

# **COST CONTAINMENT FOR THE CARBON MARKET: A PROPOSAL**

**Developed in consultation with  
The Nicholas Institute for Environmental Policy Solutions  
Duke University**

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## *Preface*

The following paper describes a bipartisan proposal to minimize any negative economic impacts of a transition to a lower-carbon economy while achieving critical environmental goals. The plan is designed to be incorporated into broader climate change legislation.

While action will be needed to responsibly address the environmental, economic, and national security threats posed by climate change, concerns over economic costs pose a major obstacle to enactment of legislation to reduce U.S. greenhouse gas emissions.

The inclusion of contingency measures to protect the economy in the event that the compliance costs of a national greenhouse gas emissions limit become excessive is essential to protect the national interest. It is also vital to alleviate economic concerns that hinder the passage of climate legislation, and to ensure the lasting success of the new market for low-carbon technology and cleaner energy alternatives and the achievement of the environmental goals.

This proposal was developed by Senators John Warner of Virginia, Mary Landrieu of Louisiana, Lindsey O. Graham of South Carolina, and Blanche Lincoln of Arkansas with the assistance of the Nicholas Institute for Environmental Policy Solutions at Duke University.

The proposal has been further refined through review and consultation with experts in industry, finance, economics, and environmental policy.

We thank all involved for their time and effort.

## I. OVERVIEW

### Proposal Summary

This plan encourages the development of a healthy U.S. greenhouse gas emissions market that will naturally avoid excessive costs. The proposal harnesses two principles essential to helping such a market seek the lowest costs: flexibility and oversight.

In the event of sustained excessive costs that threaten economic harm, the plan provides measures to encourage an economic correction. The plan also provides oversight to monitor the market, provide information on investment trends and cost effects, and apply the relief measures if necessary.

The plan is designed to be adapted to any legislation which would obtain reductions in overall emissions by incrementally limiting, or “capping” U.S. greenhouse gas emissions and allowing the trading of emissions credits (“cap and trade”). The underlying legislation must meet certain requirements, including a science-based environmental goal with an achievable timetable, and contain flexibility mechanisms that can be expanded to minimize costs.

1.) ***Providing Maximum Flexibility with Cost Relief Measures:*** The plan provides flexibility measures that could be deployed to relieve sustained excessive prices.

- The first would expand individual companies’ flexibility in determining when and how to meet their emissions reduction goals -- through expanded borrowing against future years and expanded use of offsets.
- The second, employed only in rare cases when necessary, would temporarily adjust the pace of national emissions reduction while still achieving overall reductions over time, through an expansion of emission allowances borrowed against future years.

The measures would be taken incrementally, minimally, and temporarily to preserve market certainty and continuity. The assessment of high costs during the early years of the program will be initially based on an expected range of emissions allowance costs provided to Congress by the impartial Congressional Budget Office (CBO).

The cost relief measures are not intended to relieve brief price spikes that are a part of normal, healthy market volatility. They are provided instead to adjust the market temporarily in the case of sustained high prices that indicate a true scarcity of options to meet immediate-term environmental goals.

2.) ***Assuring Appropriate Environmental and Economic Oversight:*** A successful U.S. carbon market will require independent and expert monitoring to provide guidance on trends and investment decisions. The plan would establish the Carbon Market Efficiency Board to carry out this principle. The Board would provide investment information, preserve market certainty, and have the ability to apply the cost relief measures if they are needed to keep the market operating smoothly and efficiently through the transition to a lower-carbon economy.

### **Background and Context**

During debate on the Energy Policy Act (PL109-58) in the 109<sup>th</sup> Congress, the four Senators represented in this proposal joined their colleagues in voting for an amendment (SA866) expressing the Sense of the Senate on the topic of climate change. The amendment stated that the nation should adopt a mandatory, market-based program to limit and reduce greenhouse gas emissions that would not significantly harm the economy.

Since that time, consensus has further solidified among the nation's top scientists, policymakers, industrial leaders, and the public at large that atmospheric concentrations of carbon dioxide and other heat-trapping gases are increasing, that these increases are at least in part related to humankind's burning of fossil fuels for energy and transportation, and that dangerous environmental and economic effects of this phenomenon could be experienced if greenhouse gas emissions are not reduced.

