

Project 2011: Cutting the Cost of Clean Energy (Version 1.0)

***An Outline and Discussion Draft for Proposed Energy Reform
Legislation for the 112th Congress***

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What follows is a single, coherent proposal that we hope will be adopted in whole by the next Congress. We intend for this proposal to spark creative discussion about how to improve any or all of its features. We believe, however, that there already is widespread bipartisan agreement – and we know there is widespread business agreement – that America will be better off if investment and job growth both increase in the clean energy sector, including both generation and efficient consumption of energy. People may disagree about numerous environmental concerns, but even those who most fervently debate those issues tend to believe that continued research, development, deployment, private sector investment, and domestic self-reliance are all critical to the energy sector. On that basis, Congress should be able to act, quickly, with resolve in deploying more innovative, cleaner, and more efficient energy infrastructure, and we believe, with near unanimity, as was achieved by a Republican Congress and a Democratic White House with respect to the Telecommunications Act of 1996, written in the first year of the newly elected Republican-led Congress.

This is version 1.0 of the legislative proposal. We seek input from the readers of this proposal on its recommendations. The Coalition for Green Capital is establishing a site on its web page where comments and suggestions can be posted and reviewed (www.coalitionforgreencapital.com). We request comments by December 10 and intend to publish version 2.0 by December 20.

The Coalition for Green Capital (CGC) drafted this proposal in consultation with its partners and drew from multiple sources – Republicans and Democrats, financial experts, policy advocates, industry representatives and many others. The ideas here have been developed for many years, but specifically have been assembled into what we hope is a coherent proposal during working group meetings over the last 90 days. We do not regard any part of this proposal as final, and we would be happiest with the outcome if it sparked discussion among bipartisan groups in Congress, and multiple business forums, as well as environmentalists and other stakeholders. A separate policy paper analyzing these issues, prepared by CGC and the Center for American Progress (CAP), is being distributed simultaneously with this more detailed outline of a draft legislative proposal.

Comment [MSOffice1]: The American Public Gas Association (APGA) offers the following general comments with respect to Version 1.0. The document raises a number of valid points with regard to supporting clean energy (e.g., tax credits should be monetized; tax credits need to be long-lasting; regulatory barriers should be removed). However, we believe the current version is lacking in its support for natural gas, specifically by not recognizing its efficiency and emission advantages and the absence of policy measures that could promote the increased use of natural gas vehicles (NGVs) and the building of NGV fueling infrastructure. While the document supports extension of tax incentives for alternative fuel vehicles and EPA's removal of regulatory barriers to facilitate the increased use of aftermarket conversion systems, the tax credit discussion, does not specifically call for extending incentives for natural gas vehicles and does not indicate which incentives would be extended. The document focuses almost exclusively on efforts that concern the use of electricity. We believe that the document and proposed policy measures should also include an increased role for clean, domestic natural gas. To that end, we offer several specific comments below. The first being, introductory language should specifically recognize that there is bi-partisan support for taking steps to increase the use of domestically produced natural gas

Central to this proposal are five thematic ways to create continued, efficient, profitable private investment in energy generation, distribution and consumption, thereby enhancing national competitiveness and creating many new jobs:

1. Lower the cost of sustainable energy generation and more efficient consumption to facilitate market competition between new and existing forms of energy,
2. Increase American ability to compete effectively with firms supported by other nations that utilize demand growth and low-cost long-term finance to provide competitive advantages to national champions.
3. Immediately provide a stable long term investment environment, lasting for a decade, to encourage profitable business deployment of sustainable energy, unleashing the private sector to respond to America's clean energy capital investment challenge in unpredictable but surprisingly large and helpful ways that create new jobs, increase national income, produce productivity gains, and bolster national security.
4. Reduce artificial regulatory barriers to investment in clean energy technologies, products and services through promotion and development of uniform and predictable practices for regulation of utility rates and utility mergers, joint ventures and other forms of corporate re-organization that tend to maximize efficient, long term investment in clean technology deployment.
5. Target public engagement in energy where it is most needed, while freeing the private sector to lead where it is best suited to innovate – including minimizing the use of agencies and instrumentalities of government in direct financing and deployment of clean energy, while focusing the federal role instead on research, development, and first of a kind deployment.

Some of the means to these ends that are chosen in this proposal are:

1. Provide low-cost long-term financing for deployment of innovative, clean and efficient energy projects by creating an Energy Independence Trust – not a government agency but a non profit run by private sector managers as a federal corporation.
2. Establish for ten years, tax policies that will reduce taxation of clean energy investments, ensure more stable and predictable returns for investors, and address numerous market barriers and inefficiencies in the energy sector.
3. Reduce or eliminate regulatory barriers to deploying clean energy technology profitably, and reducing the direct government roll in traditional energy generation, encouraging increased private capital investment in innovative energy businesses. For example, the government should evaluate the costs and benefits of selling at auction ownership of the Tennessee Valley Authority (TVA), and streamline infrastructure investment in all forms of clean energy generation and use, including in transportation.

