USCAP
United States
Climate Action
Partnership

A BLUEPRINT FOR LEGISLATIVE ACTION

Consensus Recommendations for
U.S. Climate Protection Legislation

January 2009

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PROLOGUE
OUR GOAL, OUR ROLE

In January 2007, we issued our *Call for Action* in which we joined together to call for "prompt enactment of national legislation in the United States to slow, stop and reverse the growth of greenhouse gas (GHG) emissions over the shortest time reasonably achievable." We are issuing this *Blueprint for Legislative Action* to reinforce that commitment and to provide decision makers in the Administration and Congress with a framework for legislation that can achieve this objective. It is intended as a guide for the development of legislation in the 111th Congress that can become law.

Our Blueprint is a balanced and integrated approach to key linked issues that must be addressed in any national climate legislation. This *Blueprint* is the consensus product of a diverse group of companies and non-governmental organizations. We understand that we do not include all stakeholders.

We also understand that it is for Congress to write legislation and that the issues are complex and the process dynamic. Accordingly, we want to be clear that this is not the only possible path forward and we stand ready to work with the Administration, Congress, and other stakeholders to develop environmentally protective, economically sustainable, and fair climate change legislation.

1 INTRODUCTION

Climate Change Legislation Can Benefit Our Economy and Energy Future

The United States faces an urgent need to transform our nation's economy, make the country more energy secure, and take meaningful action to slow, stop, and reverse GHG emissions to address climate change. The economic, energy, and global warming realities facing the nation are characterized by a detrimental dependence on foreign oil, economic instability, and a growing recognition that the impacts of a warming planet are being felt today.

To address these challenges successfully will require a fundamental shift in the way energy is produced, delivered, and consumed in the U.S. and around the globe. We need a new vision and policy direction to transition from the technologies and practices we relied upon in the 20th century to the technologies and practices America will need in the 21st century. We must:

— increase the overall energy efficiency of our economy;

— utilize responsibly our domestic supplies of coal, oil and natural gas;

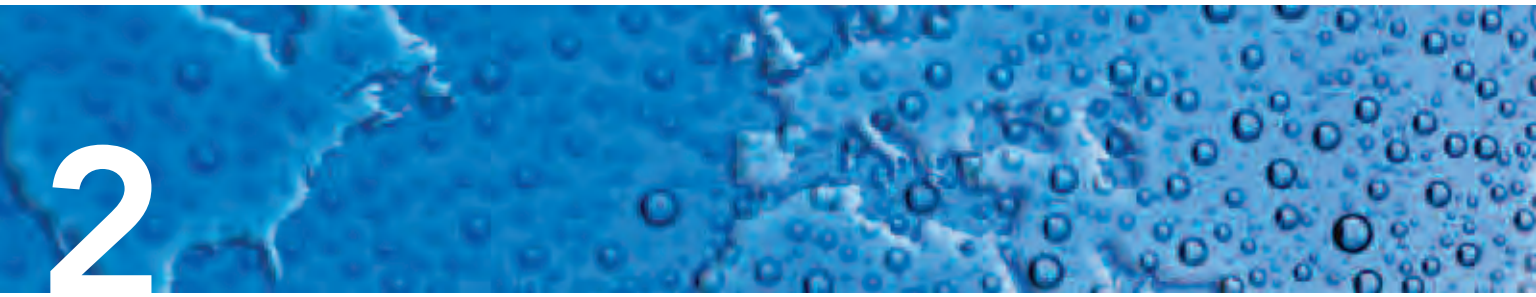
— develop and export the transportation technologies and fuels of the future; and

— ensure the nation has an adequate supply of electricity produced from low-carbon resources, including wind, solar, next generation nuclear technology, and coal with carbon capture and sequestration.

New and emerging technologies can put us on the right path, and the potential for other continued technology improvement is high. But to assure success, we need well-aligned national energy and climate policies that set out a new direction for the country. These policies must establish an orderly and predictable schedule of GHG reductions that will move the private sector to develop and deploy the new and advanced energy technologies of tomorrow. Thoughtful and comprehensive national energy and climate policy will help secure our economic prosperity and provide American businesses and the nation's workforce with the opportunity to innovate and succeed.

URGENT ACTION IS NEEDED

Scientific evidence supporting the need for urgent action to protect the climate has solidified since the release of USCAP's *Call for Action*. In November 2007, the Intergovernmental Panel on Climate Change stated: **"Warming of the climate is unequivocal, as is now evident from observations of increases in average air and ocean temperatures, widespread melting of snow and ice and rising global average sea levels."**



2 INTERNATIONAL PRINCIPLES

Climate change presents a global problem that requires global solutions. USCAP believes that international action is essential to meeting the climate challenge. U.S. leadership is essential for establishing an equitable and effective international policy framework for robust action by all major emitting countries. USCAP believes that adoption of mandatory U.S. climate policy is an essential precondition for a full and effective international framework.

The mechanisms that Congress establishes as part of U.S. climate legislation can play a crucial role in encouraging broad international action. However, U.S. action to implement mandatory measures and incentives for reducing GHG emissions should not be contingent on simultaneous action by other countries.

USCAP offers the following principles and recommendations regarding: 1) U.S. policy addressing international issues, including international linkage to a domestic cap-and-trade system, policies to encourage action, and policies to address competitiveness; and 2) the nature of a new or enhanced international climate policy framework, and the role of the United States in facilitating its development.

— ***As a step toward development of a comprehensive international framework, Congress should consider adopting provisions and criteria for linkage of the U.S. systems to other existing and emerging cap-and-trade systems.*** Linking emission trading systems globally would bring higher economic efficiency, greater scope for emission reductions, and broader political engagement. Criteria should address, but not be limited to: environmental integrity, cost considerations, timing, and credible accounting and enforcement.

— ***U.S. climate policy should create incentives for developing countries to limit their GHG emissions.*** Access to U.S. GHG markets can be a strong incentive for action by emerging economies, provided that any tradable emissions units brought into the U.S. system represent either allowances issued by other nations under their legally binding national emissions caps, or real emission reductions that meet criteria established by Congress. Congress should consider a mechanism that, while safeguarding the environmental integrity of the cap, would offer preferential access to U.S. GHG markets for countries moving swiftly to reduce emissions broadly across the bulk of their national economies, and would gradually restrict such access for countries failing to curb their emissions. U.S. climate policy should assist developing countries in emissions measurement and monitoring and in technology development and deployment.

— ***U.S. climate policy should be designed to safeguard environmental integrity, maintain competitiveness, and avoid carbon leakage.*** In the long term, these concerns are best met through multilateral commitments ensuring equitable effort by all major emitting countries. Any measures deemed necessary to address competitiveness issues should be consistent with World Trade Organization rules.

— ***Congress should call upon U.S. negotiators of bilateral and multilateral agreements to seek rational and consistent tax and accounting standards for trade in GHG emissions.***

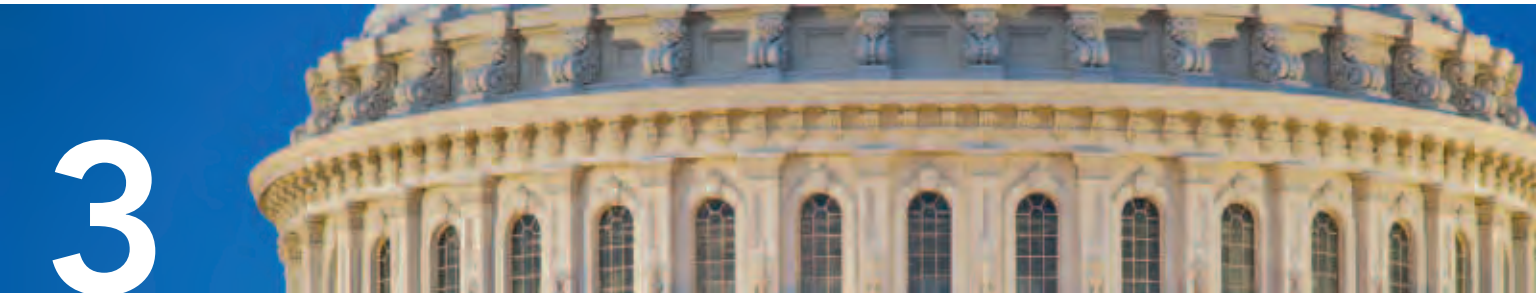
— ***Congress and the Administration should establish a U.S. climate policy that strengthens support for efforts by developing countries for the adaptation of human and natural systems to the impacts of climate change.*** As a first priority, we recommend that Congress and the Administration take measures to ensure that bilateral and multilateral development assistance works to strengthen resilience to climate risk, rather than contributing to climate vulnerability. In addition, as a basis for further action, USCAP recommends that Congress initiate an interagency review to assess adaptation needs in developing countries, recommend a strategy to address adaptation needs in developing countries in collaboration with other donor countries, and identify potential sources of funding for those efforts.

