

**Select Committee on Energy Independence and Global Warming  
U.S. House of Representatives**

**“The Green Road to Economic Recovery”**

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Chairman Markey, Ranking Member Sensenbrenner, and Members of the Committee: I want to thank you for the opportunity to share my views on a green road to economic recovery, and the potential that immediate investment in global warming solutions can play a pivotal roll in strengthening the foundation of the U.S. economy during these difficult economic times.

I am Bracken Hendricks, senior fellow at the Center for American Progress Action Fund (CAPAF), a non-partisan multi-issue think tank focused on developing innovative policies that build a more broadly-shared prosperity. At CAPAF, we have come to believe, through deep research on the matter, that smart strategic investments in climate solutions can help to rebuild the underpinnings of our economy on the foundation of efficient and low carbon energy sources, and that this transition can be a source of increased business opportunity and competitiveness, stronger communities, improved national security, and increased prosperity. We call this approach “the Energy Opportunity,” and we believe that it must be at the center of both America’s energy policy and our economic policy as we confront the interrelated challenges of a sagging economy, rising energy prices, and a growing climate crisis.

Working in partnership with the University of Massachusetts, Political Economy Research Institute (PERI), this month we released a report “Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy,” outlining a strategy for short-term economic recovery that simultaneously achieves longer-term public purposes by investing not only in a traditional consumption based stimulus, but by helping to lay the groundwork for a transition to a clean low-carbon economy.

The recent economic downturn makes the need for a recovery package urgent and incontrovertible. August unemployment was at 6.1%, a five-year high, and employers cut nearly 84,000 jobs, primarily in manufacturing and employment services.<sup>1</sup> New housing construction continued to slow in July, with privately-owned housing starts at a seasonally adjusted annual rate 11.0 percent below the revised June estimates and 29.6 percent below the July 2007 rate.<sup>2</sup> For the 18<sup>th</sup> consecutive month home prices continued

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<sup>1</sup> <http://www.bls.gov/CPS/>

<sup>2</sup> <http://www.census.gov/const/newresconst.pdf> (New construction data available Wednesday, September 17<sup>th</sup> at 8:30am EST.

to drop, with the S&P/Case-Shiller 20-city home price index falling a record 15.9 percent for the year through May.<sup>3</sup> Finally, the recent upheavals in financial markets make the case for some sort of recovery package all the more compelling.

A program of investment in deploying new clean energy technology and improving building efficiency is good short term economic policy, by driving immediate spending into some of the hardest hit sectors of the economy in construction and manufacturing, and by ensuring that an infusion of near-term spending, flows directly toward job creation and domestic investment. Specifically, we outline in this report a program of investment that would inject \$100 billion into the domestic economy, through near-term spending on energy efficiency and renewable energy, and we focus on strategies that would ensure the funds are brought to bear rapidly, within an eighteen to twenty-four month timeframe. We find that a strategy for economic recovery that invests in new energy alternatives and smart public infrastructure provides superior improvements in economic performance and job creation, when compared to either rebates or comparable spending on traditional energy sources. Put simply, a green recovery package creates more jobs, and more good jobs than other strategies, and deserves strong consideration at this time.

Drawing on this work, I want to principally address three topics with you today. In this testimony, I discuss:

1. Why public investment in energy efficiency and renewable energy should be central to any near term economic stimulus package
2. Specific measures that congress could include in a stimulus package, and
3. The proper relationship of short- to medium-term measures in the report, and a long-term, comprehensive strategy for investment in clean technology and green jobs.

***I. Why should public investment in energy efficiency and renewable energy be central to any near term economic stimulus package?***

There are many ways in which government spending can stimulate the economy and create jobs as part of a recovery program. Public spending directed towards a green recovery, however, would result in more jobs than spending in many other areas, including, for example, on rebates for increasing household consumption, which was the primary aim of the April 2008 \$168 billion stimulus program. Near term investments in energy efficiency and renewable energy also have the added benefit of moving the country towards the low-carbon future necessary to increase our international competitiveness and national security, and avoid the devastating social, economic, and environmental effects of global warming over the long term.

