy production

The U.S. Internal Revenue Code provides a broad range of benefits for facilities that produce electricity from renewable energy. Primary examples include: a) Production tax credits (PTCs) for wind, geothermal, biomass and ocean energy (currently 2.1 cents per kilowatt-hour of electricity for wind and geothermal projects and 1 cent per kWh for biomass and ocean energy) for the first ten years after the facility is placed in service; and b) A 30% investment tax credit (ITC) for solar and fuel cells placed in service during the year, c) accelerated depreciation.

The US Emergency Economic Stabilization Act, passed October 3 2008, built on this foundation by including roughly US$17 billion in tax credits for renewable energy. The main components comprised a) an eight-year extension of the 30% tax credit for residential and commercial solar investments, b) removal of a US$2,000 monetary cap for residential solar installations, c) new eligibility for utilities and those subject to AMT to use solar tax credits, d) a one-year extension of wind tax credits, e) two-year extensions of PTCs for other geothermal and biomass, and f) a three-year PTC for ocean energy .

The problem: tax equity scarcity

Most renewable power developers can't efficiently use tax credits because they don't have enough taxable income. Further, most individuals, S-corporations and "closely-held" C-corporations also have trouble using credits because the tax code requires them to clear two hurdles not faced by large financial investors. Passive loss rules restrict the use of credits to sheltering income from other passive investments. At-risk rules limit the depreciation able to be claimed to the amount at risk (equity invested).

To avoid these obstacles, renewable power developers have generally partnered with large, corporate investors – typically large banks and insurance firms with substantial taxable income – to monetize tax credits. These large investors are commonly known as "tax equity" partners.

Even before the credit crunch, some doubted the existing market could provide sufficient tax equity for forecasted growth in wind and solar development. In addition, the tax credits require an in-depth understanding of energy projects that many investors (even those experienced in other tax credit programs) don't have the time or interest to develop.

What's more, recent economic distress and tax policy changes drastically reduced the pool of available tax equity. As a result, access to capital has sharply reduced and capital costs have increased. In 2007, there were about 18 major providers of tax equity for domestic wind and solar projects, including JPMorgan, GE Capital, Wachovia, Morgan Stanley, Lehman Brothers, Wells Fargo, Bank of America, and AIG. Today only about six tax equity investors remain active. According to estimates by New Energy Finance, the tax equity market is expected to shrink from a little over $7 Billion in 2007 to a little under $5 Billion in 2008 and only $3.94 Billion in 2009. This is happening at a time when demand for renewable power continues to rise and is expected to rise further as part of the incoming administration's energy goals.

Proposed solutions to tax equity scarcity

1. **Make tax credits refundable**

For a limited period of time, the tax code could be adjusted such that government would refund the value of tax credits to the extent renewable power project investors have insufficient taxable income to use the

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credits. Refunds would need to be tax-free to have the same effect as the after-tax credits. [Note: such refunds are not taxable income under existing law.] The refunds for the tax credits could be paid over the same period the tax credits are currently awarded, or as an up-front payment in lieu of future credits. Wind and solar developers have asked for refundability for tax credits only for projects placed in service during 2008 and 2009 when the credit markets are dislocated. Industry observers estimate that 2009 payments could be in the range of $5-10 billion based on current project pipelines.

2. **Expand pool of eligible investors**

We should also seriously consider opening up investment to more individuals and small businesses by eliminating passive loss and at-risk rules for renewable energy projects. There is precedent for doing so. Some oil and gas and affordable housing projects enjoy comparable benefits.

Master Limited Partnerships (MLPs) are a useful and tax-efficient vehicle with which to organize lots of small investors. MLPs are currently allowed for investment in some parts of the oil and gas, coal mining and other minerals industries. Allowing MLPs in the renewable energy sector could provide a valuable step forward.