Section One: Creating jobs by financing the rapid deployment of clean energy and energy efficiency

If the price of carbon-based energy is relatively low due to an excess of supply over demand and favorable operating costs, financing, regulatory and tax treatment of status quo conditions, then in order to hasten investment in efficient energy generation and consumption sustainable for the future, low-cost long-term financing is essential. We propose that the federal government charter a new, independent non-profit financial institution that would encourage the private sector to invest in clean energy projects. This new financial institution, which we call the Energy Independence Trust, would provide low cost capital to the private sector for clean energy project finance at no cost to the federal government.

Comment [MSOffice2]: The document should specifically identify natural gas as a clean energy source that is abundant and economically very attractive; the increased use of natural gas will help stimulate the economy by increasing jobs associated with its production and also by providing a ready source of economically priced energy for businesses and consumers.

It also should be stated upfront that there is a great deal of bi-partisan support for taking steps and incentivizing activities that reduce reliance on petroleum imports;

In addition, our proposal calls for a range of other tax, bond, and credit enhancement tools to further decrease clean energy project finance costs in order to increase investor interest in these projects while reducing risk, uncertainty, and the total cost of deployment. The Energy Independence Trust would be able to use these various tools to encourage sustained private-sector investments in clean energy.

A. Establish an Energy Independence Trust

Purpose: A new non-profit lending institution, the Energy Independence Trust, would support near-term and widespread deployment of proven clean energy projects and technologies and bring to scale energy efficient projects in the residential, small business and commercial markets by providing a wide range of low cost financing, including loans, loan guarantees, support for tax equity financing, and other financing arrangements for qualified credit worthy clean energy and energy efficiency projects.

Structure and Funding: The Energy Independence Trust would be established as an independent federal non-profit corporation that is not an agency or government-sponsored enterprise of the federal government (and thus would not create additional federal debt). The Trust would be authorized to borrow an amount specified in the legislation from the Treasury and to request additional borrowing as needed. The Trust would also be able to issue bonds and notes, to borrow money, and to receive charitable gifts, grants, and contributions from individuals, corporations and philanthropic foundations. The Trust would be required to maintain adequate capital ratios and loan loss reserves to protect the Treasury, and borrowers would be required to pay fees sufficient to make the loan portfolio whole in the event of any loan losses.

The Trust could seek to qualify as a Community Development Financial Institution, or CDFI, and be eligible for funding from the CDFI Fund, and eligible to receive discount loans from banks meeting their Community Reinvestment Act obligations. The Energy Independence

Trust would be treated as a qualified community development entity for purposes of Section 45D and Section 1400N (m) of the Code.

The Energy Independence Trust would be provided with start up funding to cover its initial administrative costs. It would use its non-administrative funding to leverage private capital investment in clean energy and energy efficiency projects, driving deployment through access to low-cost capital. The Trust would be designed to score at zero for federal budget purposes, or very low cost to the federal government, and would further establish comprehensive spending safeguards and reporting and auditing requirements.

Clean energy generation

The Energy Independence Trust would establish a program to provide loans, loan guarantees, and other forms of financing support for qualifying clean energy projects where the Trust's chief executive officer determines that the private credit markets are not providing adequate low-priced financing to enable deployment of otherwise credit worthy qualified clean energy projects. Financing from the Trust would require the borrowers receiving clean energy project loans establish a loan loss reserve by making an up front payment to the trust that the borrower could finance sufficient to cover expected losses on the loan portfolio.

To support the "IMPACT" Act (S. 1617), the Trust would provide financing to manufacturing facilities and to states to establish revolving loan funds to provide loans to small and medium-sized manufacturers to finance the cost of reequipping, expanding, or establishing (including applicable engineering costs) a manufacturing facility in the United States to produce: clean energy technology products; energy efficient products; or integral component parts of clean energy technology products or energy efficient products; and to provide financing to reduce the energy intensity of a manufacturing facility in the United States, including using energy intensive feedstock.

The Trust would establish criteria for federal certification of state Clean Energy Financing Institutions, or CEFIs, including the scope of clean energy projects eligible for financing support and the state CEFI underwriting requirements. Preexisting state clean energy financing institutions, including revolving loan programs and clean energy funds, would be eligible for certification as a state CEFI provided that they use the financing support provided by the Energy Independence Trust in accordance with the terms of the authorizing legislation for the Trust. States would be invited, but not required, to create their own state CEFIs.

Energy efficiency

The Energy Independence Trust would provide loans to implement energy efficiency projects in homes, commercial and industrial buildings. In the case of loans to finance energy efficiency retrofit projects in homes and for small businesses, the loan could cover up to 100 percent of the retrofit and the repayment of the loan could be limited to the amount of the lender's average monthly energy savings. In the case of loans to electric and

natural gas utilities, the Trust could provide loans in excess of the value of the retrofits, where any additional funds are used by the utility to reduce the cost of its operations to offset revenue lost by the decreased energy use that results from energy efficiency programs. Such a strategy would not only improve access to capital for retrofits, but also reduce the market disincentive for utilities to provide such services to their ratepayers.