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<sup>3</sup> [http://money.cnn.com/2008/06/24/real\\_estate/home\\_prices\\_CaseShiller\\_April/index.htm](http://money.cnn.com/2008/06/24/real_estate/home_prices_CaseShiller_April/index.htm)

A green recovery program is more effective as an engine of job creation than spending the same amount of money within the oil industry or on household consumption. Increasing spending by \$100 billion on household consumption along the lines of the April 2008 stimulus program would create about 1.7 million total jobs, or about 16 percent fewer jobs than the green recovery program. In addition to creating more jobs, targeting an economic stimulus program at increasing green investments also creates more good jobs at higher wages than either a conventional stimulus or comparable spending in the traditional energy sector. A green recovery strategy also offers longer-term benefits: consumer savings by reducing home energy bills; stabilizing the price of oil, natural gas, and other non-renewable energy sources through reduced demand and increased energy diversity; and, of course, building over time a low-carbon economy.

While it is not proposed as an option for economic stimulus, spending on current fossil fuel based energy offers a useful comparison to demonstrate the substantially increased economic benefits of spending on renewable energy and efficiency. Spending \$100 billion within the domestic oil industry, for example, would create only about 542,000 jobs in the United States. A green infrastructure investment program would create nearly four times more jobs than spending the same amount of money on expanding oil energy resources, or 2 million jobs. And again, spending on oil offers no benefit in transitioning the U.S. economy toward a low-carbon future, and perpetuates the economic and national security vulnerabilities of continuing to rely on oil for the lifeblood of our economy.

Why does the green investment program create more jobs than spending within the oil industry or on household consumption? Four factors are at work.

*1) Relative labor intensity is higher*

Relative to spending within the oil industry, the green investment program utilizes far more of its overall \$100 billion in spending on hiring people, and less on purchasing machines and supplies. Renewable energy and energy efficiency create more than jobs per dollar invested than traditional fossil fuel-based generating technologies, by investing money previously spent on wasted energy and imported fuel directly in advanced technology manufacturing, modern infrastructure expansion, and developing the skills of people. These investments substitute dollars spent on pollution and waste and redirect that investment into the skills of workers and the infrastructure of communities.

*2) Domestic content is greater, and economic benefits more widely shared*

A green investment program relies much more on goods and services made within the U.S. economy and less on imports, compared to spending either within the oil industry or on household consumption. In general, about 22 percent of total household expenditures flow toward imported goods. With the green recovery investment program, only about 9 percent purchases imports.<sup>4</sup> Another critical benefit of a green economic recovery program: Infrastructure upgrades, building efficiency retrofits, renewable energy

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<sup>4</sup> [http://www.americanprogress.org/issues/2008/09/pdf/green\\_recovery.pdf](http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf)

installations and other components of green investment all involve work which cannot easily be outsourced. Moreover, the diffuse nature of these programs ensures that spending on goods and services is spread widely across regions of the country, and stays in the local economies where these services are rendered, as compared to large, centralized energy or infrastructure projects. The economic spillover and indirect job creation effects of this phenomenon help explain why green investments create more jobs and more good jobs than the alternatives.

*3) Efficiency improves U.S. competitiveness, and new industries can tap a burgeoning export market for clean technology*

The United States uses nearly twice as much energy per dollar of GNP as other industrialized countries.<sup>5</sup> Creating a more efficient economy helps us compete with international economic rivals, and improves our balance of trade. Currently, oil imports account for one of the largest single shares of our trade deficit, moving to energy efficient technology and clean renewable energy brings dollars back to the domestic economy. Moreover, and largely due to a lack of federal support, the U.S. is lagging behind countries like Germany and Japan in the production of clean energy technologies now experiencing exploding global demand. Investing public funds and providing tax credits to kick-start domestic demand for these technologies will benefit U.S. manufacturers, who enjoy the competitive advantage of local production. With expanding domestic and global markets, and a subsequent ramp up of the economies of scale in the U.S. clean technology manufacturing sector, U.S. firms will be better equipped to tap burgeoning export markets for these products in coming years. Reducing the energy intensity of the economy is also smart competitive positioning in an era of sustained rising prices for basic energy commodities from oil, to natural gas, to domestic coal, exploding global demand is causing prices to outstrip the long term forecasts of energy analysts with no relief in sight. The cost savings for consumers and businesses from a major push on energy efficiency could be staggering. As an example, if the Bush administration had pursued an aggressive package of energy efficiency measures across the economy, starting in 2001 with implementation beginning in 2002, today, the cumulative savings to the economy would be a remarkable \$206 billion dollars in avoided energy costs.<sup>6</sup> These sorts of economic benefits are achievable, and will help U.S. consumers, even as they drive new investment into communities, and open global markets for American business.

