



The Role of Agriculture and Forestry within a Cap and Trade Program

Keys to a Successful Offset Program

June 15, 2009

SYNOPSIS

This discussion document addresses the ways in which the Waxman-Markey bill (HR 2454) under specifies the proposed offset program to the detriment of both the capped sectors and the uncapped agriculture and forestry sectors. Proposed amendments focus most importantly, although not exclusively, upon remedying deficiencies regarding the delivery of biological sequestration services.

The delivery of extensive sequestration benefits under HR 2454 can be further enabled by addressing:

- 1) the management of the risk of unintended reversals;
- 2) the market fungibility and market efficiency objective; and
- 3) the operational management of contracted duration (permanence).

The currently underspecified legislative text must be amended to ensure the viability of the cap and trade system's critical offset components.

BACKGROUND

There are two foundational realities which serve as a backdrop to the discussion of an improved offset program under HR 2454:

- Agriculture and forestry are uniquely positioned to deliver low-cost offsets, in volume, during the early years of a cap and trade program when a quick start is most urgent.
- Agriculture and forestry have much to gain from this opportunity.

(The following links develop these points in greater depth: [Solutions from the Land](#); [Workable Offset Program](#)).

The Waxman-Markey legislation has passed out of the Energy and Commerce Committee and has been subsequently referred to eight other House committees for consideration. The House Agriculture Committee is positioned to propose modifications to ensure an optimal offset program within the proposed cap and trade system.

The Highlights Table on the next page provides a single source description of the 25x'25 recommendations for further specification within HR 2454. Appendices A and B – Proposed Amendments and Technical Discussions follow, and they further develop the above topics.

Highlights Table: 25x'25 Suggested Amendments to ACESA (HR 2454)

Topic (topic #)	25x'25 Recommendation	HR 2454 Reference
Offset and allowance fungibility. (#1)	Legislative language must be altered to ensure that domestic offsets are fully fungible with each other and with allowances. Fungibility protects buyers in the capped sectors from the risks and uncertainties of reversals and impermanence. Fungibility can be achieved under a system where "Risk Management behind the Registry" is implemented at the program level (per below) and leads to market operational efficiencies and cost reductions.	Sec. 734 - Requirements for Offset Projects (as it pertains to domestic agriculture and forestry biological sequestration offsets).
Duration (permanence) of biological sequestration services. (#2)	Legislative language must specify a system of contracted duration, based upon a realistic underlying program definition of permanence, such as fifty years, and based upon offset provider contracted duration periods for as little as two to five years. Contracted duration alters and simplifies issues about unintentional impermanence.	
Risk Management Behind the Registry under an offset program. (#3)	Legislative language must be altered to fully manage the risks of unintentional reversals and of leakage at a program-level within the Offsets Reserve, not at a project level. It is understood that the offset program must include a mechanism to hold offset providers accountable for any and all intentional reversals. Biological sequestration offsets must be credited by the program Administrator at a discounted rate such that the difference between the value of the full offset and a discounted offset is the source of funds to manage all risks of reversal in an Offsets Reserve risk pool. The discount rate, NOT an after the fact charge, should be the full cost to offset providers for an unintentional reversal.	
Project types and protocols. (#4)	A comprehensive list is needed of project types that will be pre-approved, after brief review by the Administrator, and other types which will be examined for approval by a specified early date. Legislative language should stipulate not later than 1 year from enactment to establish eligibility and delineate appropriate protocols and methodologies.	Sec. 733 - Eligible Project Types and the Space amendment.
Operational Efficiencies. (#5)	Legislative language must stipulate that offset project protocols and methodologies will be developed to utilize standard practices, desk-top models, remote sensors, non-invasive means, and other procedures which minimize the project-specific data collection and monitoring requirements and burdens, while not sacrificing significant levels of accuracy. A set-aside of 5% of allowances should be stipulated to generate supplemental emissions reductions available but not yet specified with sufficient operational and scientific certainty to qualify under the more stringent requirements of the standard offset rules.	Sec. 734 - Requirements for Offset Projects; Section (d) to be added to address this issue.
Domestic Offset Parity. (#6)	Domestic offset providers, primarily agriculture and forestry, should be an allowable replenishment source for the Strategic Reserve (for price pressure management) on an equal basis with the international sources named.	Sec. 726(g)(3) - Strategic Reserve
USDA Role. (#7)	The legislative language must specify that the development and administration of relevant agriculture and forestry offset protocols and operational rules will fall under USDA jurisdiction.	Section to be added.
Early actor protection. (#8)	Legislative language must stipulate that early actors from the uncapped sectors will not be disadvantaged in any way vis-à-vis other offset providers. In practice this means waiver of additionality barriers as required and eligibility for a full crediting period.	Sections 734 - Requirements for Offset Projects and 740 - Early Offset Supply
Additionality & Baselines (#9)	Legislative language must stipulate that baselines will be static as long as at least 10% of eligible producers have not yet adopted the standard methodology and that the only additionality hurdle will be to adopt such a standard methodology and meet the existing stipulations (Sections 734 (a)(1)(A, B, C, D)).	Section 734 - Requirements for Offset Projects; (a)(1) Additionality and (a)(2) Activity Baselines
Crediting Period Duration (#10)	Legislative language must stipulate that crediting periods will automatically renew as long as the eligible practice is followed as prescribed and continues to deliver supplemental reductions, allowing therefore, for the crediting period to be limited by project specific saturation estimates for sequestration projects.	Section 734 - Requirements for Offset Projects; (c)(2) Crediting Periods, Duration