— ***USCAP recognizes that a critical complement to a mandatory domestic climate program is the development of a unified multilateral framework establishing fair, effective, and binding international commitments for all major emitting countries.*** Bilateral and regional agreements linking trading systems and other efforts can contribute to the development of, and complement, a stronger international framework. The final objective of U.S. policy should be the negotiation and ratification of binding multilateral agreements establishing a comprehensive framework for significant long-term reductions in global GHG emissions consistent with the objective of the UN Framework Convention on Climate Change.

— ***A fair and effective global effort requires a flexible framework recognizing the strong diversity among major economies.*** Commitments are needed from all major economies and should be measurable, reportable, verifiable, and nationally appropriate. To maximize environmental effectiveness and minimize costs, the long-term aim should be binding commitments to cap and reduce emissions, including through participation in global emissions trading. In the nearer term, the international framework should establish binding absolute economy-wide reduction targets for developed countries while allowing developing countries a range of binding policy commitments taking into account national capacities, circumstances, and policy approaches.

— ***Congress and the Administration should recognize the UN Framework Convention on Climate Change as the primary forum for building the international climate framework.*** Climate change requires action on many fronts and in multiple international venues, including trade, finance, and development. Initiatives such as the G8+ Gleneagles Dialogue, the Asia Pacific Partnership, and Asia-Pacific Economic Corporation, APEC, can contribute by promoting action and consensus. These efforts should not be seen as substitutes for the development of comprehensive binding agreements under the Framework Convention.

— ***USCAP recommends the development of measures and incentives, through both U.S. legislation and within a multilateral framework, that aim to reduce emissions from deforestation and land-use change.*** Forest sector emissions and land-use change, principally in the developing world, account for approximately 20 percent of global emissions. Efforts to reduce impacts from deforestation and land-use change can provide cost-effective emission reductions while protecting biodiversity and promoting sustainable development.



3 MAJOR MECHANISMS AND LINKAGES TO ACHIEVE OUR GOALS

A. Emission Reduction Targets and Offsets

Accumulating science shows that the impacts of global warming are occurring sooner than anticipated. If the risks of serious adverse impacts of GHG emissions are to be minimized, prompt and aggressive emission reductions in the developed world are necessary, along with similar reductions by major emitting countries in the developing world in the not too distant future. For this to be achieved, the United States must show leadership and act quickly to establish a mandatory, national economy-wide climate protection program that includes emission reduction targets for total U.S. emissions and for capped sectors that are:

— 97%-102% of 2005 levels by 2012;[1]
— 80%-86% of 2005 levels by 2020;
— 58% of 2005 levels by 2030; and
— 20% of 2005 levels by 2050.

Equally important, and as we stated in our *Call for Action*, it is imperative that the costs of the program are manageable. These costs will depend significantly upon the combination of emission reduction targets and the level of offsets that are permitted from emission reductions from uncapped sources in the United States and abroad and the effectiveness of other cost containment measures. USCAP believes the targets recommended above are achievable at manageable costs to the economy *provided that* the offsets and other cost containment measures we recommend in Section 4-B. are enacted, along with the other critically important policies and measures recommended elsewhere in this *Blueprint* including incentives for clean technology deployment and allocation of allowance value.

If offsets are not statutorily permitted in quantities such as those we have recommended, less stringent emission reduction targets would result in similar compliance costs. However, less stringent targets come at the environmental cost of fewer emission reductions and, therefore, greater likelihood of overshooting the atmospheric concentration target that leading climate scientists estimate is needed to protect against serious adverse impacts from GHG emissions. Other examples of policy choices that are strongly linked to the choice of targets include:

[1]The 2012 and 2020 ranges represent agreed upon boundaries within which individual USCAP members will advocate for their preferred targets.

— The size cutoff for large stationary sources that are included in scope of coverage for the cap and trade system (see Section 4-A);

— The limits that are placed on the size and the starting price for triggering the use of the Strategic Offset and Allowance Reserve Pool (see Section 4-B);

— The approach to allocating allowance value (see Section 4-C); and

— The approach to technology policy (see Sections 5–8).

B. Cap-and-Trade Plus Complementary Measures

Building on the principles and recommendations in our *Call for Action*, we believe our nation's climate protection goals can be met in the most cost effective manner through an economy-wide, market-driven approach that includes a cap-and-trade program as a core element. Since all U.S. emissions are not included in the cap, the legislation should include provisions to create incentives for emission reductions in uncapped sectors through qualified offsets from these sectors.

In addition, policies and measures that are complementary to a cap-and-trade program are needed to create incentives for rapid technology transformation and to ensure actual reductions in emissions occur in capped sectors where market barriers and imperfections may prevent the price signal from achieving significant reductions in emissions within those sectors. To the extent that market barriers and imperfections persist, it may be necessary to continue to use complementary sector-specific policies and measures as transitional tools. However, a goal of legislation should be to move, as soon as practicable, to a fully market-based system that relies on the price for carbon to achieve the recommended reductions.

C. Complementary Governmental Programs

In our *Call for Action*, we called for a national program that establishes a domestic market with a uniform price for carbon for all sectors and regions of the United States. To that end, the legislation should include provisions to promote, as soon as practicable, full integration of the U.S. trading program with other comparable trading systems in the developed world, and, eventually, to promote a single global carbon market. USCAP acknowledges the important role of state and local governments in addressing climate change but the thrust of our recommendations is to establish a stronger and more far reaching role for the federal government than heretofore has been the case. To that end, this *Blueprint* and other USCAP documents call for:

— a national GHG registry;

— economy-wide emission reduction targets;

— a national cap-and-trade program that results in a unified domestic market with a single price for carbon;

— cost containment measures to protect the nation's economy during the transition to a low-carbon economy;

— a federal technology research development and deployment program; and

— complementary measures for coal technology, transportation, and buildings and energy efficiency.

We believe local, state, regional and federal programs can and must be complementary. The aim is to achieve compatibility and avoid conflicts between local, state and federal programs that unnecessarily drive up compliance costs and make achieving our nation's environmental goals more difficult.

D. Periodic Assessment

Congress should require periodic assessments of emerging climate science, current and projected progress towards achieving the targets, the associated social and economic costs of achieving them, and the potential for unintended policy outcomes such as deleterious land use changes. Based on these assessments, agencies should be required to update their programs as necessary to promote achievement of the legislative goals as cost-effectively as possible. On the basis of these assessments, Congress should also periodically consider legislative revisions as necessary to assure that we will meet the 2050 goal and that we will do so as cost-effectively as possible and in a manner that does not stimulate increases in emissions outside of the United States.

4 CAP AND TRADE SYSTEM DESIGN

A. Scope of Coverage and Point of Regulation

In our *Call for Action*, we recommend the cap-and-trade program should cover as much of the economy's GHG emissions as is politically and administratively possible. We now recommend that the scope of coverage for the cap-and-trade program include fossil fuel and other covered GHG emissions from large stationary sources and the carbon content of fossil fuels used by remaining sources. The cap-and-trade program should not cover fossil energy used as feedstock material or in other ways that do not result in GHG emissions.