*4) Pay levels are diverse, representing jobs across the full range of the economy*

Green investments generate not only more significant numbers of well-paying jobs with benefits than investments in traditional energy supplies like oil, but because they create more jobs over all, they also provide a relatively high proportion of entry-level jobs that offer career ladders, which can move low-paid workers into better employment positions

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<sup>5</sup> Center for American Progress and the Worldwatch Institute, "American Energy: The Renewable Path to Energy Security" (2006) available at [http://www.americanprogress.org/issues/2006/09/american\\_energy.html/AmericanEnergy.pdf](http://www.americanprogress.org/issues/2006/09/american_energy.html/AmericanEnergy.pdf) (last accessed October 2007).

<sup>6</sup> American Council for an Energy Efficient Economy, data supplied by Dr. John Laitner, September 2008.

over time. This broad based nature of the employment impacts, across regions, wage and skill levels, and sectors of the economy is an asset for devising a strategy to invest in economic recovery that is felt broadly on a national basis.

Further, public investment overall represents a sound strategy for economic growth, enabling the market conditions that allow for expanded private sector activity. Infrastructure investments for example, improve mobility, increase efficiency, and provide public support that adds value and productivity to private investment. Enhancing the grid for reliability and efficiency, or promoting real transportation choices like transit and rail, will not only create substantial employment, but it will create more vibrant and efficient local economies and a better quality of life in communities.

In considering the viability of spending on large-scale public investment projects, one of the major issues that is often raised is whether such expenditures absorb the limited amount of total investment funds in the economy, and thereby “crowd out” private sector investment activities. In fact, the weight of evidence examining the impact of public investment on the U.S. economy does not point to a crowding out effect. It rather finds that, on balance, higher levels of public investment will promote private sector productivity and higher rates of return for business. As such, the evidence suggests that many kinds of public investments in the U.S. generally *crowd in* private investment, by establishing the enabling conditions for sustained growth in private sector investment and business formation. As a result, the crowding-in benefits of public investments are also associated with higher rates of private sector employment and job creation.

For our purposes, it is especially important to note that the six categories we outline in the Green Recovery paper are either in an early stage of development and are poised for rapid movement up their growth curve (wind, solar, and “smart grid”), or have suffered from serious under investment (building efficiency and mass transit), and are thus primed to productively absorb a significant amount of both public and private capital investment while offering substantial public return on that investment. Moreover, the strategies outlined in the green recovery plan to support a clean energy economy—especially including mass transit, freight transport, and smart grid—can also generate the additional benefits of enhancing private sector productivity, competitiveness, and employment.

## ***II. What are specific measures that Congress should include in a stimulus package?***

In the “Green Recovery” report, we broadly outline a series of near-term policies that could be enacted quickly to drive new investment into the economy, creating jobs and promoting increased economic activity. We focus on investments to expand energy efficiency and renewable energy, as two central building blocks of the low carbon economy that also lend themselves to immediate public investments, and result in expanded opportunities in the construction and manufacturing sectors of the economy. Specifically, we examined three opportunities each in renewables and efficiency for near-term public spending resulting in six pathways for immediate congressional action.

## 1. Retrofitting buildings to improve energy efficiency

The building sector alone accounts for approximately 48% of all energy consumed in the United States, and 36% of the direct energy-related greenhouse gas emissions, the principal cause of global warming.<sup>7</sup> Meanwhile, families of low and moderate means spend a disproportionate amount of their income on home energy bills, and often reside in some of the most inefficient housing stock in the nation. These expenditures will continue to escalate with the rising cost of electricity and natural gas, putting an increasing burden on American families with little or no disposable income. Building efficiency retrofits serve the triple benefit of reducing energy bills, creating good jobs, and reducing global warming emissions associated with home energy consumption.