To implement energy efficiency projects in homes, commercial and industrial buildings, the Trust would be authorized to provide loans or loan guarantees to electric power companies, energy service companies (ESCOs), state energy efficiency programs, state CEFs, companies installing smart grid equipment, and any other company implementing an energy efficiency project. Companies and entities to which the trust would provide funding could take a second lien on any property to which they provide a Trust-funded energy efficiency loan.

The Trust would establish lending guidelines that companies and entities which receive energy efficiency loans would have to follow. The Trust would establish a loan loss reserve to cover defaults on repayment of loans to the companies to which the Trust provided financing and which complied with the EIT lending guidelines.

The Trust would link measurement and verification to HOME STAR performance standards and/or other robust data and monitoring systems for all qualified energy efficiency project.

The Energy Independence Trust could further provide financing to encourage retrofitting of the bulk transmission and distribution system for smart grid capabilities, and to provide financing to projects designed to develop an electrification grid infrastructure.

B. Tax policies to increase investment in clean energy projects

All investment is encouraged or discouraged by tax treatment; there is no such thing as neutrality in the real world of tax policy. We do not suggest altering the tax treatment of status quo energy sources or existing energy consumption. However our proposal does contemplate encouraging nascent industry activity in the energy sector by reducing or removing income tax, barring or limiting state taxation, and enhancing profitable investments in the new forms of energy generation and consumption that will be sustainable for decades to come. The proposal also includes already successful, critically important tax policies that should be extended over the next decade. America will grow its way out of recession and into a sustainable, bright economic future if the tax code is altered to liberate the creativity and risk-tolerance of businesses in the energy sector.

The current tax situation for energy investment is biased against new renewable projects. Most developers of clean energy projects, moreover, either do not have sufficient tax capacity to efficiently utilize such incentives as do existing energy sources or need to monetize the value of incentives up front in order to finance the cost of developing such projects. Accordingly, many developers seek "tax equity" to efficiently monetize such incentives and provide capital for such projects.

Comment [MSOffice3]: Version 1 needs to recognize the efficiency and environmental advantages of natural gas as compared to electricity. Consider the following:

Using full-fuel-cycle metrics to compare efficiencies, consistent with the National Academy of Science recommendation to measure energy consumption levels of greenhouse gas (GHG) emissions, see comparisons below: <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12670>

Efficiency of Electricity Deliver

Source Energy	Extraction
Coal	98.0
Oil	96.3
Natural Gas	97.0
Nuclear	99.0
Hydro	100.0
Biomass	99.0
Wind	100.0
Solar	100.0
Geothermal	100.0
Other	100.0

Efficiency of Natural Gas, Fuel

Source Energy	Extraction
Natural Gas	97.0
Heating Fuel Oil	94.9
Propane/LPG	94.6

Figure 3 US Average Full-Fuel-Cycle Energy Efficiency Factors for Energy Delivered to Buildings

Source: CMIC Source Energy and Emissions Analysis Tool (www.cmictools.com)

A full-fuel-cycle energy metric will allow evaluation of the impact of equipment and building energy use on overall energy use consistently and equitably. Site measurement methods—a calculation of the energy consumed by an appliance at the point of end-use in the building—do not properly or equitably account for the total energy consumed when more than one energy source is used in an appliance (such as a gas furnace) or when comparing the consumption of different fuels that can be used for the same application (such as water heating) [1]

Unfortunately, due to the recent economic downturn, many companies that have historically provided tax equity financing no longer exist or have little or no tax capacity.

Other major issues include but are not limited to the following:

1. The time frames for developing and completing sustainable energy projects are longer than the predictable periods for tax treatment. Ten year projects need a decade or more of predictable tax policy.
2. The size of markets in tax equity and other monetizable tax products is smaller than the amount of investment needed to pull innovations into the sector at scale sufficient to lower costs and increase job growth.
3. Nascent markets in energy efficient services and other areas need reliable and predictable low taxation policies.

An effective tax policy solution to accelerate and expand the deployment of clean efficient energy must:

1. Reduce the after-tax cost of capital through targeted, time-sensitive tax incentives.
2. Ensure the availability of such incentives for a significant period – at least ten years, so as to encourage the sort of long-term capital formation necessary in the energy sector.
3. Ensure the ability to efficiently monetize tax incentives, at large-scale and continuously through periods of market volatility.

Set forth here are a range of proposals that separately or together, could reduce the after tax cost of capital through long-term tax incentives and enable project developers to fully realize the tax incentives that apply to their projects. With the exception of the Section 1603 program, which should be extended for two years, all of the tax incentives described below would sunset 10 years after they go into effect.

Equalizing expense treatments: Renewable energy projects require high up-front capital expenses that have to be depreciated and they have very low operating costs that are expensed. The opposite is true for fossil fuel projects. To more adequately take into account the life cycle tax treatment of these projects, clean energy projects should be allowed to expense 100% of their capital costs in their first year.