Large stationary sources should be defined as facilities that emit a covered GHG at a CO_2 equivalency rate of 25,000 metric tons or more per year for existing facilities and 10,000 metric tons or more per year for new facilities. This scope of coverage includes large stationary sources that combust coal, natural gas, petroleum and other fossil fuels or otherwise emit GHGs at a rate exceeding the annual coverage threshold. Reasonable thresholds for separate *de minimis* point sources of emissions within complex facilities should be established to avoid creating an unreasonable regulatory burden.

In the case of GHG emissions from the transportation sector, the vast majority of transportation emissions result from fuel consumed in vehicles owned or operated by transportation end-users, including individual consumers. However, requiring individual end users to be directly responsible for submitting allowances is administratively infeasible. Therefore, USCAP recommends transportation fuel providers be tasked with submitting allowances sufficient to cover the fossil-based CO_2 emitted from the use of transportation fuels by consumers and other end users.

This approach serves as a feasible and less costly proxy for regulating the emissions than having consumers and other end users serve as the point of regulation. As such, transportation fuel providers are providing a critically important accounting function. The point of regulation for this accounting function should be the refinery gate and refined product importers. It is also important that Congress understand and establish policies to ensure carbon-based price signals are transparent to transportation fuel consumers and other end users, thereby encouraging them to make informed GHG-reduction choices. In Section 7 of this *Blueprint*, we make further recommendations regarding complementary measures to address emissions from the transportation sector.

Emissions from the use of natural gas by residential and small commercial end users can be covered, for example, by regulating the utilities that distribute natural gas, often referred to as local distribution companies (LDCs). LDCs have an obligation under state law to procure and deliver natural gas to their customers. Placing LDCs under the cap, or, more precisely, making them the point of regulation for natural gas emissions for their customers who are not otherwise covered (i.e., residential and commercial customers) would require them to purchase allowances to cover those customers' emissions, and absent a federal mandate LDCs would only be able to recover those costs that are permitted by their state regulatory commissions.

Given these unique circumstances, Congress must exercise its full authority over interstate commerce and require as a matter of law that these costs be passed through to their customers. Congress must also provide allowances to these LDCs to mitigate these costs and advance demand reduction activities. Of equal importance, provisions

must be included to prevent duplicative coverage of emissions, as could occur when large stationary sources of emissions purchase natural gas from LDCs.

In addition, given that the primary way reductions will occur in this sector is through energy efficiency improvements and demand management in end use equipment, appliances, and buildings, Section 8 of this *Blueprint* makes further recommendations for policies that will need to be included in the legislation regarding complementary measures to address GHG emissions from, among other activities, residential and commercial natural gas use.

B. Offsets and Other Cost Containment Measures

Ensuring a smooth and orderly transition to a low-carbon economy is imperative. A comprehensive policy must include measures that contain costs while ensuring necessary investment in new technologies and actual emissions reductions—serving to protect both individual entities and the economy from unanticipated challenges. USCAP believes the most powerful cost containment measure is a robust cap-and-trade program. Complementary policies to promote energy efficiency such as those we have recommended elsewhere in this *Blueprint*, will reduce demand for electricity, natural gas and transportation fuels, thereby reducing demand for and the price of allowances.

We recognize, however, that other measures will be needed, such as the sufficient use of offsets, banking of allowances, and protections that ensure allowance prices are not too volatile or excessively high for sustained periods of time.

Cost containment measures should be designed to:

— protect the economy while allowing a long-term price signal that is sufficient to stimulate the development and deployment of new technologies;

— drive investments in cost-effective energy efficiency;

— maintain the integrity of the overall emissions budget established by the cap for each period; and

— achieve reductions in greenhouse gases.

Achieving these policy objectives will require a combination of tools, some of which should be phased out over time as the carbon market matures.

AVOIDING EXTREME PRICE VOLATILITY IN THE SHORT-TERM: To reduce risk from extreme short-term price volatility USCAP recommends that Congress authorize the following measures that are aimed at increasing compliance flexibility for regulated entities:

— ample amounts of offsets to be used for compliance purposes (as described below);

— unlimited banking of offsets and allowances for firms that have compliance obligations, with appropriate restrictions that may be needed for firms that do not have compliance obligations aimed at preventing market manipulation; and

— effective multi-year compliance periods.

ENSURING SUFFICIENT INVESTMENT IN TECHNOLOGY TRANSFORMATION: Price expectations help drive technology innovation and deployment. Therefore, cost containment measures should permit allowance price signals to become stronger over time. Further, Congress should direct a reserve price for the auction of allowances to be set at a level that helps to avoid prices that are too low to encourage long-term capital investments in low- and no-carbon technologies.

We believe the price that could accomplish this policy objective is approximately $10 per ton at the outset of the program. This price could escalate over time at a rate greater than inflation and then flatten out around 2025, provided that the price level and overall need for this mechanism is reviewed over time as the carbon market matures and new technology is deployed. This review should determine whether the minimum starting price for auctions should be adjusted, stay the same, or be phased out.

Like all cost containment provisions, the auction reserve price should be designed and implemented in a manner that prevents market manipulation. Elsewhere in this *Blueprint* we recommend additional incentives and other complementary measures that are critically needed to

spur necessary investments in energy efficiency and other critical low- and zero-emission technologies.

ENSURING A SMOOTH TRANSITION AND CONTAINING COSTS TO THE ECONOMY:

To ensure a smooth transition to an economically responsible and environmentally sustainable energy future, Congress must authorize a combination of provisions including:

— ***Emission Offset Quality:*** In our *Call for Action*, we recommend regulated entities be permitted to meet part of their compliance obligations through the purchase of verified offsets created by activities that sequester or reduce emissions from domestic sources that are not subject to the cap, and GHG emission reduction or sequestration projects outside the United States. In this *Blueprint*, we now recommend:

- Criteria must be established to ensure all offsets are environmentally additional, verifiable, permanent, measurable, and enforceable. The U.S. Environmental Protection Agency (EPA) should be directed to establish an offset program using a standards-based approach within 18 months of enactment. Under a standards-based approach, an EPA rule should identify specific categories of offsets that are eligible to qualify, along with clear procedures to achieve certification, and clear guidance to offset providers about how they can meet the standards. The eligible categories of offsets should be added to or modified over time based on experience, and standards should be periodically updated to ensure environmental additionality.

- In the case of international offsets, in addition to meeting the criteria described above, EPA should be directed to establish a transparent process for evaluating and approving international offsets. In so doing, EPA should enable international offsets that meet the quality criteria described above to be approved during the early years of the program, with a schedule to assure that over time international offsets result in incremental reductions beyond a nationally appropriate country or sector-specific emission reduction commitment that covers a suitable share of a country's emissions, consistent with the global goal of avoiding dangerous climate change. Congress should consider specifying a date or dates by which eligibility for international offsets should be contingent upon a host country's acceptance of such an emissions reduction commitment. Such schedule should be structured to encourage developing countries to move as rapidly as possible to curb their emissions, while ensuring that the overall quantities of offsets and international allowances are adequate for cost containment purposes as detailed in this *Blueprint*.

— ***Emission Offset Limits and Use:*** Economic modeling and experience in other markets indicates that less restrictive limits on the use of offsets for compliance will tend to result in lower allowance prices, while more stringent emission targets tend to result in higher allowance prices. Since USCAP is recommending a stringent emission target, we also recommend generous limits on the use of offsets to help moderate compliance costs, especially during the period when low carbon technologies are still achieving the economies of scale and commercial maturity that many currently lack.

To help achieve this objective, USCAP recommends the following ongoing approach to managing the actual amount of offsets allowed for compliance use over time:

- Congress should set an overall upper level limit on the use of offsets for compliance in any year of 1.5 billion metric tons domestic and 1.5 billion metric tons international offsets.

- Congress should establish a Carbon Market Board (CMB) and give it the authority to set annual limits on the level of domestic and international offsets within the range of 2-3 billion metric tons total, consistent with the upper limits specified above and the provisions described below.

- Congress should specify that the initial annual limit on offsets will be 2 billion metric tons. CMB should have the authority to increase the annual limit to avoid undue economic harm from excessively high allowance prices (e.g., increases in the price of natural gas due to fuel switching) and encourage technology transformation, including the development of carbon capture and storage.