Moreover, the U.S. has 300 billion square feet of building stock, of which 5 billion is *already* renovated each year.<sup>8</sup> The energy and money saving potential embedded in the current US building stock is enormous. The Business Roundtable estimates we could save 3.5 quadrillion British Thermal Units of energy (equivalent to 1.65 million barrels of oil/day) by 2025, just by upgrading the efficiency of our existing residential and commercial building stock.<sup>9</sup> Some estimates put the potential annual savings from improved U.S. building efficiency at more than \$200 billion.<sup>10</sup> With efficiency savings of 20-30 percent readily obtainable through easy interventions (improved insulation, lighting, and HVAC controls), and a payback period of less than 10 years, the opportunity is enormous.

### *Recommendations:*

- Fully fund the Weatherization Assistance Program (WAP) at \$900 million, the amount Congress was authorized in the Energy Energy Security and Independence Act of 2007 to spend on the program in FY 2009.

WAP has provided weatherization retrofits to 5.6 million low-income families over the past 29 years; yet there are still 34 million families whose income levels make them eligible, with 15 million of these estimated by DOE to be good candidates for cost-effective weatherization. By the Department of Energy's calculations, WAP produces enormous benefits: an estimated \$1.53 in energy-related benefits, plus \$1.16 in ancillary benefits (for a total of \$2.69), for every \$1.00 in federal funds invested. WAP reduces low-income energy bills by an average of 21% (or \$358 per year, based on 2005 spending levels), and creates 52 direct jobs for every \$1 million of WAP funding, as well as additional jobs for subcontractors and material suppliers.<sup>11</sup> However, WAP is consistently underfunded. In fiscal year 2008 WAP was authorized at \$700 million, but

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<sup>7</sup> <http://www.epa.gov/ttn/chief/conference/ei17/session5/knowles.pdf>

<sup>8</sup> [http://www.architecture2030.org/current\\_situation/hist\\_opportunity.html](http://www.architecture2030.org/current_situation/hist_opportunity.html)

<sup>9</sup> [http://www.businessroundtable.org/pdf/Energy/Business\\_Roundtable\\_Energy\\_Report\\_06062007.pdf](http://www.businessroundtable.org/pdf/Energy/Business_Roundtable_Energy_Report_06062007.pdf)

<sup>10</sup> <http://www.cows.org/pdf/rp-seizing-07.pdf>

<sup>11</sup> <http://www.waptac.org/si.asp?id=1029>

only funded at \$227.2 million.<sup>12</sup> It is a highly effective program that also serves the neediest Americans.

- Fully fund the Low Income Home Energy Assistance Program (LIHEAP) at its authorized level of \$5.1 billion, and expand the energy-efficiency retrofit component

Under LIHEAP, states may allocate up to 15% of their basic grant for low-cost residential weatherization or energy related home repair, and in some cases up to 25%, with authorization from HHS. Fully funding LIHEAP and instructing HHS to allow states to use up to 25% for home energy retrofits would leverage money immediately.

- Fully fund the Energy Efficiency and Conservation Block Grant Program, which authorizes \$2 billion annually over five years to fund energy audits, strategic planning, and other supports for energy efficiency improvements, and will drive resources directly to States, cities, and counties to do the work of home energy audits and weatherization. This block grant program has been authorized but is awaiting the allocation of funds, it is poised to be a centerpiece of driving new recovery funds directly into communities where it can do the most good, and should receive the highest level of attention in designing a program of economic recovery.

Many other policies would could have strong public benefits by moving money into energy efficiency retrofits that can drive new investment, consumer savings, and growth. The Congress should:

- Match state public benefit funds and other locally based programs supporting energy efficiency and green building retrofits to both public and private buildings.
- Require the retrofitting of all U.S. government buildings in need
- Extend and increase financial incentives for energy and efficiency improvements in private residences and commercial structures including:
  - Residential Energy Efficiency Tax Credit
  - Residential Solar and Fuel Cell Tax Credit
  - Business Energy Tax Credit
  - Energy Efficient Commercial Buildings Tax Deduction
  - Energy-Efficient New Homes Tax Credit for Home Builders
  - Energy Efficient Mortgage federal loan program

## 2. Expanding mass transit and freight rail

Many critical mass transit programs are currently bottlenecked for lack of federal dollars. A clear example is the Metrorail extension to [Dulles International Airport](#), which has been delayed due to a lack of firm commitment from FTA officials. Mass transit is a critical solution for reducing traffic congestion, urban and rural air pollution, and

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<sup>12</sup> [http://www.eere.energy.gov/weatherization/source\\_fund.cfm](http://www.eere.energy.gov/weatherization/source_fund.cfm)

transportation-related global warming emissions, while weaning the U.S. off our crippling dependence on oil. Upgrades to our freight rail through public investment would also yield immediate job gains and help private industry by increasing the reliability of our national rail distribution system.