Because the severity of the environmental, economic and security effects of advancing climate change are both significant and urgent, and because the U.S. is one of the world's largest contributors of greenhouse gas emissions, U.S. national interests compel comprehensive and timely action by Congress to commit to reducing domestic greenhouse gas emissions and encouraging developing nations to do the same.

Reflecting these realities, Congressional leaders have announced their intention to pass major climate legislation during the current Congress. The 2005 resolution urged Congress to implement such a program in a manner that "will not significantly harm the United States economy." This provision expressed the reality that in order to address the problem of global warming, we must make a large-scale transition to a lower-carbon emissions economy, and that such a transition poses a risk of undue economic hardship to industry, companies, and consumers if it is not handled appropriately.

Legitimate concerns about the potential adverse economic effects of greenhouse gas emission limits remain and should be addressed if a national program to address global climate change effectively is to win approval and serve the best interests of the nation. Given the economic importance of the industries that would be affected by greenhouse gas emission limits and the public need for cost assurances, it is clear that an effective economic protection plan must be a part of any climate legislation.

Until now, current legislative proposals to address climate change have not successfully balanced the need to relieve possible economic hardship while at the same time assuring a successful path to reduced emissions and encouraging investment in lower-carbon emission solutions. This plan is designed to do both.

### **Understanding Costs of Climate Legislation**

Climate legislation will almost certainly impose some costs on industry and their customers. Under certain conditions those costs could become excessive and economically disruptive. It is also important to understand, however, that unnecessary moves to relieve costs that are not economically disruptive can have the unintended

consequence of discouraging investment in solutions that will be needed to reduce costs in future years.

A greenhouse gas emissions “cap and trade” market should present emitters with incentives to seek and invest in lower-carbon alternatives. Because companies must purchase emission permits, or “allowances” for emissions generated below the new limit, the “per ton” cost of emitting carbon and other greenhouse gases above the limit is an expense that a company can work to eliminate. A company that develops ways to reduce emissions below the limit will generate emission credits it can sell for profit to other companies seeking to “offset” some of their emissions.

The desire to limit costs and enhance profits through a healthy and transparent emissions trading market will stimulate the development and deployment of cost-efficient methods to reduce emissions altogether, or to capture and prevent them from being released into the atmosphere.

Over time, meeting greenhouse gas emissions reduction goals will require the increased deployment and commercialization of existing alternatives, including capturing and storing carbon from electricity generation, improving the energy efficiency in the transportation, utility, and manufacturing sectors, and developing low- and no-carbon energy sources and fuels. These alternatives must be available on a commercial scale and supported by infrastructure such as transmission lines for renewable energy, pipelines for stored carbon, reverse metering for distributed residential alternative energy, provisions for the long-term storage of nuclear waste, etc.

As long as there are sufficient options for emissions reductions throughout the economy, emitters should find allowance prices to be manageable. As emissions limits shrink, or should companies’ plans for lower-carbon alternatives take longer than expected to realize, prices could become excessive if alternative options are scarce. In this case, it may be prudent to employ measures to expand the market and/or slightly relax the emissions goal in the short term in favor of a more stringent goal when a larger supply of options is again available. This type of adjustment may “bend the curve” without essentially changing the overall emissions reduction path.

One response to price concerns might be to abandon the environmental goal. Yet a clear environmental goal provides the signal for investment in those solutions that, when deployed and commercially viable, will reduce costs over time. It is possible to adjust the emissions reduction path along the way while pursuing the ultimate environmental goal.

Another element of reducing costs is increasing long-term opportunity for the economy. The development and deployment of these lower-carbon options will likely present new economic opportunity for America in meeting world demand for energy efficiency, emission controls, and alternative fuels.