In exercising this authority, CMB should take into account the number of banked offsets in the private sector, the degree to which the criteria for offset quality described above have been effectively implemented by EPA, and the size of the strategic reserve pool described below.

- The annual limits on offsets should be implemented in a manner that ensures easy and efficient access to offsets by all covered firms while providing flexibility and limiting the potential for speculation by, for example, using the ratio of a given year's offset limit to the cap on emissions in that year to define each covered firm's limit on the use of offsets for compliance purposes.

— ***Strategic Offset & Allowance Reserve Pool:*** Even with ample offsets, there will still be the potential for extreme volatility and spikes in allowances prices. To limit such price spikes and volatility, especially in the early years of the program, USCAP recommends the establishment of a strategic reserve pool that includes: a) program-based and other governmentally certified offsets, including but not limited to forest carbon tons derived from offsets due to avoided tropical deforestation; and b) allowances borrowed from future compliance periods at a system-wide level (as distinguished from a firm level).

Offsets and/or allowances in the strategic reserve pool would be released into the market when allowance prices reach a specific threshold price. The reserve pool auction threshold price should be set at a level that prevents undue economic harm from excessively high allowance prices (e.g., increases in the price of natural gas due to fuel switching) and encourages technology transformation, including the development of carbon capture and storage.

Offsets released into the market from the reserve pool may be used without limitation and shall be in addition to the offset use limit recommended above. In order to achieve these objectives, the strategic reserve pool will need to contain a very large number of offsets and the CMB would need to have the authority to release them into the market on an as-needed basis. Thus, it is crucial that the reserve pool be very large and that the U.S. Government be empowered to fill it and replenish it as needed. We further recommend:

- The offset component of the reserve pool may include, but would not be limited to, forest carbon tons derived from avoided tropical deforestation generated through bilateral agreements between the U.S. Government and other nations, or bilateral agreements approved by both governments, as well as sub-national forest carbon activities, with the consent of the national governments of participating countries. Including international forest-related offsets in the reserve pool should not preclude such offsets from also being eligible and available to firms as international offsets in the overall cap-and-trade program. USCAP recommends that any bilateral agreements be developed and implemented in concert with international mechanisms to reduce emissions from deforestation and degradation. Forest carbon tons offsets must be real, additional and verifiable and enforceable with adequate monitoring and, as applicable, discounting and/or an insurance program. Recognizing the potential for emissions leakage to other forested nations, the U.S. Government must establish mechanisms for reviewing and accounting for such leakage in the offset component of the reserve pool.

- Congress should direct EPA to establish a program to certify forest carbon tons, using the criteria described above. U.S. Government certified and registered forest carbon tons may be held or traded by private entities at any time, and may be used for compliance purposes, without limitation, whenever the CMB-established threshold price for offset release from the strategic reserve has been reached.

- The allowance component of the reserve pool would utilize a limited number of allowances borrowed from future compliance periods but the CMB would only be authorized to use this mechanism as a measure of last resort if the reserve pool temporarily does not contain sufficient offsets to meet the cost containment need. Congress should specify limits on the total amount of

allowances to be borrowed from future compliance periods that can be utilized for this purpose, as well as limits on sales of allowances from the reserve pool on an annual or several-year period.

- Congress should charge the CMB with the responsibility to establish and update the reserve pool auction threshold price, determine the number of offsets to include in the reserve pool, and determine how many offsets and allowances need to be sold at or above the threshold price.
- To limit speculative purchases from the reserve pool and allow an increasingly strong price signal, the CMB should increase the threshold price at a rate that moderately exceeds the time value of money. The CMB should be authorized to adjust the reserve pool auction threshold price and its rate of increase as needed to prevent undue economic harm and to encourage technology transformation.
- Finally, the system used to release offsets and allowance reserves into the market should be transparent and predictable, and designed in a manner that minimizes interference with normal market processes and prevents manipulation of the allowance price.

C. Allocation of Allowance Value

In the first decades of the program, priority must be given to directing the value of emission allowances created through the implementation of a cap-and-trade system to:

— transform our economy;

— modernize our nation's energy infrastructure;

— smooth the transition for consumers to a low-carbon economy; and

— adapt to the impacts of global warming.

It is critical that the economic value of emission allowances be directed to achieve these and other objectives, including buffering the economic impacts on energy consumers and businesses, without undermining their incentives to reduce emissions. USCAP recommends that a significant portion of free allowances should be initially distributed to capped entities and economic sectors particularly disadvantaged by the secondary price effects of a cap, and that the free distribution of allowances should be phased out over time.

OBJECTIVES OF ALLOWANCE VALUE DISTRIBUTION: USCAP believes that the distribution of allowance value should achieve the following overarching objectives:

— ***Facilitating the Transition for Consumers and Businesses:*** Enable the smooth transition to a low-carbon economy by mitigating the financial impacts of climate policy on consumers, businesses and the overall economy. A judicious combination of allocating allowances and targeting of auction revenues can reduce the direct cost impact of climate policy while accelerating the deployment of energy efficiency and other cost-reducing technologies. It is anticipated that the percentage value required by consumers and businesses will decrease over time.

— ***Transforming Technology and the Nation's Workforce to Support a New Energy Economy:*** Provide capital to facilitate timely investment, development, demonstration and deployment of new (not yet commercially mature) low- and zero-GHG-emitting technologies. This should be done in a manner that creates economic opportunity for the nation's businesses and workforce and promotes energy security (see Section 5 of this *Blueprint*). USCAP recommends use of allowance value, directly or indirectly, to facilitate the rapid, early deployment of low- and no-carbon technologies, given the need for substantial progress on technology transformation. We also recommend use of additional allowance value specifically for technology research and development and for workforce training and transitional support.

— ***Adapting to the Challenge:*** There is a need to address both human and ecological needs for adaptation to unavoidable climate change by enhancing resilience and response to climate change impacts for affected communities (e.g., impacts on public health, water resources, and infrastructure) and fish and wildlife habitats, at the federal, state, tribal and local levels.

We should also promote international engagement and cooperation in addressing both community- and ecosystem-related climate change adaptation needs.

PRINCIPLES OF EFFICIENT AND EFFECTIVE ALLOCATION: While meeting these objectives, the direct allocation of allowances and the uses of auction revenues should be tailored to:

— Ensure the availability of a secure, adequate, affordable and reliable energy supply.

— Strengthen the U.S. economy by investing in its infrastructure and by returning a portion of the allowance value directly to households.

— Avoid imparting undue initial economic gain or loss to covered entities.

— Encourage necessary investment, purchasing and behavioral changes by business, energy consumers, land users and government entities.

— Reduce overall energy costs for residential, commercial and industrial consumers of energy by promoting end-use energy efficiency and demand management in all sectors.

— Ensure that United States businesses are not put at an undue competitive disadvantage in the global marketplace as a result of climate policy and discourage companies from moving operations off shore due to the impact of climate change legislation. Such actions could undermine the environmental effectiveness of the policy and increase unemployment in the U.S.

— Train the workforce needed to facilitate a wide-scale transformation to low-carbon technologies and provide opportunities for all Americans in the new energy economy.

— Enable the U.S. to support international cooperation and actions to reduce emissions by key developing countries through technology transfer, avoided deforestation and adaptation assistance.

— Recognize voluntary actions taken to reduce GHG emissions prior to implementation of a climate policy.

— Further the technology transformation to low and zero-emitting technologies.

— Protect Americans, and the natural systems we all depend upon, from the impacts of global warming.

— Minimize administrative costs and complexity, and maximize the value serving the above purposes by basing the distribution of allowance value on objective and transparent criteria and relying on these criteria in any future evaluation of the system's effectiveness.

CRITERIA GOVERNING FAIR AND EQUITABLE ALLOCATION: Emission allowances in an economy-wide cap-and-trade system will represent trillions of dollars in value over the life of the program. As such, it is critical for public acceptance of the policy that decisions regarding the distribution and use of this value are taken in an unbiased and transparent manner. The criteria for determining allocation should be applied in a comparable manner in different sectors, including for buffering consumer exposure to allowance prices in various sectors.