*Reccomendations:*

- Fully fund federal transit programs in 2009 at the \$10.3 billion level authorized by SAFETEA-LU.
- Expand federal support for state and municipal transit operation and maintenance budgets to deal with increased ridership
- Increase federal subsidies for employer-based mass transit incentives, and
- Expand federal support and underwriting for rail [rehabilitation or new construction through the Railroad Rehabilitation & Improvement Financing \(RRIF\) program of the Federal Railroad Administration](#)

3. Constructing “smart” electrical grid transmission systems

Regional smart grid projects are increasingly being pursued around the country, yet they would benefit enormously from an influx of public investment. A smart grid combines advances in information technology with innovations in power system management to create a significantly more efficient distribution system for electrical energy. Smart grids help defer construction of unnecessary new generation by actively managing electricity loads; reduce costs from outages through active grid management; and increase demand-side efficiencies using advanced controls and diagnostics.

The environmental and energy savings benefits of the smart grid are enormous. A Pacific Northwest National Laboratories (PNNL) study estimates that the value of an energy system transformed with smart grid technology could yield savings in excess of \$80 billion over the next 20 years.<sup>13</sup> A study by the independent RAND Corporation identified potential benefits exceeding \$100 billion over the next 20 years in two of the five smart grid deployment scenarios it examined.<sup>14</sup>

Smart grid technology is also an important enabling tool to bring energy online from wind farms, solar panels and other renewable power sources, to radically accelerate energy efficiency efforts, and to ultimately incorporate Plug-In Electric Vehicles.

*Reccomendations:*

- Fully fund and expand the Smart Grid Title (Title XIII) of the Energy Independence and Security Act of 2007

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<sup>13</sup> <http://gridwise.pnl.gov/moreinfo/faqs.stm>

<sup>14</sup> [http://www.rand.org/pubs/technical\\_reports/2005/RAND\\_TR160.pdf](http://www.rand.org/pubs/technical_reports/2005/RAND_TR160.pdf)



- The Smart Grid Regional Demonstration Initiative (RDI), which provides up to a 50% cost share to utilities for qualifying smart grid technology investments included in a demonstration project (up to \$100 million per year for the next 5 years).
- Increase support for the Smart Grid Investment Matching Grant Program, which provides reimbursement of one-fifth (20%) of the cost of qualifying Smart Grid investments.
- Establish a “21st Century Electricity System Security and Modernization Fund” to deploy smart grid technologies

#### 4, 5, 6. Wind power, Solar power & Next-generation biofuels

Including the 2007 Energy Bill, there have been at least seven attempts to extend and update federal tax credits for renewable energy & energy efficiency. Four of these attempts were blocked because the bill failed a cloture motion to be considered in the Senate. Allowing these tax credits to expire could cost 116,000 U.S. jobs and nearly \$19 billion in lost U.S. investment in the wind and solar industries alone. Generous and stable federal tax incentives and credit subsidies are necessary in the near term, to encourage private investment during the nascent stages of these industries, which are sources of manufacturing, installation, and service jobs in all corners of the country.

Meanwhile, next-generation sustainable biofuels have the capacity to deliver a secure, stable, and environmentally-sound supply of fuel to replace our crippling dependence on oil. Moreover, production of biofuels like cellulosic ethanol and biodiesel from non-food crops offers an incredible opportunity for economic development in rural communities throughout America.