### **Legislative Criteria for a Successful Economic Protection Plan**

The underlying legislation must contain the following features for the economic protection plan to be successful:

***The establishment of mandatory emissions limits based on climate science.*** The mandatory emission limits set by the underlying legislation must be targeted to achieve stabilization at safe levels as recommended by climate scientists to reduce disruption from global climate change. Only mandatory and environmentally significant goals will send the signal for appropriate technology investments to protect against both higher allowance price costs and other economic disruption due to climate change itself.

***The establishment of an achievable emission reduction timetable, set in phases.*** The emissions reduction goals must be set along a scientifically sound timetable with reasonable interim goals to be feasible. The legislation should contain an emissions limit (“cap”) that tightens in reasonable phases, with time to adjust to each new phase by developing, deploying, and commercializing low-carbon emission alternatives.

***The ability to bank, borrow, and trade emissions permits.*** The emission allowance permits necessary to enforce mandatory limits must be issued under rules that allow parties to bank, buy, and trade them so that market forces can be harnessed to achieve the limits as cheaply and cost-effectively as possible. If emitters do not have these options, that inflexibility will reduce the opportunity for the economy to find and exploit market efficiencies, thereby increasing compliance costs without any corresponding environmental benefit.

Thus far, the major climate change bills introduced in Congress that employ these features in some form of “cap and trade” can be improved and gain further support with the addition of more robust measures to manage costs and promote investment. Some of the current bills contain features to manage costs, but fall short in certain areas.

For example:

- The emissions cap in some proposals can be canceled when allowances reach a set price that is easily achieved, allowing emitters to simply pay that price to the government to continue as usual. This replaces a true incentive to reduce emissions with an accepted additional cost of doing business;
- Some proposals place inflexible limits on companies’ use of banking, borrowing, and offsets to achieve emission reductions;
- Many proposals do not contain sufficient flexibility to adjust interim emission limits in the event of economic harm;
- All proposals lack an oversight body that can both monitor the market to inform investment and apply cost relief measures.

## II. THE PROPOSAL

This economic protection plan is designed to work in concert with any of the current legislative “cap and trade” proposals that meet the criteria defined above, to improve their ability to contain costs and encourage investment in long-term solutions.

As described above, the proposal provides the market with cost-relief measures and an oversight board to employ them. The measures are focused on adjusting the market to relieve sustained – not short term – high prices that threaten economic harm.

### **Defining economic harm: triggering price relief**

Emission allowances prices represent immediate cost to industry, and are the best proxy for risk of harm to the economy. They are the cost of emissions to industry, and the cost that may likely be passed to consumers through electricity rates and other energy costs.

Short-term allowance price spikes, however, are unlikely to be a signal of harm or risk to industry or consumers. A certain amount of fluctuation, or “volatility”, in prices is expected and even desirable in a healthy market. Because industry investments in lower-carbon solutions are necessarily long-term, action to relieve short-term spot market price spikes can eliminate the certainty that will encourage those investments.

It is also difficult to predict a particular emissions allowance price that will indicate significant economic harm, especially before the market has begun and operated for a some time. Such a prediction could even have unintended adverse economic effects – defining a set relief price will likely encourage the market to gravitate to that price, triggering a possibly unwarranted correction and discouraging market activity.

It is possible, however, to estimate through economic modeling a range of expected price levels, and from that range understand the price trends that may signify a true strain on the economy. Sustained prices above the estimated range could indicate a strain on the supply of options to meet the cap, indicating the current emissions reduction goal is not quite feasible. Such a situation would warrant actions to provide short-term flexibility to preserve the long-term economic and environmental goals.

To avoid overreaction to normal short-term price spikes and preserve investment certainty, this proposal recommends using an estimated price range as a benchmark, with the intention of applying the market remedies only when spot market prices are *sustained on average above the range*.

Modeling based on the underlying legislation’s initial cap and allocation scheme should give an accurate estimate of the expected range of prices during the market’s early years. The Carbon Market Efficiency Board would apply relief based on that estimate during the first two years. After the first two years, the Board would provide regularly adjusted price range expectations and would have the discretion to apply relief if deemed necessary – within limitations described below.