APPENDIX A: Proposed Amendments

Imperatives for Fixes within the American Clean Energy and Security Act (HR 2454)

Only the agricultural and forestry sectors can deliver quality offsets under a cap-and-trade program that are low-cost, available immediately, and available in quantities sufficient to bridge the calendar gap that will exist until core technological change can be implemented by capped sectors. According to the USDA, agriculture and forestry have the potential to reduce 15 to 25 percent of U.S. greenhouse gas emissions. Offsets from these sectors also create a host of co-benefits, such as reducing other air pollutants and improving water quality.

The structure of an offset program must be designed with input from these sectors to ensure the delivery of the full scope of carbon reduction services from the land. The following imperative amendments are distilled from the work of hundreds of sector stakeholders participating with the 25x'25 Alliance, including farmers and foresters, scientists, environmentalists, and market experts. These are amendments only, not a repetition of the many requisite portions of Title III which should stand as is.

These suggested amendments, unless otherwise noted, all pertain to *Title III – Reducing Global Warming Pollution*. Within Title III, they mostly pertain to *Part D – Offsets*, plus the offset-related portions of *Part C – Program Rules*.

There is a Highlights Table: Topics for Amendment within Waxman-Markey (HR 2454) on page two of this document. It summarizes the issues which are discussed more fully below. The topic # in parenthesis references the topic from this Highlights Table.

Domestic Farm and Forestry Offset Program Issues

Reference: Sec. 734, Requirements for Offset Projects

(Topics #1 fungibility; #2 contracted duration; and #3 risk management. All pertain to domestic agriculture and forestry biological sequestration offsets)

- Biological Sequestration offset projects involve issues regarding sequestration duration (a.k.a. permanence), reversals, leakage, uncertainty, risk pools (offset reserve), and insurance. Biological sequestration is by far the largest source of potential farm and forestry offsets, with nitrous oxide and methane reductions being the second and third largest sources respectively.

The Issues:

#1: The way risk is managed has major implications for the manner in which the offset and allowance markets interact and function. If allowances and all offsets have identical characteristics and entail identical risks, they will be fully fungible and exchangeable one-for-one. Fungibility, a positive attribute, will significantly alter the functioning of the carbon markets and reduce the costs of the entire offset program.

#2: Biological Sequestration Services may be delivered under a contracted duration procedure, which alters and simplifies the system of delivering reductions of this type.

#3: Reversals and Leakage are forms of risks borne by a cap-and-trade system that

allow biological sequestration offsets, as the U.S. system must. An offset program within a cap-and-trade system may be designed to make all offsets fully fungible with each other and with allowances, fully protecting the buyers in the capped sectors from the risks and uncertainties of alternative systems where offsets bear such risks in the marketplace.