Allow master limited partnership structures to be used for clean power generation: The master limited partnership market currently represents well over \$100 billion of capital and is a highly liquid market. Currently, fossil fuels can use this structure and clean energy cannot. Amending section 7704(d) of the Internal Revenue Code (the “Code”) to expand the definition of qualifying income to include revenues arising from the generation and sale of electricity produced from renewable resources would permit more favorable capital structures to be employed and allow such projects to obtain cheaper equity financing, thereby lowering the overall cost of capital for clean energy projects. By increasing the

number of investors able to invest in clean energy projects, this amendment to the Code would help to level the playing field between clean energy and fossil fuels.

Reduce income tax on gains realized on the sale of ownership interests of certain qualified clean energy companies with respect to investments made through 2021, and reduce taxation for the incremental sale of new energy efficiency services: Reduction of these taxes would provide additional incentives to investors and help overcome any remaining market barriers to the deployment of clean energy and energy efficiency projects.

Extend and expand both the Investment Tax Credit and Production Tax Credit through 2021: Both the ITC and PTC should be extended through 2021 for all clean energy projects and the ITC should be expanded to cover offshore wind facilities, renewable energy integration, energy storage on a technology neutral basis, and alternative fuels. An extension will provide certainty for investors over a meaningful time horizon and will allow clean energy projects to attract needed capital. History shows that deployment of capital for new clean energy projects declines as the expiration of such credits approaches. A long-term expansion of these incentives will reduce the uncertainty regarding the availability of such incentives and thus facilitate the deployment of capital for clean energy projects.

Provide tax exempt bond financing for clean energy projects: States are struggling to encourage development of green jobs and to create projects during times of very tight budgets. Allowing states and local governments to issue tax-preferred “Build America” bonds to finance certain private activities for clean energy projects and exempting these from the statewide volume cap would expand the amount of low cost private capital available for clean energy projects and hasten their development. The bonds would be repaid by the clean energy projects and would lower the cost of clean energy and efficiency projects.

Extend the 1603 Treasury Cash Grant program through 2012: The grant program established under section 1603 of the American Recovery and Reinvestment Act of 2009 has been instrumental in allowing clean energy developers to realize the value of their investments up front where they would not have otherwise had sufficient tax capacity to take advantage of the clean energy tax incentives. A two-year extension of the grant program, through the end of 2012, would enable developers to obtain the requisite capital to build clean energy projects that otherwise might not proceed because construction cannot begin before the end of 2010.

Extend and enhance the 48(c) manufacturing tax credit for US Clean Energy Manufacturing: Amend section 48C of the Code to authorize an additional \$5 billion of tax credits to be allocated for qualifying advanced energy manufacturing projects. One of the most important new credits intended to promote renewable energy projects is that provided for qualifying advanced energy manufacturing projects under section 48C of the Code. This credit is equal to 30% of the qualifying capital investment, and is allocated by the Department of Energy. The credit is available for investments in certified qualified advanced energy manufacturing projects that reequip, expand or establish manufacturing facilities for the production of various products designed to produce energy from

renewable resources, reduce greenhouse gas emissions or conserve energy. By encouraging investments in such advanced energy manufacturing projects, this program is designed to build a long-term renewable energy industry in the United States, which will not be dependent on foreign suppliers. Unfortunately, the funding for this credit was limited to \$2.3 billion and only one-third of the qualifying applicants received an allocation of such credits.

Creating incentives for whole building retrofits: Whole commercial building energy efficient retrofits receive a tax deduction of \$1.80 per square foot. To help bring this program to scale, the deduction should be increased to \$3.00 per square foot, to provide greater incentive for building owners to make incremental investments to improve the energy efficiency of their buildings. Similarly, increasing and extending the new energy-efficient home tax credit would increase consumer energy awareness and benefits to energy ratings.

Incentivize alternative fuel vehicles: Amend the Internal Revenue Code to increase and extend tax credits for alternative fuel vehicle refueling property expenditures for vehicles powered by electricity; and allow a tax credit for qualified electric vehicle refueling property bonds, and provide additional credits concerning renewable energy, alternative fuels, and electric and hybrid vehicles.

Comment [MSOffice4]: 1. This paragraph should be expanded and call for adoption of the NAT GAS Act (S. 1408 & HR 1835). The NAT GAS Act specifically improves upon and expands the incentives for natural gas fueling stations and vehicles. We agree with Version 1.0 call for these incentives to be adopted and remain in place for 10 years.

C. Support new funding sources such as divesting public ownership of Tennessee Valley Authority (TVA) assets

TVA Study: Require the OMB and DOE to conduct a study within six months that reviews the costs and benefits of privatizing the TVA, its potential impact on consumers, and the revenue it could generate. Within 9 months, the OMB and DOE would jointly promulgate its decision concerning what government owned assets it will auction, and what essential public purposes should be preserved. The funds of any such auction shall be dedicated solely to the purposes otherwise described in this proposal, and with special attention to reducing the costs of clean energy deployment within the TVA service territory. The auction shall be held not later than January 1, 2014.

Section Two: Job creation through regulatory reform

Removing regulatory barriers to the deployment of clean energy, and providing market certainty through well crafted utility policies to create predictable demand for clean energy generation, are both essential for expanding energy markets for new products and services. Regulatory reform can help build larger and more robust markets for clean energy, and create more certainty for project investors, in turn driving down costs for consumers, and establishing profitable domestic businesses.