## **A. Flexibility: Economic Protection Measures**

Under this proposal, two remedies would be authorized to provide relief if carbon prices are sustained on average at undesirably and unexpectedly high levels. These remedies would be required by statute to be used minimally, incrementally, and temporarily, returning to normal as soon as feasible within the following years. They will be required to be utilized only with a specified year or years in which they would be compensated to the program to preserve the environmental goals.

### ***Remedy One: Temporarily Expand Borrowing and The Use of Offsets***

As discussed, the underlying legislation should already provide companies some flexibility in determining how to meet their emissions reduction obligations, through banking and borrowing credits against their own emissions reductions in later years, or through the use of emissions reduction “offsets” – purchasing credits for emissions sequestered such as through agriculture and forestry practices – as a percentage of their emissions reduction obligation.

If, however, even with those provisions, the emissions allowance prices are *sustained on average above the expected price range*, the first remedy of the economic protection plan would be to temporarily expand companies’ ability to use borrowing and offsets to meet the current year’s obligation under the cap.

#### *Expanding borrowing.*

Limits on borrowing would be expanded during the year in which the sustained prices occurred under the minimum terms necessary to bring costs back down into the expected range. The expansion would not be permanent; the borrowing limits would return to the original formula in the following year or years, and the time and terms of payback would be specified.

The mix of terms that may be employed to provide this relief include: a.) increasing the amount of allowances that covered emitters may borrow from future years; b.) expanding the amount of time over which the borrowed allowances must be paid back; and/or c.) lowering the interest rate at which allowances may be borrowed. Not all of these terms would be applied at one time, but exist as a “menu” of options that may appropriately restore prices to a reasonable range.

#### *Expanding the use of offsets*

If the underlying legislation limits the percentage of emissions reduction that can be met through the use of standardized “offsets,” this option would expand that percentage over the year in which the sustained prices occurred.

### ***Remedy Two: Temporarily Expand National Pool of Allowances***

In most cases, the above remedies will provide needed cost relief while avoiding a market overcorrection that could discourage investment in lower-emission alternatives.

In the rare case that the use of expanded borrowing and increased use of offsets is not adequate to bring average spot market prices back within the acceptable range, the plan authorizes the expansion of the number of allowances available in the current year to the

minimum extent necessary. How this remedy is used is critical to the preservation of the cap and reduction goals, and will be guided by clear parameters in statute:

-The statute will set appropriate limits to allowance expansion levels, with the understanding that the expanded level should not excessively reduce allowances available in future years, and should be the minimum amount necessary to relieve excessively high prices. Calculations show that even a minimal increase in allowances can make a significant difference in prices. We suggest an increase limit of 5 percent of the total allowances available. Initial economic modeling indicates that such a modest short-term expansion can reduce prices between 15 and 18%.

-Any allowance expansion made to relieve prices will only remain in effect for the current allowance year.

-The statute should require that such expansions are treated as borrowed against the market's future allowance levels, rather than as a permanent increase, to provide for the achievement of the overall cap over an appropriate timeframe consistent with environmental and economic objectives. If an expansion is made, it must be accompanied by a specified year or years in which there will be a proportionate reduction in available allowances.

- The Board will determine from what years the expansion has been made, with the limitation that it must be compensated by the end of the next required phase of emissions reductions. The intention is to recognize that any allowance expansion would likely be warranted only if the technology and efficiency options were limited, and to allow time to reach the next technology stage before requiring those allowances to be removed from the pool.

-The allowance expansion will occur across the entire market only. Individual companies or even whole sectors could not request an allowance expansion for their exclusive use.

-The allowance expansion would be allocated according to the same formula and means established in the underlying legislation.

### ***Employment of Economic Protection Measures in the First Two Years***

The first two years of the market will be considered a discovery period in which the measures are triggered automatically under certain conditions, and applied by the Carbon Market Efficiency Board.

-If allowance prices exceed the estimated range on average over six months' time, the first set of relief measures – expanded borrowing and use of offsets – will be triggered. The full menu of options for expanded borrowing will not yet be available. Instead, only the total borrowing limit will be expanded. The statute will specify the percentage borrowing expansion allowed, depending on the terms of the underlying legislation.