The same offset program may further be designed with pooled risk-management mechanisms to protect offset sellers from unintentional reversals not under their control and from leakage, which by definition is outside of the project boundaries. In both cases there will be significant program benefits in lowered costs and higher operational efficiencies. The 25x'25 Carbon Work Group and many of its allied organizations have started to refer to such a system as "Risk Management behind the Registry", denoting the use of pooled risk methodologies to deal with risk issues at the program-level before offsets are issued and registered, not at the individual project-level.

The Solutions:

#1: The appropriate elements of Sec. 734, and other pertinent sections, must be altered to ensure that domestic offsets are fully fungible with each other and with allowances. Fungibility can readily be built upon a system where "Risk Management behind the Registry" is implemented as per Recommendation #3 below.

#2: The appropriate elements of Sec. 734 must be altered to provide a system of contracted duration, based upon a realistic underlying program definition of permanence as fifty years. Provisions must be made to allow an offset provider to buy out of a duration contract by replacing it with an equivalent contract in the marketplace.

#3: The appropriate elements of Sec. 734 must be altered to fully manage the risks of unintentional reversals and of leakage at a program-level, not at a project level. It is understood that the offset program must include a mechanism to hold offset providers accountable for any and all intentional reversals.

#4: Biological sequestration offsets must be credited by the program Administrator at a discounted rate such that the difference between the value of the full offset and a discounted offset is the source of funds to manage all risks of reversal. These funds will be placed in the Offset Reserve for use in creating the appropriate pool risk mechanisms by means to be designed by the Administrator.

The rate of crediting discount will be unique to each type of eligible biological sequestration project and will be of sufficient magnitude to cover all risks of reversal and leakages. The offset provider will NOT be required, under any circumstances, to contribute any further offsets or funds to account for unintended reversals or leakage. The program Administrator will be able to alter future discount rates to account for reversals beyond expected limits or to lower future discounts to account for reversal rates below expected limits.

Reference: Sec. 733 Eligible Project Types (topic #4 project types and protocols)

- *Sec. 733(a) List of Eligible Project Types* describes the development of a list of project types eligible to earn offsets.

The Issue. Domestic and international offset providers must be able to jumpstart their responsibilities, based upon the abundant offset protocols and methodologies that have been previously developed under suitably rigorous conditions for other programs. The Administrator can build upon this prior work for rapid ramp-up as suggested by *Sec. 734(e)*. The consequence without this alternative might be an unnecessary shortage of offsets in the early program years.

The Solution. This section needs a comprehensive list of project types that will be pre-approved, after brief review by the Administrator, and other types that will be examined for approval by a specified early date. The 25x25 response to the recent survey circulated by House Agriculture Committee Chairman Peterson is a ready source of information regarding farm and forestry project types, many of which should be pre-approved. *Sec. 733(a)(3)* should stipulate not later than 1 year to establish eligibility and delineate appropriate protocols and methodologies.

Reference: Sec. 734 Requirements for Offset Projects (topics #5 operational efficiencies and # 7 USDA role)

- At select points within *Sec. 734* and possibly also *Sec. 735 - Approval of Offsets* and *736 - Verification of Offset Projects*, and other points as well, there are various forms of description about the nature of the entire process of creating projects and ultimately receiving offset credits.

The Issue. This offset process has numerous ways that the process overhead may be minimized, while still meeting all of the existing critical components of an effective offset program. The steps in the offset credit process include utilizing the protocols and methodologies specified for each eligible project-type. Experience in other compliance systems has shown that the overhead costs of program compliance and the costs beyond the basic project implementation costs, can quickly become a significant obstacle to project participation. This is especially true given the nature of offset services from the agriculture and forestry sectors which utilize many small actions, often aggregated by a third-party, to deliver significant cumulative reductions.

The Solution. Add a section under *Part D – Offsets*, that specifies a clear intent for the Administrator to devise protocols, methodologies, procedures, registry requirements, verification requirements, and any other relevant process issues to be as operationally lean as possible, subject to the overriding intent to deliver offsets meeting the above referenced critical components.

Examples will clarify this point: Instructions could be given that all offset project protocols and methodologies must be developed and reviewed to assess the degree to which standard practices, desk-top models, remote sensors, non-invasive means, and other procedures can minimize the project-specific data collection and monitoring requirements and instead rely on, with only minimal loss of accuracy, averages and the

one-time or annual input of technology type, climatic data, geographic information, soil types, plant species, and other relevant factors.