A. Establish a Clean Energy Investment Standard

Purpose: More than thirty-five states have some form of requirement for utilities to plan for and develop renewable or alternative energy at a set percentage by a date certain. These targets range from 7.5 percent to 40 percent of total energy and span from several years to several decades. The wide diversity among state markets and energy resources translates to great regional diversity in renewables used nationally.

Yet the absence of a clearly predictable, liquid, national market for our domestic energy resources has slowed investment. Development of a single national renewable energy credit market would eliminate concerns in some regions about high costs for local renewable energy development. The national renewable energy certificates would be available throughout the country at the same price, regardless where the renewable energy underlying the certificate was generated.

Bi-partisan majorities in both the House and Senate have at various times expressed support for renewable energy standards. In the Senate, for example, a bi-partisan Renewable Energy Standard (S-3813) has been introduced by Senators Bingaman and Brownback, to ensure that 15% of U.S. electricity comes from renewable sources by 2021. Yet differences exist in the aggressiveness of targets, the treatment of non-renewable but low carbon energy sources such as nuclear power, and the ability to transfer cost-effective energy efficiency investments for renewable energy generation. Recent energy bills considered in Congress would have established a renewable energy standard that some advocates worried was too weak to send a strong signal, while detractors continued to worry about impacts on energy prices.

We believe that a strong renewable energy target can be established that still offers very significant responsiveness to the differences in regional electricity markets, and meaningful improvements in consumer choice.

The Commonwealth of Pennsylvania established an Alternative Energy Portfolio Standard in place of a traditional Renewable Energy Standard, to respond to their unique history as a coal and oil producing state and their current position as enjoying rich native renewable resources. By establishing separate tiers of energy resources within their standard, they set a requirement that allowed the state to develop one of the strongest and most affordable

renewable energy markets in the country, while also increasing the development of a range of other low carbon and environmentally preferable fossil fuel resources, improved energy efficiency, more predictable solar energy markets, and collateral benefits in increased manufacturing jobs in clean energy industries.

A national Clean Energy Investment Standard would offer significantly improved certainty to regional clean energy markets on a range of fronts. Such a market creating policy could include assurances that a solid foundation of clean energy resources would be developed nationally.

A national Clean Energy Investment Standard could embrace a broader range of technology to provide regional flexibility, in exchange for setting a higher overall national target. Such a policy could for example, set a goal of 25 percent clean energy by 2025, with an interim goal of 20 percent clean energy by 2020. This 25 percent target might be met by a base of 15 percent renewable energy, with an additional 5 percent commitment from energy efficiency. The remaining 5 percent might then be designated for other regionally appropriate clean energy resources on a state-by-state basis by the Public Utility Commission, including new nuclear power, coal plants with carbon capture, or other clean energy resources like woody biomass, co-generation, or incremental hydroelectric. Further, in states where significant difficulties meeting renewable goals cost effectively could be demonstrated this regional target might be raised to 10%. In such a way, it should be possible to ensure a strong national target for the development of future renewables and efficiency markets, even while guaranteeing that states retain autonomy and control of their market structure.

Additionally, for those states which will be striving to meet the Clean Energy Investment Standard by 2025, the CEIS standard will guide the investment decisions. For those several states that will achieve the CEIS goals in advance of 2025, the PUC, in consultation with the consumers, the affected utility and other stakeholders could develop a plan to maintain prudent investments in clean energy projects and energy efficiency.

The result of such a flexible and regionally differentiated but ambitious national Clean Energy Investment Standard would be that national certainty in the market would be achieved, while allowing those states that wished to proceed slowly to pursue a broader range of energy resources, without slowing the ambitions of states with abundant wind, solar or geothermal energy. Such a standard would provide a clear and predictable floor for clean energy developers and manufacturers while allowing each region of the country to chart the best path for its citizens.

B. Bring building energy efficiency and retrofit markets to scale so they can be treated as a "generation" resource

There are approximately 80-120 million residential buildings and 5 million commercial buildings in the U.S. , but despite the many energy efficiency retrofits programs

implemented by utilities, federal, state and local governmental entities, and the private sector, only a very small percentage of these buildings have been retrofitted. In addition to the financing for building efficiency programs described above, there are a series of regulatory steps that could be considered that would greatly facilitate achieving energy efficiency goals.

Treat energy efficiency as a generation resource: FERC should examine and provide guidance on market design, to promote the use of forward capacity markets to include cost effective energy efficiency and demand side management measures on an equal basis with traditional generation within utility planning for meeting load growth.

Update national building codes: Congress could mandate that industry recommend updated building codes and standards and improved energy efficiency codes and standards in building materials and appliances as well as in the construction industry within six months, and that states have thereafter six months in which to object or concur. All objections would be adjudicated by a new mediation group established by Congress. Within 18 months the new codes could go into effect. The guiding principle of such codes should be: mandate efficient investment in new building materials.