3. **Make tax credits transferable**

Making tax credits transferable – that is, saleable to third parties -- would also provide valuable benefits. While this wouldn't expand the tax equity investor pool in an absolute sense (current restrictions would still apply), it would make the tax credits far more interesting to firms that value the tax credits but don't want to have to learn the renewable energy business. Firms could buy tax credits while not investing in power projects. In this way, transferability would provide a valuable boost in tax credit liquidity.

Free transferability would also address a problem with refundability. Tax credits represent only about half the tax subsidy in a wind or solar project. Depreciation makes up the rest. Thus, while refundability would give developers the valuable ability to monetize PTCs and ITCs, depreciation deductions would remain hard to use efficiently given developers' limited taxable income. Free transferability would alleviate this problem if developers selling tax credits were required to report associated payments as taxable income, and if these payments were deductible by the purchasers. (This is probably what would happen anyway based on current law.)

Economic and job creation benefits from wind

One of the largest impacts from fixing the tax equity problem will be through the wind industry. The Department of Energy recently published a report, "20% Wind Energy by 2030", that highlights material economic benefits of expanded renewable energy development. For example:

- More than 250,000 workers would be permanently employed in wind power and related sectors (2007 to 2030)
- Annual earnings in excess of $12 Billion (2007 to 2030)
- Annual economic output of just under $40 Billion (2007 to 2030)
- Cumulative construction earnings in excess of $300 Billion (by 2030)

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- Cumulative economic output of just under $950 Billion (by 2030)[1]
- Range of green jobs: Technical Personnel; Construction Workers; Project Managers, etc.

Economic and job creation benefits from solar

Solar projects are engines for rapid job creation. Solar photovoltaic projects, for example, are typically built in weeks and do not require lengthy resource or environmental studies. A recent report by Navigant Consulting entitled "Economic Impacts of Extending Federal Solar Tax Credits" (commissioned by the solar industry), estimated that each megawatt of solar installed would generate 23 new jobs and $12 million of investment.

[1] '20% Wind Energy by 2030', U.S. Department of Energy, July 2008, p.205.

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II. LOAN GUARANTEES

Problem: Currently, due to the credit freeze, renewable energy installations and energy efficiency projects are not getting financed hence many solar and wind project are not being developed. Additionally, for companies that develop distributed projects such as solar third party PPA providers (who design, develop, own and operate the solar systems for customers, selling power to customers) there are many host customers willing to make long-term PPA contracts, but long-term lenders are in very short supply, so otherwise willing construction lenders are unable to commit. Hence, these projects are not being built and many design, engineering, installation, construction, finance and asset management jobs are being lost. Additionally, renewable energy and energy efficiency companies that are developing new innovative products are not getting access to capital to expand and commercialize, hence not creating jobs.

Solution: Create a new and expand on existing loan guarantee programs for renewable energy and energy efficiency project development and deployment. We suggest the following solution to economic stimulus:

(1) ***Create a new loan guarantee program for fully-commercial renewable energy and efficiency technologies; the program could be operated through financial institutions, and administered by the Department of Treasury***.
(2) ***Expand on already existing loan guarantee programs for project development.***
(3) ***Streamline the current Department of Energy Loan Guarantee Program*** to speed approval and deployment of loan guarantees for yet-to-be-commercialized technologies.

1. Create a loan guarantee program for renewable energy and efficiency projects using fully-commercial technologies that is operated through financial institutions, and administered by the Department of Treasury.

The existing DoE Loan Guarantee Program has laudable goals but is, by design, not focused on the most important objectives for a Stimulus agenda -- ensuring liquidity and available financing for renewables and efficiency projects that are ready/near ready to break ground using fully commercialized technologies – with resulting benefits for employment in the trades.

These loan guarantees would provide both construction financing and long-term (20-year) financing for both pooled distributed commercial projects and large scale centralized projects. To have an immediate impact, these loan guarantees must be readily and quickly made available to applicants.