The goal is to avoid excessive transfer of allowance value from one sector to another while still taking full advantage of the primary purpose of a cap-and-trade system for resources to flow to least-cost solutions. Furthermore, the criteria should be applied fairly to all impacted parties within a given sector or group. USCAP recommends that the following factors be taken into account in determining the fair and equitable proportion of allowance value that should be distributed to the following entities and purposes:

END-USE ENERGY CONSUMERS (e.g., residential/commercial/industrial electricity, natural gas, and transportation fuels consumers)

The purpose of directing allowance value to end-use energy consumers is to avoid disruptive price shocks that could accompany the initial phase of implementing

the climate protection legislation described in this document. USCAP recognizes that energy consumers are not equally exposed to price impacts and therefore recommends that the distribution of allowance value, either directly or indirectly, to end-use energy consumers be based on the relative impact of energy prices and price increases on household and commercial/industrial consumer budgets.

— ***Electricity and Natural Gas Consumers:*** Because cost-of-service Local Distribution Companies (LDCs) are regulated, unlike other impacted sectors they will be required to pass through the entire value of allocated allowances to their end-use consumers. This will directly facilitate the key objective articulated earlier for any allocation—facilitating the transition for consumers and businesses as consumers of electricity. Consequently, USCAP recommends allocating a significant portion (e.g., 40%) of emission allowance value directly to these entities specifically to dampen the price impact of climate policy on electricity and small natural gas customers, particularly in the early years of the emission constraint.

  The magnitude of allowance value allocated to LDCs should reflect, but not exceed, the share of capped emissions attributed to the consumers served by the LDCs, and then be phased-out. Consumers would realize this value through some combination of rate adjustment and demand reduction through programs designed to improve energy efficiency and promote zero- or low-emitting energy technologies.

— ***Transportation Fuel Consumers:*** USCAP recommends the judicious use of allowance value to ensure that consumers' transportation fuel impacts from allowance prices are generally proportionate to their electricity and natural gas impacts. As with the power sector, allowance value could be applied both to demand management, e.g., providing vouchers or subsidies to consumer purchase of high efficiency and electric vehicles, public transportation and other means to reduce transportation fuel consumption, and to direct cost mitigation, e.g., direct rebates to low-income end-use consumers or offsetting existing consumer taxes on transportation fuels.

  Transportation fuel consumers will see a price signal from both inclusion in an economy cap-and-trade program and implementation of complementary fuel standards. Congress should establish policies that provide transparent communication to fuel consumers so they understand carbon-based price signals. Moreover, policymakers should avoid taking actions that interfere with the inclusion of the price of carbon in transportation fuels.

Adequate oversight and accountability provisions will need to be implemented to ensure that all allowance value dedicated to end-use energy consumers serve its intended purpose. Finally, allowance value for end-use energy consumer protection should be reduced or phased out entirely over the appropriate time period.

ENERGY INTENSIVE INDUSTRIES WITH TRADE-EXPOSED COMMODITY PRODUCTS

Manufacturers and industries that deal with certain commodity products that are both energy-intensive and trade-exposed (which may include, but not be limited to, chemicals, oil refining, aluminum and other non-ferrous metals, iron and steel, cement, non-fuel minerals, pulp and paper, glass, ceramics, and rubber) will be particularly challenged by U.S. climate policy if they face competition from countries that have not committed to an internationally recognized GHG-emission-reduction path. In such cases, there is risk of "leakage," by which we mean the shifting of production and GHG emissions from the U.S. to these other countries.

To remedy this situation, USCAP recommends that an adequate amount of allowance value be provided to U.S. manufacturers facing such competition (determined by objective criteria). These allocations could, for example, be based on net incremental costs (e.g., direct compliance costs, and direct and embedded allowance costs such as in energy pricing) due to climate policy borne by the affected facilities, to the extent these costs can be reasonably estimated and updated with respect to continued economic activity. USCAP recommends that these allocations be tied to any GHG-related competitive imbalance and reduced or eliminated when the GHG-related competitive imbalance is reduced or disappears.

COMPETITIVE POWER GENERATORS AND OTHER NON-UTILITY LARGE STATIONARY SOURCES
These emitters may face significant compliance costs during a period in which there are no practical ways to capture CO_2 or replace otherwise valuable assets with low-emitting technology. As with energy intensive manufacturers, USCAP recommends that these entities initially receive an allocation of allowances based on their net incremental costs that can clearly be attributed to climate policy.

For competitive power generators, specifically, this allocation should initially be sufficient to cover the portion of their compliance costs that they cannot readily pass through to customers in higher prices. Climate legislation should establish a transition to a full auction for these allowances, based on a reasonable schedule for the expected broad deployment of low- and no carbon stationary technologies. Under this schedule, the allocations to large stationary sources would phase out as it becomes practicable to deploy these new technologies. This approach should avoid imparting undue economic gain or harm to large stationary sources, while facilitating and providing strong incentives for their owners' timely investment in low carbon alternatives.

For both energy intensive manufacturers and large stationary sources, USCAP recommends the following principles guide the distribution of allowance value:

— Allowance value distribution over time should avoid imparting either undue economic gain or loss, while contributing to incentives for such entities to make the major investments in new, low-carbon technology and efficiency gains necessary to transform the economy.

— The underlying basis, in principle, for allowance value allocation to these entities ought to be the net incremental costs that can clearly be attributed to climate policy.

— Estimates of net incremental costs should be determined in a reasonable, objective and transparent manner suited to each industry sector or sectors.

— A variety of factors will influence net incremental costs (and, for energy intensive manufacturers, their eligibility for allocations). These factors include:

  • energy intensity and relative GHG intensity;

  • exposure to international competition from countries that have not committed to an internationally recognized GHG emission reduction path;

  • the extent to which market, contractual or regulatory regimes allow the cost of compliance to be passed through to customers; and

  • the elasticity of demand and supply for energy-intensive products.

LOW-INCOME CONSUMERS, WORKER TRANSITION AND TRAINING Impacts of a climate program could fall most heavily on those least able to afford it unless these costs are mitigated. Allocations to LDCs on behalf of their customers will help to address this need, but will not fully address other costs such as increases in transportation costs or indirect costs embedded in other essentials, such as food and clothing. These impacts are best addressed by direct rebates to low-income consumers. Rebates to low-income consumers should be based on the relative impact of energy prices and price increases on their household budgets.

Sufficient allowance value should be directed to worker transition and training to provide opportunities for all Americans to participate in and take advantage of the transition to a new energy economy.

TECHNOLOGY SUPPORT Advancing technology research, development, demonstration and deployment, and promoting technology transformation and avoided deforestation are critical needs that will not be adequately spurred by the cap alone. There are recommendations in other sections of this *Blueprint* regarding the most appropriate methods for distributing allowance value to support these needs. They should receive sufficient allowance value so that these

investments, combined with the price signal from the cap are sufficient to drive key technologies to commercial viability.

There is a need to address costs associated with meeting complementary measures such as increased vehicle performance standards, renewable fuel and energy efficiency standards, without penalizing firms that have already made substantial investments in efficiency and low-carbon technologies. The use of complementary measures to force emissions reductions in some sectors allows capped sectors not subject to those measures to emit more, lowering the market price of carbon while leaving the overall cap unchanged. The overall effect may be to shift costs on to entities subject to the complementary measures and their customers.

ADAPTING TO THE CHALLENGE (e.g., resources needed to help vulnerable people and ecosystems at home and abroad adapt to the impacts of climate change)

— A federal climate bill should include a national strategy, based on the best available science, to empower natural resources managers at the national, state, local and tribal levels to identify, prioritize and protect ecosystems at risk from climate change. The investment in natural resources must be dedicated (i.e., multi-year funding that is not subject to annual appropriations), so that resource and wildlife managers can plan ahead in their adaptation projects knowing funding is secure and to ensure funding goes exclusively to climate change-related projects.

— Sufficient allowance value should also go to reducing the vulnerability in public health, water resources, infrastructure, and other key sectors. Attention should be paid to the adaptation needs of the communities most vulnerable to climate change impacts. Where possible, priority should be given to approaches that protect, utilize and enhance ecosystems and the services they provide to help human and natural communities adapt to impacts of climate change.