Establish a national energy efficiency information disclosure project: Improved consumer knowledge of the energy efficiency of buildings and real estate market transparency would strengthen real estate markets. Within one year an industry group commissioned by Congress should produce voluntary building labeling and reporting efforts.

Develop national quality assurance standards: Congress should require the building materials industry to promulgate agreed upon standards for measuring residential energy consumption, within one year.

C. Promote best practices in managing variable energy resources

Consumer access to information: Congress should require states to gather and publish standards for individual ownership of consumer utility data, privacy standards, setting new guidelines for personal user access, and protocols for individual consumers' ability to assign access to their utility and smart meter data to third party vendors of demand management and energy efficiency services. Such standards shall comply with methodology established by FERC through rulemaking under the APA.

Promote best practices in regional energy markets: Through rulemaking, FERC should establish methods for integration of variable electricity resources into wholesale markets and maximizing demand reduction as a wholesale energy resource. These methods should include creation of virtual balancing areas to permit the most efficient dispatch of resources and management of reserves over larger areas. Incentives could be provided for states that on a voluntary basis adopt best practices and streamline regulations to promote renewable energy and efficiency, by managing dispatch order and loading, and establishing guidelines for net metering, interconnection, and fair rate setting. FERC should also establish rules that guarantee access to utility poles and other

infrastructure to qualified entities to ensure greater competition in the market from innovative technologies.

FERC rules shall also oblige states to increase the geographic footprint of balancing areas will also reduce the variability of renewable resources. Incentives could be provided for states that on a voluntary basis adopt best practices and streamline regulations to promote renewable energy and efficiency, by managing dispatch order and loading, and establishing guidelines for net metering, interconnection, and fair rate setting.

FERC could establish rules that guarantee access to utility poles and other infrastructure to qualified entities to ensure greater competition in the market from innovative technologies will be critical.

D. Integrate transportation into clean energy infrastructure

Amend PURPA: Amend the Public Utility Regulatory Policies Act of 1978 (PURPA) to establish standards for electric utilities regarding electric drive vehicle infrastructure.

Develop electric drive vehicle and infrastructure standards: Directs each state regulatory authority (in the case of each electric utility for which it has ratemaking authority) and each utility (in the case of a non-regulated utility) to: (1) require that infrastructure deployed complies with federal standards and is interoperable with products of all manufacturers; (2) establish protocols and standards for integrating electric drive vehicles into an electrical distribution system; (3) provide for the ability of each vehicle to be identified individually and to be associated with its owner's electric utility account; and (4) review their determinations on time-based metering and communications.

Create national gas vehicle retrofit kits: Direct the Environmental Protection Agency (EPA) to simplify the certification process for natural gas vehicle retrofit kits, and to make certifications last for a period of at least seven years.

E. Setting standards for approval of renewable and energy efficiency projects chosen by regulated utilities

Regulated utilities have to meet renewable or clean energy standards in over 30 states and will have to meet the Clean Energy Investment Standard recommend in this outline if it is adopted. After a regulated utility chooses to invest in a new clean energy project or an energy efficiency project, it has to seek approval from its state regulatory commission. To clarify the approval process in light of a legally binding Clean Energy Investment Standard or other clean or renewable energy portfolio standard, the following measures should be considered.

Approving clean energy projects: A state utility commission cannot deny the recovery in retail rates of the cost of a renewable or clean energy resource unless the commission finds that alternative renewable or clean energy resources are available to the utility at a lower cost. The state utility commission shall adopt regulations to implement this regulation.

Approving Energy Efficiency Projects: FERC would establish a methodology to be implemented by state commissions that identifies relevant costs and benefits of energy efficiency projects and the requirements of any applicable renewable energy standard to determine whether an investment is prudent and whether charges to end users are just and reasonable."

Section Three: Creating Jobs by deploying competitive regional infrastructure for economic development

Revitalizing and reinvesting in the nation's electricity infrastructure to make it more energy efficient is essential for American industrial and economic competitiveness, for regional economic development, and our energy security. The lack of adequate infrastructure, or excessive fragmentation of regional markets, can significantly slow and even stop the development of a clean energy economy, while smart modern infrastructure reduces costs for business, customers, and state and local governments.

There are three critical areas of clean energy infrastructure that must be addressed in a comprehensive plan for clean energy deployment. These include: Investing in transmission lines required for large-scale generation of clean energy resources, upgrading distribution networks to operate as a smart grid that facilitates the flow of useful data as well as energy, and placement of a charging infrastructure for hybrid and electric vehicles to integrate transportation effectively into our existing electricity grid, as well as fueling infrastructure for alternative fuel vehicles.

The challenges and barriers to development of this infrastructure should be thoughtfully addressed and pursued within a national strategy. Infrastructure deployment will be facilitated through the financial and regulatory tools outlined earlier in these recommendations, but because it provides an essential foundation for the development of regional markets, it deserves special consideration. In establishing a national program of infrastructure modernization, the federal government should work closely in partnership with states, cities, and private developers, to build strong regional clean energy markets.