We recommend establishing a Loan Guarantee Program (LGP) for renewable energy and energy efficiency in the Treasury Department that is administrated through private financial institutions. Institutionally, Treasury would be more logical lead, from the standpoint of its mandates, experience, and capabilities. It has lead the U.S. government in developing and overseeing a wide range of institutions, programs, and facilities to address issues in capital markets, both international and domestic – e.g., the Multilateral Investment Guarantee Agency (MIGA) and the guarantee program under the Air Transportation Stabilization Board. Treasury has historically demonstrated the ability to develop and make priority programs operational very quickly. It also has extensive relationships with a wide range of financial institutions, and is aware of how these institutions do business. Against the backdrop of the current financial crisis, developing a program to address the financing freeze for a given sector would be consistent with the direction Treasury has taken in its design and administration of the Troubled Asset Relief Program (TARP).

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With regard to Treasury's technical capabilities, as you know, the Department has for years maintained energy economists and staff to review proposed loans at the multilateral development banks, as well as to provide oversight of the Global Environment Facility (GEF) and its renewable energy project portfolio. Recently, it also has taken responsibility for the international Clean Technology Fund. For purposes of a LGP for Renewable Energy, Treasury could leverage technical input as needed from DoE and other agencies – as it traditionally has done in managing U.S. interests in the GEF. However, we recommend that the LGP, wherever it is housed, should move toward "confirmatory due diligence" with regard to technology, leaving the primary technical assessment to the commercial financing institutions participating in a given project. As in numerous previous examples of new programs, Treasury will streamline processes around financings including the due diligence process once deal volume is sufficient for standardization.

Specific recommendations for a "Commercial Renewables & Efficiency" Treasury LGP:

- Allow the LGP to cover fully commercial renewable energy technologies, such as solar, wind, geothermal, energy efficiency and many others.
- Extend guarantees to large scale centralized renewable energy projects, distributed renewable energy projects (especially for bundled projects), and Energy Performance Contract financing.
- Provide guarantees for construction phase as well as long-term (20-year).
- Provide at least $100 billion of guarantee authority.
- Clarifying the law to ensure that below-market loans do not reduce the tax credits available.
- Rapidly assess the most standard financial arrangements for renewable and energy efficiency projects and optimize the facility accordingly for example one major financial institution suggested the following:
    - To maintain market competitiveness as well as to encourage appropriate risk-taking by financial institutions, the Treasury would take a second-loss position on projects, thereby preserving the risk aspect for the debt provider while also providing the added protection that would encourage further debt investment.
        - Equity would take the first loss, Treasury the second and Debt providers after.
        - Structured with the Treasury investment at the mezzanine level of the project capital structure (senior subordinated debt, subordinated debt, etc). This preserves existing market structure of equity and debt.
        - This leverages public capital since only a percentage is at risk on each transaction rather than the whole.
        - Significant private capital is still at risk, which maintains proper incentives to do economically viable transactions and prevent moral hazard issues.
        - Assess the specific and appropriate level of second loss protection that would entice debt investors.

Job Impact: This would provide immediate job creation. For example, for distributed solar generation (projects ranging from 60 kW to 2 MW), as soon as financing is available, billions of dollars worth of projects will undergo construction. One company that develops these projects (a power purchase agreement provider and developer), reported that they have several hundred million dollars of projects awaiting financing, equal to tens of thousands of design, development, engineering and construction jobs not to mention manufacturing, finance, asset management, and other services jobs from this company alone. They reported if they received financing today they could begin design, construction and installation within days.