-If relief is not then achieved, and allowance prices continue to exceed the estimated range on average over a second six month period, the number of available allowances will be expanded 5 percent for that year only, with a payback requirement as described

above. There is ample evidence to suggest that in the initial start up phase, which is likely to begin with a modest emissions limit, the first set of remedies will be sufficient to provide relief if necessary and there will be no need for any larger expansion of allowances.

The intention in choosing six month time periods is to allow a sufficient period of time, after the market has settled, to establish a true trend of sustained higher prices, but not wait so long as to risk significant economic harm.

### **B. Oversight: Carbon Market Efficiency Board**

We propose the establishment of a Carbon Market Efficiency Board to achieve the statutorily required limits in greenhouse gas emissions in an efficient manner that avoids harmful price shocks, including the discretion to employ the above measures after the market's first two years.

All healthy and competitive financial markets operate in conjunction with an appropriate, independent, oversight body that provides for market transparency and has the ability to respond to extraordinary market conditions to protect the economy. A healthy and efficient carbon emission allowance market would be no exception.

The economic efficiency of the allowance market will depend heavily on the availability of timely, accurate, and relevant market information. Only a transparent and informed market is capable of rational price setting and the successful channeling of capital flows to the most economical means of cutting greenhouse gas emissions. It is also essential for detecting market failure or emergency conditions in which intervention is necessary to protect the economy from significant harm.

Market trends and other critical data such as overall supply and demand, who is buying, who is selling and for how much, and insights into potential constraints on the future availability of allowances because of existing consumption trends illustrates the type of information that is vital to rational decision-making by all concerned with the state of the market – whether they be emitters, investors, innovators, consumers, or policymakers.

For example, information provided by the board might indicate that a particular sector of the economy is short on alternative technologies capable of reducing emissions, and the corresponding demand for allowances is keeping their cost at a high level across the economy. Such information would drive investment capital to speed the development of alternatives for that sector, helping lower greenhouse gas emissions and reducing allowance prices and compliance costs across the economy. Alternatively, market information provided by the board might indicate that a particular alternative technology or offset category is failing to meet expectations, resulting in the redirection of capital to more promising alternatives.

Like all other financial markets, the greenhouse gas allowance market must have an oversight body capable of both providing this information and, when needed, employ corrections to protect the economy. The Carbon Market Efficiency Board is designed to fulfill precisely that role.

The board, like other financial market oversight bodies, will perform three main activities: information collection and analysis, reporting, and emergency response authorities. The following elements of the board's charter and authorities will be prescribed in statute:

***Information collection and analysis:*** The board will have the responsibility to collect and analyze relevant market information to promote a full understanding of its dynamics. This will include the best possible information about the status of the market, including allowance availability, pricing, macro- and micro- economic effects, and the market's success in achieving its environmental objectives.

The information collection and analysis function will be the primary activity of the board in its two-year start up phase. This early learning phase will ensure the board possesses the experience, expertise, and market understanding necessary to exercise its authorities expertly. After this two-year start-up phase, during which the board will have limited means to use cost relief measures described above, the board will continue this function, and will also assume full authority to implement the cost-relief measures when it deems necessary.

***Reporting:*** The board will have the responsibility to issue regular public reports to Congress on that market data. At a minimum, the board will be required to report quarterly to the President of the United States and Congress on the status of the national greenhouse gas emission market, the national and regional economic effects of the market, the response to the market of industrial sectors and consumers, any corrective measures taken to relieve excessive costs of the allowance market, and the adjustments in the allowance market required in future years to meet the requirements of the emission cap. While the reports should take into consideration the information and views provided by Federal agencies, the reports should be prepared independently by the board and may not be developed or submitted in partnership with Federal agencies. This requirement will ensure the board's independence and objectivity, and timeliness of the reports.

***Response:*** The board's responsibility to observe and monitor the national greenhouse gas emissions market will help it evaluate when sustained, excessive allowance costs pose a threat of significant harm to the economy. After its two year start-up phase in which it applies relief as prescribed above, the board will have the authority to apply the market-based cost relief measures at its discretion.