— Consistent with our recommendations regarding international principles in Section 2, a sufficient share of allowance value should be dedicated to promote international engagement and cooperation through bilateral and multilateral channels to help developing countries in addressing both community and ecological needs to adapt to unavoidable climate change.

As technology implementation, adaptation, and economic transitions occur, the emphasis and the proportionate share of funding to any category should shift. An allowance value framework should ensure that for any given period, allowance value is directed to categories as appropriate to achieve the long-term objectives of the climate policy.

The goal is to have free private sector allocations phase-out as low-carbon technologies become the investment alternative. While it may be preferable to establish a clear and reasonable period for this transition in legislation, it may be necessary to extend or shorten that period depending upon the timing of the commercial viability of low-carbon technologies.

D. Credit for Early Action

Providing credit for early action is an important tool. With the free allocation of allowances there will be competitive imbalances for early actors. Certain approaches could create disadvantages for those actors who took or plan to take early actions to reduce emissions in comparison to those actors who did not or do not plan to take early action. Therefore, if these conditions exist, USCAP recommends:

— The federal climate protection program should recognize, encourage, and provide credit for real and verifiable reductions of direct or indirect GHG emissions resulting from actions taken by entities at domestic facilities prior to the enactment of federal legislation, including actions to comply with state and regional GHG cap-and-trade programs.

— Credit for early action should be awarded from within a set-aside of allowances created specifically for the purpose of rewarding early action. Congress should ensure that there is an adequate set aside of allowances under the cap for crediting real and verifiable early action reductions.

— Congress should direct U.S. EPA to establish by rule, as soon as possible, criteria and procedures for awarding credit for early action. These procedures should include options for receiving credit for early actions through: a) a project-based approach, or b) an entity-wide approach.

— Under any approach, the applicant should be required to provide evidence adequate to demonstrate the reductions are real and verifiable and are voluntarily undertaken as part of a GHG reduction or energy efficiency effort. Awarding credit for early action on the basis of achieving emission reductions below a sector-specific emissions benchmark established by rule may be one way to address the criteria of additionality. Financial additionality (i.e., investments made beyond standard return on investment practices) is not an appropriate criterion for awarding credit for early action.

— U.S. EPA should be directed to provide credit for early actions that are taken both retrospectively, from a specified date—such as no earlier than 1995—and prospectively from the date of enactment until such time as the mandatory program becomes effective. Credit should be provided for the accrual of reductions that occur after the specified retrospective date as a result of the creditable early actions. In developing standards, EPA should take into account the need to make use of what will be a limited set-aside for this purpose with the need to provide meaningful awards for qualifying early actions.

— Documentation requirements may differ, given different project types and the time periods when reductions occurred. Registries need to be able to accommodate different types of early action reductions. However, the administrative requirements and complexity associated with providing evidence of early actions should not be excessively burdensome (i.e., it should not preclude entities that are truly deserving from receiving credit).

— U.S. EPA should be provided authority to make use of information submitted under existing voluntary reduction programs (e.g., EPA Climate Leaders and DOE 1605-b) to the extent such information meets robust criteria and procedures for approving applications for crediting early actions

5 TECHNOLOGY TRANSFORMATION

As we noted in the *Call for Action*, there are a number of technologies that are currently available that emit little or no GHGs, such as wind, solar, hydro and nuclear power, hybrid vehicles and numerous energy efficiency technologies. The cost-effective deployment of existing technologies to improve energy efficiency and reduce GHG emissions should be a priority, as it will yield emission reductions in the near-term while new technologies are developed.

A robust technology transformation program that results in substantial investment in new energy efficiency and advanced low-emission technologies is a critical complementary measure to a national strategy to cap

and reduce GHG emissions. USCAP recommends creation of such a technology transformation program with two objectives:

— Federal support for pre-commercial, early commercial and higher-risk phases of technology research and development for technologies that represent "breakthrough innovations" and significant improvements in the cost and effectiveness of known critical path technologies for avoiding, reducing or sequestering GHG emissions. Examples of these critical path technologies include:

  • carbon capture and storage (CCS) technologies for both power generation facilities and other industrial facilities;

  • energy storage technologies, including vehicle battery technologies as well as storage systems for intermittent energy sources;

  • emerging zero- or low-emitting and renewable energy or process technologies;

  • advanced technologies, materials and chemicals that facilitate greater energy efficiency and reduced energy losses in all sectors, including transportation, buildings, industry, and power generation; and

  • advanced low-carbon fuels and the vehicle and power generation technologies that enable their use and provide pathways to de-carbonization of the transport and electric generation sectors.

— Federal support to promote early demonstration and deployment of technologies with a known ability to avoid, reduce or sequester greenhouse gas emissions, but which are slow to achieve broad market acceptance due to high costs associated with "first-mover" adoption and implementation costs. Examples of technologies that would fit under this category include:

  • information technologies, such as "smart grid" utility infrastructure and energy management systems in buildings and vehicles, to increase the efficiency of electricity delivery and use;

  • carbon capture and storage technologies for power generation facilities and other industrial facilities; and

  • a variety of emerging low or zero-emission vehicle and electricity technologies.

To achieve both of these objectives, the program should provide necessary resources for key infrastructure needs that require a proactive government role in siting, cost recovery and investment, such as a CO_2-CCS pipeline network or a more robust electricity transmission network to bring zero- or low-emitting energy supplies, such as renewable power to market. Some technology innovation support, such as R&D funding as well as loan guarantees or other deployment incentives, should ideally start upon passage of the legislation (before trading begins) to create an immediate economic stimulus and to kick-start the innovation process.

USCAP believes there are a wide range of technologies that are essential if the United States is to achieve real, substantial, and lasting reductions in greenhouse gas emissions while growing the U.S. economy. The purpose of this technology program is to complement and enhance the pull for technological innovation under a market-based program, and should not be seen as substitute for a well-designed market-based program.

TECHNOLOGY TRANSFORMATION FUNDING:

Funding for the technology transformation program needs to be transparent, predictable, and accountable, and should be designed to help reduce long-term costs to the final consumer. The federal funding mechanism should not be subject to annual appropriations and should attempt to leverage private investment as much as possible. Additionally, Congress may choose to institute other measures, such as tax-exempt bonds, supplemental rate charges, loan guarantees, or other innovate financing mechanisms to provide additional funding.

Specific to the early demonstration and deployment, Congress and the appropriate agencies should also leverage private investment, through tax incentives, loan guarantees, and other means, to accelerate the demonstration and deployment of existing low-emission technologies or imminent technologies that can help

achieve critical reductions in the near term. USCAP believes that early demonstration and deployment of these low-emission technologies should be accelerated with predictable incentives that decline over time as experience grows. Similarly, incentives for low-GHG vehicle and fuel technologies would be phased down as a function of vehicle or fuel sales.

PERFORMANCE CRITERIA: USCAP recommends that Congress (or the appropriate implementing entity) establish performance criteria to select and prioritize funding of technologies. While specific criteria should be developed and administered by the implementing entity, the distribution of funding should address the following general criteria:

— ***Environmental Impact***—the technology, in the form that is deployed, should significantly and measurably reduce GHG emissions.

— ***Cost Effectiveness***—Funding should be awarded to emerging technologies with the greatest potential for widespread, low-cost deployment. Wherever possible, competitive processes should be used to achieve this goal.

— ***Rapid and Long-Term Technology Deployment***—Strike an appropriate balance between technology that can be deployed within a reasonable timeframe to provide GHG reductions as quickly as possible and technology that will achieve the transformation needed to drive significant long-term emissions reductions.

More information on technology transformation for specific low-emission technologies is included in the sections on complementary measures that follow.

6 COMPLEMENTARY MEASURES FOR COAL TECHNOLOGY

Over the longer-term, a cap-and-trade program with a decreasing cap and a market price for CO_2 will drive development and deployment of new lower emission coal technologies with carbon capture and storage (CCS). In the near-term (until 2025), however, CO_2 prices under a cap-and-trade program with effective cost containment measures may be too low to fully cover the higher initial costs of these technologies. This may increase the risk of delaying the deployment of CCS, which could significantly increase the long-term cost of a climate policy. It could also "lock-in" CO_2 emissions in the power sector over the long-term through development of new coal facilities without CCS.