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2. *Expand on other already in-place loan guarantee programs*

Another near-term approach to loan guarantees that we recommend is rapidly assessing and bolstering other existing federal loan guarantees programs that can be used for energy efficiency and renewable energy. These include:

- *The USDA Business & Industry (B&I) Guaranteed Loan Program* -- increasing the cap of $25 million, temporarily allowing non-rural renewable energy project applications or at least allowing rural projects to supply power to urban areas, and relaxing collateral requirements.
- *Loan Guarantees from the Small Business Administration*—increase the limit for renewable energy projects, increase the SBA loan guarantee from 50% to 75% for owner occupied buildings if the tenant improvements comply with a standard (e.g. a percentage above comparable buildings), and increase from 75% to 90% the guarantee for loans to companies that use the proceeds to invest in efficiencies or green technologies.

3. Streamline the current Department of Energy Loan Guarantee Program for yet-to-be-commercialized technologies.

The administration of the existing Loan Guarantee Program within DOE is extremely bureaucratic, slow, and costly to the companies that apply. The LGP was first authorized in 2005 (under Title XVII of the Energy Policy Act of 2005) and was first funded in 2007, yet as of the end of 2008 not a single application has been approved. In the meantime, the costs born by applicants have been great and the procedures have been burdensome. The LGP is a very good idea, but its implementation can hardly be said to have done much to help the sector grow. In the meantime, many more companies are beginning to enter the "gap financing" stage in 2009 and 2010 and will need to finance their early commercial projects.

From the perspective of the Stimulus goals, the DoE LGP's key flaws include: (a) has a cumbersome process and criteria, with excessive technical review (b) is inadequately funded, a problem compounded by complicated scoring criteria, (c) is staffed inadequately with respect to needs surrounding complex financial transactions (e.g., how to incorporate considerations such as tax benefits into a given loan guarantee package). DoE has brought in multiple advisors to assist in structuring and improving the program, but it is not well suited as the lead agency for the purpose.

We recommend streamlining the existing Loan Guarantee Program (LGP) to enable more rapid processing of applications:**.** For short-term stimulus implementation:

- ***Appropriate funds for the credit subsidy.*** Current LGP legislation requires all program administrative costs and credit subsidy requirements to be covered by borrower fees. Appropriating administrative funds and a credit subsidy budget could substantially (or completely) reduce these fees. The fees are a particular problem for start-ups and emerging companies. Fees need to be lowered enough to not exclude potentially viable applicants, but should remain high enough to filter out applicants that are not serious or are unqualified.
- ***Absent a credit subsidy appropriation, define the credit subsidy rate up front and cap it – we suggest a simple 2%***. The cost of the loan guaranty premium charged by the federal government to the requesting project sponsors is difficult to define. The Office of Management and Budget has long debated with the LGP the criteria and considerations necessary to calculate the premium for the US government guarantee. The predictability of this cost and how it is financed by the applicants has delayed processing and closing loan guarantee transactions and probably deterred some applicants. We nevertheless at a minimum need to publish, clear, understandable and transparent guidelines on this currently significant cost element for loan guarantees

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- ***Expand LGP to cover "gap" financing pre-commercialization phase***. Consider making available an "interim funding facility" immediately available to approved applicants in an amount of, for instance, 10% of the amount of the requested and approved loan guarantee facility. Applied to the initial round of sixteen projects chosen from the initial solicitation that could inject up to $200,000,000 (10% of the $2 billion in approved first round projects) into innovative energy projects.
- ***Accommodate tax benefits.*** Clarify the law to ensure that below-market DOE loans do not reduce the tax credits available.
- ***Have DOE provide for flexible collateral requirements*** based on the financial institutions' needs.
- ***Increase staff levels.*** Given the billions of dollars authorized for this program to date, the transaction team is dramatically undersized. A team of bankers, lawyers, financial analysts and modelers are needed. Perhaps one positive aspect of the difficulties on Wall Street is that the available pool of talented candidates is at an all time high.
- ***Switch to rolling application deadlines.*** Applications for loan guarantees are required to meet certain deadline dates for application submittal in order to be eligible for consideration. The best way to optimize this program is to open up the application process by dispensing with deadline dates.