#### Reccomendations:

- Renew and expand the Investment Tax Credit and Production Tax Credit for solar and wind energy for a minimum of 5 years.
- For solar, allow the credit to be used to offset alternative minimum tax (AMT), and remove the existing limitation that prevents public utilities from claiming the investment tax credit.
- Fund and expand the following programs established in the 2007 Energy Independence and Security Act to help build advanced biofuels infrastructure:
  - Renewable fuel infrastructure grants for retail and wholesale dealers
  - Pilot grant programs to invest in renewable fuel distribution corridors
- Provide federal loan guarantees for the next generation of advanced biofuels, where new companies face significant financing hurdles to break ground on manufacturing facilities that operate at a commercial scale
- Create a cellulosic biofuels small producer tax credit of \$0.30 per gallon for the first 30 million gallons<sup>15</sup>

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<sup>15</sup> [http://www.americanprogress.org/issues/2007/01/farm\\_economy.html](http://www.americanprogress.org/issues/2007/01/farm_economy.html)

In addition, the Center for American Progress strongly supports full funding of the Green Jobs Act, authorized in the 2007 EISA at \$125 million per year for job training and workforce investment to provide a skilled workforce to undertake energy efficiency upgrades and renewable energy installations. The Green Jobs Act could support smart workforce development that ensures a skilled and ready workforce to provide jobs in the construction of green infrastructure, the installation of energy efficient technologies, and the building of a renewable energy industry. It is smart policy, and would put money directly into the pockets of workers and invest in their skills for participating in the workforce in a rapidly changing and increasingly green economy.

It is also noteworthy, that currently in Congress appropriations for a \$25 billion loan program for automobile companies to retool factories and retrain workers are receiving serious consideration. While our paper, and the projection of creating 2 million jobs, did not look at the benefits of investment in the automotive industry, it is clear that investing in the rapid conversion of the U.S. auto industry to produce highly fuel efficient and alternative fuel vehicles, could provide a major boost to global competitiveness, near term stimulative investments, and long term reductions in CO2 emissions. This strategy should be encouraged. Any loan program that moves forward should have strong guarantees that both the environmental performance goals and domestic retooling and workforce investments are met, as a condition of the loans. In addition, the experience of the Chrysler loan guarantee program showed that such emergency relief can also enable the government not only to share the risk, but to benefit from the up side when such loans are successfully repaid. In the Chrysler loan guarantee program, the U.S. treasury made \$311 million dollars when it sold warrants issued as a part of the relief package.

#### *Proportional breakdown in spending*

The allocation of total investment funds that we assume in our report is: 40 percent for retrofits; 20 percent for mass transit/freight rail; and 10 percent each for smart grid, wind power, solar power, and advanced biomass fuels. Adjusting the budgetary allocations would affect the job total estimates, but not to a dramatic extent. The programs presented here are strong candidates for appropriations that would move funds directly into productive purposes that will support economic recovery, and invest in a clean energy transition. This is not intended as an exhaustive program, but rather it identifies some high value targets as such a plan is developed.

As a stimulus and economic recovery package, it is entirely appropriate that these investments should be funded out of near term general revenue. However, numerous additional revenue sources can be easily identified to provide offsets for some of this spending as well. Immediately, a portion of the investment could be funded by repealing tax loopholes for the oil and gas industry, improving the collection of royalties for drilling on public lands, or by closing off shore tax havens. Over time, revenue from a cap and auction program could more than adequately cover the costs of a green transition. In addition, some investments proposed here, because they have a rapid payback and a

positive return on investment, such as energy efficiency, could be designed to provide self financing mechanisms or to repay the treasury over time.

***III. What is the proper relationship between the short to medium-term measures and a longer-term investment in clean tech and green jobs?***

Investing in a green recovery is not a replacement for a more comprehensive climate strategy, rather it represents an opportunity to make a significant down payment on the sort of economic activity that will be required to fundamentally transition our economy away from carbon intensive and imported energy sources, and to begin the process in earnest of moving toward more efficient, domestic, and renewable energy as a solution to global warming.

This green recovery program is entirely consistent with a cap and trade program, and these clean energy investments ultimately could be funded through the revenue resulting from a cap and auction mechanism. However, the investments laid out in the CAP report “Green Recovery” are also independent of whatever policy is advanced as a strategy for pricing carbon, and they represent smart economic growth policy in their own right. At a time when the United States manufacturing economy has been in dramatic contraction, and the collapse of the housing market is causing severe disruption in financial markets, a program that reinvests in new construction through smart infrastructure and building energy efficiency, while developing new markets for U.S. manufactured products, is a smart way to jump start the American economy.