To advance the goal of energy security in the mid- to long-term there should be a national strategy to repower, retrofit or replace existing high emitting coal plants with low emitting coal technologies to help meet current and future electricity demand in the United States. To increase commercial deployment of CCS while

preventing excessive run-up in natural gas prices due to fuel switching, USCAP recommends that Congress provide substantial financial incentives and needed regulatory certainty to facilitate and accelerate the early deployment of CCS technology.

Specifically, USCAP recommends Congress immediately:

— Direct all relevant federal agencies to develop a unified, comprehensive national strategy and by no later than January 1, 2010, promulgate all necessary rules to implement a strategy to address the key legal and regulatory barriers, as well as any other issues that, if not addressed proactively, could impede commercial-scale CCS deployment.

— Increase funding to complete, by no later than January 1, 2013, a national assessment of the capacity for geologic storage of CO_2.

— Increase funding for early grants to fully demonstrate the viability of CCS in commercial practice. This program should establish at least five (5) gigawatt (GW) of CCS-enabled coal fueled facilities operating with an emissions rate of no more than 1100 lbs/megawatthour (MWh) (or an equivalent rate for synthetic natural gas facilities), including at least one pulverized coal retrofit, by no later than 2015.

USCAP recommends that Congress provide funding for the programs listed above in calendar year 2009 through enactment of comprehensive climate protection legislation or through another appropriate vehicle. Whatever mechanism is used, USCAP recommends it be a dedicated and protected trust fund that is outside of the annual appropriations process to provide a stable source of funding.

To ensure new coal and other solid-fueled facilities are developed in a manner that speeds the deployment of CCS, USCAP recommends Congress include provisions in the comprehensive climate protection legislation that:

— Ensure no free allowances are provided for power generation that is associated with facilities that are initially permitted[2] after January 1, 2009.[3]

— Require all new coal and other solid fueled facilities emitting more than 10,000 tons of CO_2 per year that are initially permitted after January 1, 2015, to emit no more than 1100 lbs of CO_2 per MWh; and require all new coal and other solid fueled facilities above this size threshold that are initially permitted after January 1, 2020, to emit no more than 800 lbs of CO_2 per MWh—provided that USCAP's CCS direct cash payment funding recommendations (see below) are adopted and provided further that EPA and other agencies have promulgated, not later than January 1, 2012, final regulations necessary to enable the permitting of required CO_2 transport and permanent geologic storage facilities.

  In the event that either of the two conditions above are not met by January 1, 2012, the applicability of the initial performance standard shall be delayed until 3 years after both conditions have been met. EPA should review the emissions performance standard for new coal facilities at least every five years and determine whether it is economically and technologically feasible to achieve emissions rates that are less than 800 lbs of CO_2 per MWh.

— Require all new coal and other solid fueled facilities that emit more than 10,000 tons of CO_2 per year that are initially permitted after January 1, 2009 and before the applicability date of the initial performance standard for new units in the previous paragraph to be retrofitted such that they emit no more than 1100 lbs of CO_2 per MWh. Compliance with this retrofit requirement shall be required

[2] "Initially permitted" by a certain date, means the facility received its final Clean Air Act preconstruction approval by that date and commenced a continuous program of actual on-site construction within 18 months of such approval, even if the approved permit is amended or modified after that date.

[3] This recommendation is not intended to preclude allowance allocations to LDCs that reflect, but not exceed, the share of capped emissions attributed to the consumers served by the LDCs as set forth above in Section 4-C.

[4] Congress could provide authority to waive this retrofit requirement or to extend the retrofit compliance date, for certain units whose permit applications were determined to be administratively complete prior to January 1, 2007 and that, prior to January 1, 2009, were subject to a binding agreement that requires the owner/operator of the unit to significantly reduce or otherwise offset the unit's lifetime carbon dioxide emissions and where compelling circumstances associated with such units justify the need for such treatment.

within four years[4] after a total 2.5 GW of commercial scale power plants with CCS, capturing in the aggregate at least 5 million tons of CO_2 per year on an annualized basis, are in commercial operation in the United States; or a total of 5 GW of commercial scale power plants with CCS, capturing in the aggregate at least 10 million tons of CO_2 per year on an annualized basis, are in commercial operation world-wide (with power plants that capture at least 2 million tons of the world-wide total located in the United States.), whichever occurs sooner.

— Create a program for direct cash payments for sequestered CO_2 from coal and other fossil fuels in both power generation and certain industrial operations (e.g., cement or hydrogen production facilities). These payments will be made on a first-come-first-served basis for the first ten years of operation. The payments will be set using a sliding scale payment per ton of CO_2 sequestered, based on the level of capture achieved. Payment levels should be adequate to cover the incremental cost of CCS, which is currently estimated to be $90/ton for high levels of capture at the first few projects. In addition there would be a provision for a floor payment of up to $30 per-ton in years 11-20, depending on the level of capture achieved.

  The program should be divided into tranches of generating capacity, with an initial tranche of 3 GW at the highest payment level, with successive tranches receiving lower per-ton payments. Eligibility for payments should terminate for CCS projects commencing operation after on the order of 72 GW of CCS have been deployed in the United States. This will encourage early action to deploy CCS and such payments should be available for all CCS projects, whether they are new construction, re-powering, or a retrofit of existing facilities.

— Promote replacement of existing coal-fired generating units and early reductions of CO_2 emissions by adopting additional incentives to replace existing high-emitting units with low and zero-emitting resources with similar availability and dispatchabilty.

Elsewhere in this *Blueprint* we describe linkages between our recommendations for emission reduction targets and timetable, with cost containment, allocation of allowance value, and complementary measures for coal technology as well as other sectors. There are also linkages within the package of recommendations of complementary measures for coal technology. For example, support from all USCAP members for the performance standard for new coal facilities recommended above is contingent upon enactment of the direct cash payments as is also recommended above, as well as Congress providing the authority, deadlines, and funding to ensure promulgation of the rules that are needed to govern CCS deployment.

With these linkages in mind, as part of a national climate protection program, Congress should establish a dedicated, stable, long-term source of financing through the use of allowances or their value to ensure adequate funding is available to implement the recommended provisions that will maximize wide-spread deployment of CCS. USCAP believes all funds dedicated for these purposes should be subject to proper oversight, but be available for expenditure, without further appropriation or fiscal year limitation.

7 COMPLEMENTARY MEASURES FOR TRANSPORTATION

Achieving the USCAP economy-wide emission reduction targets and timetable will require a systematic approach that addresses interdependent policy objectives in the transportation sector including:

— lower carbon intensity fuels (including low-carbon sources of electricity);

— improvements in vehicle, engine and equipment fuel efficiency;

— innovations in vehicle propulsion systems to enable the use of low carbon fuels (including, but not limited to plug-in hybrids and electric vehicles);

— greater use of less-carbon-intensive forms of transportation;

— reductions in vehicle miles traveled (VMT);

— improvements in the efficiency of the transportation system;

— planning and infrastructure to support these changes; and

— consumers, operators, and other end users who are willing to adopt and use these new technologies, fuels and use less-carbon-intensive forms of transportation.

Implementing these actions is a shared responsibility of fuel providers, vehicle and equipment manufacturers, consumers and other end users, and public officials who set policy direction and plan and manage transportation infrastructure and land-use. We believe these policy objectives can be achieved through the inclusion of fossil-based transportation fuels in an economy-wide cap-and-trade system in combination with environmentally-effective and cost-effective complementary measures for all of the major components of the transportation system. Development of these complementary measures, including the methodology for lifecycle GHG intensity of transportation fuel described below, should account for the potential for leakage from uncapped sectors or regions, as well as credible GHG reduction programs in effect in countries providing fossil-based or biomass-based fuels and feed stocks destined for the U.S. market.