The board would be required to implement relief measures based on a sound and convincing record that such action is necessary and that it will achieve the desired result. The relief measures should be employed (a) incrementally, (b) only to the extent needed to relieve significant economic harm caused by excessively high, sustained allowance prices, (c) only within the current allowance year, and (d) accompanied by a plan for repayment. The board should describe the terms of relief in its regular reporting. Relief measures taken in any allowance year should be periodically reevaluated to ensure they are necessary, effective, and appropriate, and to ensure that such measures are accounted for in following years under the cap terms and timetable.

The board would *not* have the authority to implement cost relief measures based on either individual company or industry petitions for relief or on short-term allowance price spikes. Neither will the board will have the authority to (a) engage in investigative or enforcement activities that would otherwise be under the purview of the judicial branch or other federal agencies, (b) interfere with or modify the underlying allowance allocation process established by Congress, or (c) alter the overall emission cap, timetable, or other underlying goals and standards set forth in statute.

***Membership*** The board's authorizing statute must ensure that the (a) mission is well-defined and properly limited, (b) appointment process and make-up will ensure its expertise and independence, (c) operational criteria will shield it from political manipulation and economic gaming, (d) functions avoid the creation of unnecessary bureaucracy or duplication of effort, and (e) activities serve to inform the market properly and protect it from extraordinary circumstances that could threaten the economy by applying the minimum, market-based remedies necessary to perform that essential task.

The board should be comprised of seven members who are appointed by the President, with the advice and consent of the Senate, and who should serve fourteen year full-time appointments. The first set of members will be appointed in a manner to assure staggered terms.

The membership should be subject to the full range of standards applied to member of similar board, such as full compliance with a set of ethical standards and the assurance the appointees have the appropriate levels of experience and expertise and can properly fulfill the duties of the office.

While the board itself should be chartered to exist as long as necessary to fulfill the objectives of the authorizing statute, its members should serve on staggered-appointment, term-limited basis to ensure continuity, accountability, and provide the opportunity for the regular infusion of new perspective.

The fully described rules, procedures, and operational parameters should reflect best practices of other market oversight bodies established by federal statute.

### III. Guiding Principles

The development of this plan was guided by the following five principles or strategic objectives. We believe these principles are central to effective economic protection, and that any effort to minimize costs must meet these objectives.

**Maintain environmental integrity.** Relief from excessive costs should be provided in a manner that provides for the achievement of the legislation’s environmental goals. While the use and expansion of market-based methods such as allowance trading, banking, borrowing, and the use of offsets must be maximized to lower costs, these mechanisms must be employed in a manner that achieves the necessary reductions over the long run.

**Avoid unexpectedly high cost to the economy.** We believe that to avoid “significant economic harm,” the mechanism must be designed to address emission allowance costs that exceed the range anticipated by Congress, the President, and the public when the underlying climate legislation is enacted, particularly when such prices are not producing efficiencies and suitable alternatives to achieve compliance more cost-effectively.

**Focus on sustained price departures rather than short-term volatility.** Some price fluctuation is a feature of most healthy markets as investors respond to short-term variation in conditions. An effective cost-containment policy should not seek to eliminate this short-term volatility, but rather to adjust the market if sustained allowance prices indicate a true gap between the emission reduction targets and the near-term ability to meet them.

**Maximize the use of market-based mechanisms.** Robust and flexible market mechanisms are the first line of support for economic efficiency and limiting costs. We believe that successfully containing the compliance costs of a national mandate to limit greenhouse gas emissions depends upon the creation and maintenance of a healthy and efficient U.S. greenhouse gas market, and that market-based mechanisms will be most effective in providing the flexibility necessary to achieve environmental goals in a cost-efficient manner.

**Provide effective incentives for long-term investment.** While the policy should provide relief against sustained high allowance prices, it should also support the maintenance of a carbon price signal that guides long-term investment decisions to achieve the necessary emission reductions. Consistent rules, standards, goals, and market competition are the best means of sustaining the long-term investment needed to make the transition to a low-greenhouse gas emissions economy as cheaply and effectively as possible.

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