Other possible measures to consider for streamlining the LGP:

- Offer technical assistance to applicants from the national labs. This could include providing support for EC&S modeling/validation.
- Allow more flexibility in program categories and reduce the rigidity of the categories. There are many companies that meet the objectives of the program but don't fit one of the pre-defined technology categories.
- Partner with the insurance industry to provide Efficacy Insurance for alternative energy plants (performance wraps) would greatly accelerate the deployment of innovative plant-based technology currently in the US pipeline such as novel wind turbine designs, solar panel factories, concentrated solar thermal plants, second-generation biofuels plants, biorefineries, and enhanced geothermal.
    - The developers of these plants lack the balance sheets required to provide process guarantees and product warrantees. Without them adoption is thwarted because project finance lenders cannot handle "first plant" risk. The "old technology" always wins. The insurance industry has developed this product before and the firm with the most experience doing it is Hartford Steam Boiler although AIG (which bought HSB) is working on it, and some of the European reinsurers have the intellectual property and will to work on it. **T**his efficacy product could be developed and rolled out within six months of January.

Job Impacts: The energy construction industry and the automotive industry are laying off tens of thousands. The projects mentioned above are all in development and in the pipeline. The four industries, solar, geothermal, wind, and second-generation biofuels are all in periods of massive expansion and, assuming plants can be built, will create tens of thousands of new jobs.

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III. FEDERAL RENEWABLE ENERGY PROCUREMENT

Create Standard Long Term Federal Power Purchase Agreements

Short term stimulus

A key obstacle to the expedited installation of clean energy and energy efficient technologies at federal buildings is the protracted process of negotiating individual power purchase agreements (PPAs) and the current limit on how long those contracts may extend. We recommend creating a standard PPA for clean energy purchases at federal government facilities. These PPAs should be at least 25 years in length, and up to 30 or 50 years where appropriate. Changing current PPA rules has proven difficult in the past due to budget scoring concerns on the Capitol Hill. But now we have a unique opportunity to make this essential change. Estimating the cost of this proposal alone is impossible without also estimating the amount of new clean energy capacity that would be added via these PPAs. This proposal would make the financing of federal renewable energy and energy efficiency projects much more likely.

Turn the US Federal government into the world's largest customer for Renewables

Short term stimulus

The Federal government could spur the near-term development of hundreds of renewable energy projects, including solar, wind, and geothermal, at Federal facilities, both through direct purchase of systems, such as solar panels, or through the Power Purchase Agreements described above.

Now is a particularly good time to buy solar: given the US economic downturn, there is a sudden over-supply of solar photovoltaic modules on the global market, and the price of PV modules could easily fall over 20% in 2009. If the US were step in immediately to buy up large quantities *taxpayers would receive excellent value*.

Already, energy audits have been completed at many major federal government facilities. What is needed is an action plan for rapid installation. With the right support, the federal government could add 2,000MW of PV capacity by the end of 2010.

The government could own these systems outright and commission systems integrators to install them at a cost of $3-5M per installed MW, for a total cost of $6-10B. This one-time investment would mean the government could forego purchasing those 2,000MW of power capacity going forward. It would also put the government in the relatively unfamiliar role of operating these systems and seeking to maximize their output. However, over the long haul it would certainly be beneficial for government to own these systems.

A second option involves the federal government commissioning private PV systems integrators not just to install the PV systems but to own and manage them as well. The federal government would then purchase the electricity those systems generate at fixed rate from those operators over the course of a 25-year PPA. Estimated costs would represent a $2.5-$4bn premium over what the government is currently paying to power these facilities. Given current market conditions, the federal government would likely have to lend systems integrators the working capital to purchase the modules, staff up, and otherwise execute these jobs. The best avenue for this would be approximately $6B in loans disbursed via existing programs in the Small Business Administration.