A. Fuel-Related GHG Performance Standards

The Energy Independence and Security Act (EISA) of 2007 established a Renewable Fuel Standard (RFS) that mandates the use of an increasing volume of different categories of congressionally prescribed fuels through 2022. While EISA07 mandates a timeline for the use of specific types and quantities of renewable fuels based on GHG qualifications, the extent of actual GHG reductions that will occur as a result of the RFS, relative to "business-as-usual," is uncertain.

To address these uncertainties and prevent the creation of conflicting regulations on transportation fuels, USCAP recommends that Congress instruct EPA to develop appropriate methodologies for determining lifecycle carbon intensities of various transportation fuels on an equivalent basis. EPA should develop this methodology in a manner that strives for both national and international alignment, including for those

methodologies related to the treatment of land use changes that can be reasonably attributed to the production and use of transportation fuels.

In addition, EPA should expeditiously develop a process for gathering data and determining the actual lifecycle GHG performance of the transportation fuel pool. These are the critical first steps for developing and implementing a transportation fuel GHG performance standard and ultimately for evaluating compliance with such a standard.

Based on this work, EPA should develop and promulgate a challenging, yet technologically and economically achievable GHG performance standard for the transportation fuel pool. This standard should be implemented as soon as practicable after the methodology work is completed and EPA has considered the results of the assessment of overall transportation sector GHG emissions reductions as per Section 7-D. Specifically, as part of this assessment EPA should consider the degree to which existing programs and market conditions are or are not sufficient to substantially reduce the lifecycle carbon intensity of the transportation fuel pool. Congress should assure that the RFS ceases to apply at the time that the GHG fuel performance standard takes effect.

B. Vehicle-Related GHG Performance Standards

EISA07 also raised Corporate Average Fuel Economy (CAFE) standards. It requires the National Highway Traffic Safety Administration (NHTSA) to set maximum feasible standards for light duty vehicles for 2011 through 2030 and achieve a standard of at least 35 mpg in 2020. The law also authorized use of an attribute-based approach for administering the CAFE program, extended the availability of dual-fuel vehicle credits through a phase-out period ending in 2020, and mandated fuel economy programs, including fuel economy performance standards, for work and other medium- and heavy-duty trucks. These vehicle fuel economy programs have a scope and structure that are consistent with the need for complementary measures for on-road vehicles, as stated in the *Call for Action*, and can serve as the basis for such measures going forward.

In the case of commercial medium- and heavy-duty on-highway vehicles, USCAP recommends Congress give priority focus to over-the-road diesel on-highway vehicles (e.g., line-haul semi-trailer units) which account for approximately 80% of carbon emissions by diesel fueled vehicles. Measures should address idle reduction technologies and infrastructure and incentives for increasing the deployment of known fuel efficiency retrofit technologies such as low rolling resistance tires, improved aerodynamics, etc. through programs such as EPA's SmartWay Initiative.

C. Reducing Carbon-Intensive Travel, Educating Consumers, and Improving Transportation System Efficiency

Reducing carbon-intensive travel and enhancing the efficiency of the transportation system will be essential to limiting GHG emissions to climate-protective levels consistent with those called for in the USCAP *Call for Action* and this *Blueprint for Legislative Action*. To this end, we urge Congress and the Administration to articulate and implement strong policies that will reduce GHG emissions from carbon-intensive travel, stimulate investments to improve system efficiency, and foster GHG-efficient development patterns and infrastructure. These policies should be a significant focus of the next federal transportation bill, as well as national climate protection legislation, including policies to:

— incorporate GHG measurement and accounting in transportation infrastructure funding and planning and reward GHG emission reductions that result from improvements to transportation infrastructure;

— require federal agencies, and encourage state and local agencies, to systematically review policies that affect the pricing of transportation systems and services and to modify such policies to make them as supportive as is practical with the national goal of reducing GHG emissions;

— require federal agencies to develop and implement durable, performance-based programs to inform and motivate consumers and other end users to adopt lower GHG-emitting transportation choices and practices; and

— require federal agencies to reform public fleet vehicle programs to achieve documented, performance-based GHG reductions.

D. Overall Transportation Sector GHG Management Policy

Congress should require EPA, in collaboration with the Department of Transportation (DOT) and other federal and state and local agencies, to carry out a periodic in-depth assessment of current and projected progress in transportation sector GHG emissions reductions as part of the overall review USCAP recommends in Section 3.

This assessment should examine the contributions to emissions reductions attributable to improvements in vehicle efficiency and GHG performance of transportation fuels, increased efficiency in utilizing the transportation infrastructure, as well as changes in consumer demand and use of transportation systems, and any other GHG-related transportation policies enacted by Congress.

On the basis of such assessments EPA, DOT and other agencies with authorities and responsibilities for elements of the transportation sector should be required to promulgate updated programs and rules—including revisions to any authorized market incentives, performance standards, and other policies and measures—as needed to ensure that the transportation sector is making a reasonably commensurate contribution to the achievement of national GHG emissions targets.

8 COMPLEMENTARY MEASURES FOR BUILDINGS AND ENERGY EFFICIENCY

USCAP believes that one of the most immediate steps Congress can take to begin to address climate change is pursuing policies and measures that improve the energy efficiency of the U.S. economy. Seventy-six percent of all electricity generated by U.S. power plants is used to operate buildings. Emissions reductions are available and cost effective even without considering the cost of emission permits, but a wide variety of disincentives exist that impede their adoption.

We recommend aggressive promotion and implementation of GHG reduction programs that collectively will help drive investment in cost-effective energy efficiency by encouraging utilities and consumers to improve efficiency when the cost of doing so is lower than the cost of an equivalent amount of energy in the form of electricity or natural gas. These programs include state- or utility-sponsored conservation and efficiency programs, tightened building codes and standards, and appliance efficiency standards.

Specifically, USCAP recommends that Congress enact and the Administration adopt:

— ***Codes and Standards:*** Codes and standards for buildings and end-use technologies should be established, implemented, and updated. The federal government should take action to improve the energy efficiency of its buildings and assist states in developing and implementing building codes and efficiency standards. These standards must be updated on an expedited and aggressive basis and updates must occur regularly to keep up with technology advancements. The U.S. should participate formally in international efforts to develop uniform codes and standards for end-use technologies.

— ***Expand National Incentives for Buildings that Out-Perform Energy Efficiency Codes:*** Current tax credits, incentives, and rebates should be extended and supplemented to allow for performance-based incentives for new and retrofit buildings, residential and commercial, owned and rented. Energy efficiency outreach and education programs should be fully funded.

— ***Create National Incentives for Equipment and Appliances that Out-Perform Minimum Standards:*** Effective upon passage of the legislation, provide incentives to manufacturers and/or retailers who successfully deploy very high efficiency devices.

— ***Tax and Regulatory Policies:*** Policies should help align incentives for consumers to invest in energy-efficient products and processes, and for manufacturers to develop and deploy these technologies. Policies encouraging the rapid deployment of such new technologies should make clear the need and propriety of cost recovery, especially for regulated entities like utilities that require some assurance that they will be permitted to recover the costs of such substantial capital investments before they would undertake them in many instances.

— ***Measurement and Accounting Protocols for GHGs:*** Department of Energy (DOE) and the EPA should collaborate and draw on existing and rigorous efforts to develop a common protocol for measuring and accounting for energy reductions and calculating associated greenhouse gas benefits.

— ***Align Utility Incentives to Pursue and Promote Energy Efficiency:*** Congress should clearly encourage the alignment of state and other authorities' regulations and ratemaking by placing a high priority on delivering cost-effective energy efficiency and demand management programs.

— ***Encourage States to Improve Efficiency:*** Congress should track and report states' progress in improving overall energy efficiency (e.g., weather-adjusted per capita residential consumption) and consider rewarding states that demonstrate faster progress (e.g., through smart utility regulation, improved buildings codes enforcement and appliance standards) with additional funding for efficiency.

— ***Energy Labeling for Buildings and Loan Underwriting:*** Building labels should be established that provide the market with information on the value of energy savings. Loan underwriting should be required to account for a building's energy cost, as reflected on the label, and should also account for transportation costs associated with where a home is located. This recommendation is consistent with federal and state laws and regulations precluding the practice of "redlining," or mortgage discrimination.

USCAP
United States Climate Action Partnership

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