Unlike all other measures recommended in the outline, several of these measures require appropriations, but all such measures would lead to significant job creation and they would be implemented over a multi-year time frame. These measures would be paid for by privatizing nationally owned assets relevant the energy sector.

Comment [MSOffice5]: No clearer statement demonstrates the biased preference for an electrified America, notwithstanding the fact that natural gas is a clear winner based on comparative efficiency and emission measures. No public body should be called on to pick winners and losers between fuel options.

A. Create jobs by assisting states and communities with planning proposals

Facilitate planning across jurisdictions: In long range infrastructure planning, the federal government can play a key role in fostering the development of regional plans for utilizing local clean energy resources. Under FERC rules (including the rule proposed under the FERC notice of proposed rulemaking related to transmission and cost allocation) entities would submit plans to FERC that reflect the short-, medium- and long-term goals and implementation steps for increasing energy efficiency and promoting renewable energy, including plans for any new transmission capacity that would be needed to accommodate new renewable energy facilities. These plans would be submitted after consultation with utilities, ratepayer advocates, industrial users, merchant providers, project developers, and other relevant stakeholders. FERC would be given additional backstop siting authority to

site new transmission lines in any state that stem directly from a plan submitted pursuant to this requirement. Any federal strategy for clean energy deployment should prioritize a robust planning process across jurisdictions, with full and robust participation of state and local stakeholders and state Public Utility Commissions, and build a national strategy from this foundation of strong state planning efforts to maximize clean energy resources.

Work through the Energy Information Administration to create a clean electricity availability and consumption map and other data resource: This will facilitate planning and measure progress of clean energy deployment efforts.

Guarantee rural access: Rural communities should be guaranteed access to the benefits of the clean energy economy, linking smart grid deployment to broadband strategy, and engaging the Rural Utility Service, coops, and municipal and public power providers.

Facilitate clean energy deployment plans: Provide increased incentives to states that develop well integrated clean energy deployment plans.

B. Facilitate market structure innovations

An effective market structure can have a significant impact on the cost of energy generation, transmission and distribution and on the competitiveness of the energy industry. It is appropriate during a period of major transition in the energy industry to review market structures and to recommend changes where needed.

Reviewing market structure: In consultation with FERC, the FTC and state and local governments, the DOJ should be directed to issue recommendations within 6 months concerning appropriate horizontal and vertical market structure in the energy industry. After this task is completed, the DOJ should be directed to send its recommendations to all state authorities.

Create a window of time in which all the companies clearly have an anti-trust exemption to discuss alternative market structures: For a limited window of time, utilities could be granted a limited anti-trust exemption to collaborate in discussions of alternative market structures, in consultation with regulators and consumer advocates, with proposals for alterations in existing market structures to be published and submitted to the Attorney General for review.

Work with the states to require grid and power distribution transparency: Establish a framework of best practice recommendations for grid and power distribution transparency, to encourage the provision of retail and Distribution Services in a manner that promotes the development of clean energy and efficiency services in response to unique regional conditions.

C. Support energy efficiency and smart grid information Infrastructure

Develop federal standards for smart grid data management and interoperability: Build upon the National Institute of Standards and Technology initiative to develop smart grid standards to develop federal standards for smart grid data management, in partnership with regional market actors.

Provide federal funds to local agencies to develop and disseminate to the building trades a catalog of building energy efficiency measures and to support training in energy efficiency measures: These measures could apply to new and existing buildings, and support model local code provisions, and skills training and certification tests and measurement and verification efforts.

Create formulae for energy efficiency that account for geographic and climate disparities: Create a national energy efficiency strategy built on nested state efficiency and demand reduction plans tied to resources.

D. Support vehicle electrification and advanced manufacturing infrastructure

Establish innovation hubs and regional centers of excellence in manufacturing, commercializing and deploying clean energy: The federal government should support public and private partnerships to launch regional centers of excellence and specialize in commercializing and deploying local clean energy resources, through national labs, the Cooperative Extension service, and land grant universities. Centers would coordinate with state manufacturing offices, state economic development agencies and the Department of Commerce Manufacturing Extension Partnership. Investment in manufacturing conversion could be further facilitated using EIT loans.

Promote deployment of plug-in and other electric drive train vehicles: A national clean energy strategy should require the federal government, electric utilities and state regulators to develop plans to support electric drive train vehicles and heavy-duty electric drive vehicles, including deployment of the charging infrastructure or other infrastructure necessary to adequately support the use of electric drive vehicles, and provide for, as appropriate, the support needed to enable the competitive installation, operation, or provision of electric drive vehicle charging services. The federal government should require (1) a specified percentage of vehicles acquired for the federal fleet to be such vehicles; and (2) the Secretary of Energy (DOE) to provide grants and loans to local governments for the installation of recharging facilities for such vehicles. Further, states should establish appropriate protocols and standards for integrating electric drive vehicles into an electric distribution system smart grid systems and devices as described in title XIII of the Energy Independence and Security Act of 2007.

Permit cost recovery for the installation of electric charging infrastructure: Permit utilities to recover their costs if they install and operate electric charging infrastructure.