Adding 2,000MW of new solar capacity would create approximately 175,000 direct jobs.[2]

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[2] Source: SEIA. http://seia.org/galleries/pdf/SEIA%20Policy%20Priorities%2012.3.08.pdf

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Establish a Federal Clean Energy Purchase Premium
Short term stimulus
A quick and effective way to up support for renewables would be to require that all federal agencies, whenever they have a choice of electric power providers, give preference to renewable power.

In many regions there is not currently an available choice between power suppliers, but where there is, the federal government could give a 0.25% price preference for each 1.0% of renewable energy provided by a supplier. The total amount of price preference would be capped at, say, 10% (which would reflect a 40% proportion of renewable energy). Thus, if one supplier had a renewable energy component of zero and the other supplier had a 20% renewable energy component, the federal government would purchase power from the second supplier so long as its price for power was no more than 5% (20% x 0.25) higher than the first supplier.

The General Services Administration could set the price preference administratively, most likely without need for regulation or legislation. The exact cost would be determined on a case-by-case basis in markets where there is competition.

Establish Multi-year Federal Low-Carbon Fuels Procurement
Medium-to long-term stimulus
Steps to expand Federal clean energy procurement should include transport fuels. The US Government is the largest consumer of Diesel in the world – it should lead the transition to clean fuels and should provide a 10 year procurement contract to suppliers to achieve this. All Federal agencies should purchase an increasing amount of their diesel fuel requirements from “new energy companies”, including specifying a percentage of “low-carbon fuels” (i.e. 50% of Government diesel, jet fuel and gasoline be low-carbon by 2015. The definition of “low carbon” can be adopted from regulations currently being crafted by the Environmental Protection Agency regarding the US Renewable Fuels Standard expanded by Congress in 2007.

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IV. DIRECT INCENTIVES FOR RENEWABLES, EFFICIENCY

Fully fund Combined Heat and Power Incentives
Short term stimulus
We recommend full funding for the Waste Energy Recovery Incentive Grant Program ($200 million). A $200-million appropriation for this program would stimulate $2 billion in investment, enough to produce 1,000 megawatts of power generation capacity and leading to 14,000 – 70,000 construction jobs and 1,000 permanent operating jobs.

Construction jobs estimates vary. Based on the low-end estimate of 7 jobs per $1 million of investment (used by Oak Ridge National Lab and ACEEE), the new construction jobs would total 14,000. Based on the high-end estimate of 35 jobs per $1 million of investment (used by Solar Energy Industries Association), the new jobs would total 70,000.

Assuming the grant program would lead to 40 plants averaging 25 megawatts in size (totaling 1,000 megawatts), and assuming 16 full-time personnel are needed to operate each such clean-energy power plants, the $2 billion of capital investment would lead to 640 permanent operating jobs.

US Advanced Battery Production Incentive
Medium-term stimulus
Promoting the adoption of electric vehicles in the US undoubtedly advances the cause of combating global warming. But if the US fails to expand domestic manufacturing of the advanced batteries needed to power such vehicles, the country risks exchanging reliance on crude oil from the Middle East for reliance on batteries from Asia.

Currently, for every 100,000 Chevy Volts (or equivalent electric car using a 16-kilowatt hour electric pack), 320 million "18650" standard format lithium ion batteries are required. However, most of the world's current 720 million-unit capacity for these batteries resides in China, Korea and Japan. Manufacturers in these countries have already announced plans to invest over $2B to expand capacity over the next three years.

A new Advanced Battery Producer Incentive (ABPI) would advance the growth of domestic US lithium ion battery manufacturing. The incentive's emphasis would be on the category of leading (top 20%) performers as based manufacturing costs and leading energy and power density metrics. As a start, the ABPI would offer $1 for every 5 watt-hours of battery capacity manufactured in the US subject to the following conditions:

- 51% of the battery manufacturer's ownership should be US-based
- 51% of the battery manufacturer's R&D should be US-based
- 100% of the battery manufacturer's electrode assembly should be US-based

To provide oversight, the funding would be administered by the Department of Energy and capped at $2B representing the equivalent of 400 million units, or enough to power the first 125,000 Chevy Volts. At the plant level, $55M of capex would deliver approximately 12 million units at 6 watt-hours per unit, or over 72 million watt-hours of battery capacity per year. Each battery line of this size would create 18 line jobs, and others in marketing, sales and technical support.