In addition to the recent report on Green Recovery, the Center for American Progress has outlined a critical path for the long-term transition to an economy that seriously takes on the challenge of advancing climate solutions. The CAP report “Capturing the Energy Opportunity: Creating a Low-Carbon Economy<sup>16</sup>” identifies “10 Steps to a Low-Carbon Economy” that will be critical to moving our country toward reliance on low carbon energy. This strategy involves a mix of direct investment, smart regulation, and administrative solutions. The near- and medium-term investments outlined in the Green Recovery program are wholly consistent with this longer-term vision for change. A comprehensive program of global warming solutions, however, will include the following:

1. Create an economy-wide, greenhouse-gas-emissions cap-and-trade program: The atmosphere is a limited resource, and it is being used up rapidly. At the center of a broad based strategy for addressing global warming are policies to cap carbon emissions and put a price on their release. This is a critical policy for fixing broken market signals that encourage pollution. It also can be a significant source of revenue for public investment in climate solutions. The Center for American Progress Action Fund supports a 100 percent auction of CO2 emission credits. Experts place the

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<sup>16</sup> Report available at: <[http://www.americanprogress.org/issues/2007/11/energy\\_chapter.html](http://www.americanprogress.org/issues/2007/11/energy_chapter.html)>

value of such an auction at from 50 to 300 billion dollars each year, when fully implemented. CAPAF estimates conservatively that auction revenues could result in 75 billion dollars per year to the public treasury, for advancing public purposes. Ten percent of this auction revenue could be directed to businesses operating in energy-intensive sectors to provide assistance with changing energy prices. The remainder could be divided equally between 1) low- and moderate-income Americans to help offset any equity impacts from potential near-term energy-related price increases during a transition, and 2) funding to spur science and technology innovation and to drive our transition to a low-carbon economy by funding RD&D projects, tax incentives, and other initiatives. A green recovery strategy would offer a significant down payment on this effort, and could ultimately be repaid by auction revenue.

2. Eliminate Federal tax breaks and subsidies for oil and gas: Providing a level playing field for clean technology, will require elimination of subsidies for mature industries and high carbon sources of energy. To the extent that a green recovery program is funded by closing tax loopholes for oil and gas and shifting subsidies toward investment in low carbon clean technology, it will help fix longer term market failures as well as providing needed resources to jump start critical construction projects and build new market activity in clean energy.
3. Increase vehicle fuel economy: The future of domestic automobile manufacturing lies in developing more fuel efficient and advanced technology vehicles. Dramatically improving fuel economy across the fleet is also essential for climate protection. In addition to pricing carbon, a host of complementary policies to assist with the challenges faced by particular sectors of the economy will be required. Average fuel economy should be raised to 40 mpg by 2020 and at least 55 mpg by 2030. In addition, a comprehensive policy package should provide incentives to auto manufacturers to retool their assembly lines and retrain workers to produce a new generation of vehicles, while consumer tax credits for the purchase of more fuel efficient vehicles can also accelerate the turnover of the domestic fleet.
4. Increase production and availability of alternative low-carbon fuels: In addition to increasing the efficiency of the cars we drive, it is also essential to change the fuels we use to power transportation. The United States should set a target of using low-carbon alternative fuels, including electricity, to supply 25 percent of our nation's transportation fuels by 2025, and a low-carbon fuel standard should reduce lifecycle emissions from transportation fuels by 10 percent by 2020. In addition, a renewable fuels certification program with transparent sustainability labeling will provide certainty to the market for alternative fuels. Turning over our fueling infrastructure can be driven by a pump-or-plug mandate that requires 15 percent of fuel "pumps" (including dedicated electricity charging stations for plug-in hybrid vehicles) to provide low-carbon alternative fuels in any county in the U.S. where 15 percent of vehicles can run on these alternative fuels.
5. Invest in low-carbon transportation infrastructure: New investment in more diverse and inter-modal transportation networks such as local mass-transit, regional and

interstate long-distance high-speed rail systems, and green city programs to encourage the redevelopment of urban areas and reduce long commutes and suburban sprawl, will provide another front for reducing carbon emissions. Such transportation investments will provide consumers with more choices and improve quality of life in our nation's cities and rural areas. In addition, they can be a centerpiece of a green recovery program through investment in smart infrastructure that creates good jobs.