A further source of efficiencies can be the set-aside of 5% of allowances to fund domestic supplemental reductions as described for the international community under Section 781. This 5% allowance set-aside should be stipulated to be employed to generate supplemental emissions reductions available but not yet specified with sufficient operational and scientific certainty to qualify under the more stringent requirements of the standard offset rules.

- A related issue within the topic of operational efficiencies and lower program costs is the role for USDA. Since USDA has the baseline expertise regarding farm and forestry practices, this expertise should be leveraged. We recommend that USDA should be the lead agency, under overall EPA guidance, for farm and forestry offsets. USDA's role would be to assume responsibility for the majority of farm and forestry offset functions under at least the following *Sections*: 732 – *Establishment of Offsets*, 733 – *Eligible Project Types*, 734 – *Requirements for Offset Projects*, 735 – *Approval of Offset Projects*, and 736 – *Verification of Offset Projects*.

Reference: Sec. 726 Strategic Reserve (topic #6 domestic parity)

- *Sec. 726(g)(3)* indicates that the Strategic Reserve will operate by using international offsets to replenish supply sold at auctions.

The Issue. Domestic offset providers, primarily agriculture and forestry, should also be a replenishment source for this reserve on an equal basis with the international sources named. The Strategic Reserve, an effective price management mechanism, should not be biased in favor of international offset providers at the expense of domestic offset providers. The provisions for the inclusion of international allowances (*Sec. 728*) and the set aside of allowances for supplemental reductions (*Sec. 781 and Sec 704*) are adequate tools to help leverage the international community.

The Solution. Change *Sec. 726(g)(3)* and any other sections related to the Strategic Reserve to include domestic offsets on an equal basis.

Reference: Sec. 740 Early Offset Supply (topic #8 early actor protection)

- *Sec. 740* stipulates the conditions for project eligibility for early offsets.

The Issue. Early actors from the uncapped sectors need to be protected in a somewhat different fashion. These actors should not be disadvantaged in any fashion vis-à-vis other offset providers.

The Solution. Expand *Sec. 740* and any other related sections related to protect early actors from being disadvantaged. There must be explicit legislative text which guarantees this point by: waiving Section 734 Additionality barriers as needed; and the explicit provision for the right to the full crediting period described within Section 734.

Reference: Sec. 734 – Requirements for Offset Projects (topic #9 additionality and baselines)

- **The Issue.** A “business as usual” approach to baselines and additionality can be used to prevent the latecomers to an emissions reducing standard practice to be ineligible to earn offsets. The more productive approach will be to encourage and help the latecomers create carbon reductions services as well via the offset program. Without the benefit of the cash flow from offsets, these latecomers will be unlikely to produce the reductions.

The Solution. Legislative language must stipulate that baselines will be static as long as at least 10% of eligible producers have not yet adopted the standard methodology and that the only additionality hurdle will be to adopt such a standard methodology and meet the existing stipulations (Sections 734 (a)(1)(A, B, C, D)).

Reference: Sec. 734 – Requirements for Offset Projects (topic #10 crediting period length)

- **The Issue.** Many practices will be implemented based upon their ability to reduce emissions and thereby be self-financing. Crediting periods which are too short will face the prospect of being stopped or even reversed in the case of sequestration. The better way will be to produce as many reductions as possible by lengthening the crediting periods until the potential for further reductions has been exhausted.

The Solution. Legislative language must stipulate that crediting periods will automatically renew as long as the eligible practice is followed as prescribed and as long as it continues to deliver supplemental reductions, allowing therefore, for the crediting period to be limited by project specific saturation estimates for sequestration projects (Section 734 (c)(2)).

APPENDIX B: Technical Discussions

Program Design Imperatives List

The following is a list of most, if not all, program design elements which are imperative to the achievement of an effective offset program within a national cap and trade system:

- environmental rigor;
- full acceptance of terrestrial sequestration;
- definition of permanence as 40 to 50 years on a contracted duration basis, with appropriate mechanisms to achieve fungibility and to allow risk management behind the registry;
- acceptance of all three categories of reductions (reductions in N₂O and CH₄ emissions, terrestrial sequestration, and avoided fossil fuel emissions);
- broad positives list, based upon the best available science, of allowable offset project types and their respective implementation protocols, both well in advance of program start dates;
- efficient, low-cost qualification procedure for new offset project types;
- efficient, low-cost project eligibility/qualification and registration procedures;
- efficient, low-cost project monitoring, quantification, verification, offset registration, and offset delivery and monetization procedures;
- stackable ecosystems services benefits from multiple programs;
- support for early actors so as to in no way disadvantage them vis-à-vis others;
- generous crediting periods;
- an additionality and baselines plan which encourages maximum reductions;
- offset and allowance trading markets regulation favoring offset providers and market transparency over market speculation & complex derivative strategies;
- an appropriate agriculture and forestry offsets program definition and administration role for USDA within the overall authority of EPA;

Program Design for the Effective Delivery of Terrestrial Sequestration Services

The following discussion addresses the central elements for a successful offset program incorporating terrestrial sequestration, with an emphasis on: contracted duration (permanence); offset-allowance 100% fungibility for market effectiveness; and risk management. We find these to be **the central element** of a workable offsets program, one not addressed sufficiently within Waxman-Markey (HR 2454).

Terrestrial (a.k.a. biological) sequestration of carbon dioxide (CO₂) can take many project forms and each approved type of an offset project will be based upon the rigorous program rules and protocol designs of the program administrators. The most common and widely employable protocols will be included in the program positives list of approved project types and will necessarily include soil sequestration in its many forms and forest carbon sequestered via afforestation, reforestation, avoided deforestation, and forest management. Other candidate activities include, for example, wood product credits and biochar soil amendments.

Offset projects based upon terrestrial sequestration entail concerns about duration (a.k.a. permanence), reversals (a.k.a. non-performance), leakage, uncertainty, risk pools (offset

reserve), and insurance. Sequestration is the largest source of potential farm and forestry offsets, with nitrous oxide and methane reductions being second and third respectively.

The management of the risk of offset project reversals (non-performance) has implications for the manner in which the offset and allowance markets interact and function. If allowances and all offsets have identical characteristics and entail identical risks, they will be fully fungible and exchangeable one-for-one. Fungibility is a positive attribute which will significantly alter the functioning of the carbon markets and reduce the costs of the entire offset program.

An offset program within a cap-and-trade system may be designed to make all offsets fully fungible, both with each other and with allowances. Fungibility protects offset buyers from the risks and uncertainties of project non-performance when **risk is managed behind the registry**.

Sequestration offsets may be delivered under a contracted duration procedure, which alters and simplifies the system. The appropriate system of contracted duration will employ a realistic program definition of permanence, such as forty or fifty years. An offset provider, together with the cap and trade program administrator, is responsible for ensuring that the contracted duration is met under all cases. Provision must also be made to allow an offset provider to buy out of a duration contract by replacing it with an equivalent contract in the marketplace.

Reversals and leakage are forms of non-performance risks borne by a cap-and-trade system that allows sequestration offsets, as the U.S. system must. The offset program must be designed with pooled risk-management mechanisms. An appropriate system designed with **risk management behind the registry** ensures environmental integrity, shields buyers from all performance risks, and protects offset sellers from unintentional reversals not under their control and from leakage, which by definition is outside of the project boundaries.

The risks of unintentional project reversals and of leakage must be managed at a program-level, not an individual project level. The program must also include a mechanism to hold offset providers accountable for all intentional reversals. Further, it is a necessity for verified sequestration offsets to be credited by the program administrator at a discounted rate. The discounted rate will represent the difference between the market value and the value paid to the project owner. The excess funds, the discount amount, will be pooled by the administrator to manage the risks of unintentional reversal. These funds will be placed in the pooled Offset Reserve for use by the program administrator in creating the appropriate pool risk mechanisms.

The rate of crediting discount will be unique to each type of eligible sequestration project and will be of sufficient magnitude to cover all risks of unintentional reversal and leakages. The offset provider will NOT be required, under any circumstances, to contribute any further offsets or funds to account for unintended reversals or leakage. The program administrator will be able to alter future discount rates to account for reversals beyond expected limits or to lower future discounts, or even pay dividends, to account for reversal rates below expected limits.

There will be significant program benefits in lowered costs and higher operational efficiencies from proper management of terrestrial sequestration under the above system of "Risk Management behind the Registry", including full fungibility and contracted duration.