At the program level, we anticipate that $2 billion of incentives for battery manufacturing would translate into 100,000 new manufacturing jobs, 1.8B gallons of avoided gasoline consumption, and 17MT of avoided CO2 production. Construction of these plants could begin as soon as one year from program inception.

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V. "SMART GRID" STIMULUS PROPOSALS

In the context of spurring economic stimulus, investment in the nation's electrical infrastructure represents a tremendous opportunity for rapid investment to put in place critical infrastructure while creating tens of thousands of jobs. But as we invest in the grid, we propose making sure that we do not just rebuild the grid of 40 years ago[3] but instead build the Smart Grid of the future.

Many of the other energy initiatives currently under consideration – increased energy efficiency, renewable energy technologies and plug-in vehicles – will require an electric grid capable of real-time communication and dynamic load balancing. Without these upgrades, it is nearly inconceivable that our nation will be able to accomplish the aggressive build-out of renewables energy and distributed generation currently envisioned.

By supporting new "smart grid" investments, we anticipate an influx of private capital supporting new technological innovation and project development that will have additional immediate and measurable economic stimulus impacts. In addition, there will be very real security benefits from developing robust systems that can respond to system disruption from severe weather events, attack, or failure.

This is in line with the approach taken in the Energy Independence and Security Act of 2007 (EISA), which established a dedicated "smart grid" title. Several actions are detailed below that build from existing legislation and authority and enable true "Smart Grid" investments:

Fully fund the Smart Grid Regional Demonstration Initiative (EISA, Sect.1304)
These initiatives, in up to 5 electricity control areas, will focus on the deployment and integration of advanced technology necessary to the modernization and smartening of the grid. The 50% cost share with the utilities for qualifying smart grid technology investments at a demonstration project site will bring jobs, resources and energy cost savings to those communities. (Funding--$100 million for each of next 5 years)

Fully Fund the Federal Matching Fund for Smart Grid Investment Costs (EISA, Sect.1306)
This matching fund program, which provides 20% reimbursement to qualifying smart grid investments, allows for innovation and flexibility as smart grid technology is developed, deployed and evaluated. This program is essential to allow the marketplace to respond to the potential opportunity that is inherent in the smart grid and keeps investments flowing into innovations that are developed. (Funding--$1.3 billion)

Fund Energy Efficiency and Conservation Block Grants
Give preference to Smart Grid projects that include technology for measurement and verification of load reduction and energy efficiency.
The Block Grants in the EISA will assist local and State governments to develop and implement comprehensive energy efficiency strategies. In appropriating the monies for this program, there should be added a preference for funding projects that include the smart grid technology that can deliver real time data to measure and verify load reduction and energy consumption. These data will not only empower utilities and ratepayers in the management of energy demand and consumption, but will also translate into real savings that can otherwise "fuel" the economy.

[3] The average age of our current grid infrastructure is about 40 years.

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Job Creation Impact:

According to a number of sources, detailed estimates are still being developed for job creation resulting from smart grid and transmission expansion (the Gridwise Alliance is expecting to produce some new figures in the next few weeks). Job creation over time would certainly be on the order of tens of thousands increasing with the scope of grid infrastructure investment. It is expected that jobs will be created in a number of areas including the following: smart metering, transmission and distribution, software for smart grid, communications infrastructure, and demand response equipment. As noted before, development of smart grid infrastructure is key to accelerating the job creation, ultimately in the order of millions of jobs, associated with many other sectors including renewable energy, clean distributed generation, plug-in electric vehicles, and energy efficiency.