Comment [MSOffice6]: 2.The document should similarly call for the development of a national plan for promoting the use of NGV. Natural gas and electric vehicles should be encouraged to reduce petroleum reliance and reduce greenhouse gas emissions. See below for language supporting the adoption of a national NGV Plan.
“Promoting the deployment of natural gas vehicles and infrastructure for such vehicles:
A national clean energy strategy should require the federal government, natural gas utilities, and state regulators to develop plans to support natural gas powered vehicles, including the deployment of fueling infrastructure needed to support natural gas vehicles. The federal government should require: (1) that a specified percentage of vehicles acquired for federal agencies be fueled by natural gas, including light-, medium-and heavy-duty natural gas vehicles; (2) the Secretary of Energy (DOE) to provide grants and loans to local governments to facilitate their acquisition and use of natural gas vehicles, and to facilitate the installation of natural gas fueling infrastructure. The strategy shall develop innovative public-private partnerships for developing natural gas refueling infrastructure and to the extent practicable ensure that fueling infrastructure paid for with federal dollars is open to the public. The federal government through DOE and other agencies also shall assist natural gas providers in developing plans for how to best develop new infrastructure for natural gas fueling stations, including a review of current infrastructure for petroleum motor fuels, the location of major truck traffic routes, and transportation corridors, where fueling might be installed to accelerate the use of natural gas in medium and heavy duty trucks. The Department of Energy also shall work with industry to incentivize and support the development and manufacture of a reliable and economical home-refueling system(s) for natural gas vehicles.

Section 216 of Federal Power Act: Amend the Federal Power Act to revise requirements concerning the siting of interstate electric transmission facilities, including requiring the Federal Energy Regulatory Commission (FERC) to oversee planning for the development of a Clean Energy Superhighway. FERC issued a notice of proposed rulemaking in June 2010 that promises much progress towards this goal. Revise Section 216 of the Federal Power Act to empower FERC to designate national interest electric transmission corridors. Direct FERC to do so in response to transmission developer filings, rather than making designations *sua sponte*, and restore federal backstop siting power under Section 216 that was denied by the 4th Circuit.

Amend the Energy Policy Act of 2005: Expand the list of innovative technology projects that are eligible for loan guarantees to include low-carbon technology projects.

About the Coalition for Green Capital:

The Coalition for Green Capital (CGC) is a non-profit organization based out of Washington, DC. The CGC exists for the purpose of advocating tax and finance policies that support investment in energy efficiency and clean energy. We pursue such policies at the national, state and international level.

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Special thanks to CGC Fall 2010 Intern Devi Narasimhan



Version 1 needs to recognize the efficiency and environmental advantages of natural gas as compared to electricity. Consider the following:

Using full-fuel-cycle metrics to compare efficiencies, consistent with the National Academy of Science recommendation to measure energy consumption levels of greenhouse gas (GHG) emissions, see comparisons below: <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12670>

Efficiency of Electricity Delivered to Building, %

Source Energy	Extraction	Processing	Transportation	Conversion	Distribution	Total
Coal	98.0	98.6	99.0	32.5	93.8	29.2
Oil	96.3	93.8	98.8	32.0	93.8	26.8
Natural Gas	97.0	96.9	99.0	40.1	93.8	35.0
Nuclear	99.0	96.2	99.9	32.6	93.8	29.1
Hydro	100.0	100.0	100.0	85.0	93.8	79.7
Biomass	99.0	99.0	98.9	27.8	93.8	25.3
Wind	100.0	100.0	100.0	23.0	93.8	21.6
Solar	100.0	100.0	100.0	10.0	93.8	9.4
Geothermal	100.0	100.0	100.0	16.2	93.8	15.2
Other	100.0	100.0	100.0	12.8	93.8	12.0

Efficiency of Natural Gas, Fuel Oil, Propane Delivered to Building, %

Source Energy	Extraction	Processing	Transportation	Distribution	Total
Natural Gas	97.0	96.9	99.0	98.8	91.9
Heating Fuel Oil	94.9	89.1	99.7	99.6	84.0
Propane/LPG	94.6	93.6	99.2	99.2	87.1

Figure 3 US Average Full-Fuel-Cycle Energy Efficiency Factors for Energy Delivered to Buildings

Source: CMIC Source Energy and Emissions Analysis Tool (www.cmictools.com)

A full-fuel-cycle energy metric will allow evaluation of the impact of equipment and building energy use on overall energy use consistently and equitably. Site measurement methods—a calculation of the energy consumed by an appliance at the point of end-use in the building—do not properly or equitably account for the total energy consumed when more than one energy source is used in an appliance (such as a gas furnace) or when comparing the consumption of different fuels that can be used for the same application (such as water heating or combined heat and power). In addition, site measurement does not account for the energy lost and emissions created throughout the extraction, processing, transportation, conversion, and distribution of energy to the appliance in the home. On the other hand, full-fuel-cycle measurement of the energy consumption of appliances from the point of extraction to the point of use does account for primary energy source losses that occur (e.g., in natural gas production or electricity generation), as well as associated GHG emissions.