6. Improve efficiency in energy generation, transmission and consumption: In the electricity sector, there has been a tremendous underinvestment in public transmission infrastructure, and regulatory barriers have prevented maximizing the potential for renewables and efficiency to contribute significantly to a clean energy transformation. A national Energy Efficient Resource Standard could require electricity and natural gas distributors to meet a 10 percent energy savings threshold through efficiency upgrades by 2020. at the same time, a major upgrade of the U.S. electricity grid to increase energy and national security, encourage distributed generation, and increase the efficiency of transmission would both create new economic activity in the near term, and improve the efficiency of our energy system. Requiring efficiency upgrades for our appliances and private, commercial, and federal buildings will not only dramatically reduce our national energy consumption, but it will expand the market for new advanced, high efficiency manufactured products as well.
7. Increase the production of renewable electricity: Both requirements and well structured incentives are required in both the short- and long-term to grow the market for clean domestic renewable energy. A national renewable electricity standard to require 25 percent of energy produced in the United States to come from renewable sources by 2025 will provide certainty to the market. Increasing distributed renewable electricity generation will improve efficiency by generating electricity close to the point of use, it will increase the resilience of the grid network, and cut costs by shaving peak loads to optimize generation. Investment in renewable energy can be greatly accelerated by improving the structure of investment and production tax credits and low interest loans to provide long-term predictability to investors.
8. Use carbon capture-and-storage systems to capture and bury the carbon emissions from burning coal: Deployment of new carbon capture-and-storage technologies is essential if future coal generation is to be a positive contributor to our energy security in an economy where carbon emissions are constrained. Market signals from cap and trade are unlikely to be sufficient to spur this new generation. Setting an emission performance standard for all new coal-fired facilities equivalent to the best available capture-and-store technology will be critical in ensuring that new plants are built with the ability to reduce carbon emissions. Federal funds to help offset additional costs of implementing carbon capture-and-storage technology can also help to move energy markets to increase construction of advanced, low carbon emission coal plants.
9. Create a White House National Energy Council and make the Federal government a low-carbon leader: Building the institutional capacity in government to support a rapid shift to a clean energy economy will also be required for a swift and effective

transition of our energy system. Creating a White House National Energy Council to lead all other agencies in making energy and global warming top administration priorities will help to make this a true national commitment. The purchasing power of the federal government can also be used effectively to promote low-carbon technologies, while implementing new tax policies, creating dedicated federal agency capacity to address global warming, an Energy Innovation Council to spur interagency alternative energy-related research and development, an Energy Technology Corporation to demonstrate the efficacy of these new clean technologies, a Clean Energy Investment Administration to ensure these technologies make it to the marketplace, a Clean Energy Jobs Corps to promote “green collar” jobs in a new clean energy economy, and more than doubling currently existing federal investment in low-carbon energy RD&D will all contribute to making the Federal government a driving force in a low carbon economy.

10. Lead efforts to advance international global warming policies: Internationally the U.S. can help promote global cooperation by creating an “E-8” of nations comprised of leading developed and developing countries devoted to addressing global ecological and resource issues, as well as by taking the lead once again in the U.N. Framework Convention on Climate Change, and investing in the energy, environment, and infrastructure sectors in developing nations to alleviate energy poverty with low-carbon energy systems and to help these nations adapt to the effects of climate change over the long term.

Such a comprehensive program of domestic and international policy change and investment is beyond the scope of consideration in this near-term investment, stimulus and growth proposal. But given the magnitude of the coming challenges in building a vibrant, competitive and low carbon economy, it is essential that Congress, as guardians of public trust resources seek to make any short term investments in stimulus with an eye toward coming long-term public challenges. In addition, our research with the University of Massachusetts shows that as well as providing long term benefits, a Green Recovery is good economic policy as well, by providing more jobs and more good jobs for the American people. As such, a green recovery strategy also represents good government, by anticipating challenges, and investing in healthier communities, a more robust economy, and a safer world.

Thank you for your interest in considering these ideas for a Green Recovery strategy that takes significant strides toward building a low carbon economy, while investing in near-term economic recovery.