

Policy Options Involving Offsets

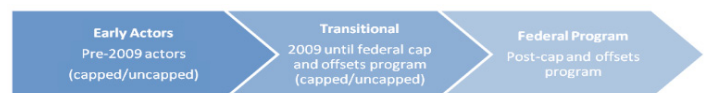
Policy Options for Transitioning from Voluntary to Federal Offsets Markets

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INTRODUCTION

This primer examines the options for transitioning from the current diversified voluntary offsets market to a more standardized federal offsets program expected as part of an economy wide cap-and-trade program. This primer was developed with input from a working group on offsets transition that first met in August 2009 as part of a broader effort by the Nicholas Institute to convene researchers, Congressional staff, and various stakeholders to explore ways of containing the overall cost of climate legislation. Based on our working group discussions (see Appendix for list of group participants), we present a number of policy options for the inclusion of offsets during the interim period between passage of a bill and final rulemaking on federal offsets methodologies (Figure 1). What happens during this interim period (~2010–2015) will impact the supply of offsets generated in the early years of the cap, and thus, the cost of the cap-and-trade system. Our discussion and the options presented in this primer were originally based on the American Clean Energy and Security Act (H.R. 2454), sponsored in the House by Reps. Waxman and Markey. Since we started this process, two new bills have been introduced: the Clean Energy Jobs and American Power Act (S. 1733), sponsored by Sens. Kerry and Boxer, and the Clean Energy Partnerships Act (S. 2729)— a bill dealing specifically with offsets— sponsored by Sen. Stabenow.¹ Many of the issues originally discussed for H.R. 2454 have been fully or partially addressed by these Senate bills, and as the legislative process in the Senate continues, additional bills and amendments are likely to emerge, which could further address the issues discussed here.

Figure 1. The progression of offsets policy from pre-enactment to the full offsets program. This primer focuses on the transition between the early actors in the voluntary market and the implementation of the final federal protocols.



Why Are Offsets Necessary?

The economic analyses by EPA (2009) and EIA (2009) suggest that offsets are among the most powerful cost-containment elements in the proposed climate legislation. Economically viable offset projects generally represent less-expensive alternatives to emission reductions in capped sectors and thereby reduce the marginal cost of achieving the aggregate target. Offsets can therefore play an important short-term role as low-carbon technology takes time to penetrate the capped sectors. Nevertheless, offsets represent only one of a series of options for cost containment; other strategies include price containment mechanisms, such as a strategic allowance reserve or a price collar, which are

¹ S. 1733 is co-sponsored by Sen. Kirk, and S. 2729 is co-sponsored by Sens. Baucus, Begich, Brown, Casey, Harkin, Klobuchar, and Shaheen.

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described in a separate memo in this series.²

It will take time for the appointed federal agencies to develop the federal protocols for offsets. Based on previous experience, a standard rulemaking process takes at least 12–18 months, and the development by EPA of Best Available Control Technology performance standards, such as those required by the Clean Air Act, often takes 5–7 years or longer. It will be important to have an expedited process to ensure a full set of federal offset protocols.

All three of these recent bills include provisions for the continuity in offsets development during the interim period, such as specifying a list of forestry and agricultural activities that should be considered for the federal offsets program and temporary recognition of existing state or regional registries or equivalent voluntary registries. But many potential offset project investors believe this uncertainty will hold back early investment and offset generation.

For example, investors have expressed concern over the length of time that early offsets projects (those developed prior to the establishment of federal protocols) will be credited and the protocols or project types that will be eligible. There have also been suggestions to widen the available pool of early offsets credits to include reduced emissions from deforestation and degradation (REDD), as well as to temporarily include stationary sources that would be covered by performance standards.

The working group (described above) discussed options for the treatment of interim offsets—those from projects developed after enactment but before the federal protocols are issued—based on H.R. 2454. The results of those discussions are summarized in a draft brief developed after initial discussion and this primer, which includes additional information concerning the treatment of interim offsets in S. 1733 and S.2729.

Will sufficient offsets be available early on?

There is some debate over whether large quantities of offsets will be necessary in the early years of the program.

Economic modeling of H.R. 2454 by EPA and EIA (2009) suggests that offset supply and demand are expected to be very high at the beginning of the program, with the entire one-billion-ton international offset limit exhausted and about 200 million tons of domestic offsets used as well. These offsets are against a cap that would, at the beginning, require less abatement than those totals. The offsets would largely be banked by regulated entities for use later when the cap becomes tighter and abatement more expensive, rather than used right away for immediate, less-expensive compliance. While offsets are not as necessary in the early years, certainty of sufficient offset supply in the coming years will be needed to keep costs down. Banking of offsets is a powerful tool emitters use to smooth out costs over time. While the overall cap does not require significant reductions in the initial years, the carbon allowance market could be rigid or illiquid in the early years and thereby require individual firms to purchase allowances or offsets to cover their emissions. Thus, given these substantive factors, and current business and political concerns, for the purposes of this primer we presume that offsets will be needed in the early years of a cap-and-trade program to help contain costs or concerns about cost, and that investment in these offsets will create other positive outcomes, such as early mitigation activity and innovation in project development.

What are the sources of uncertainty for interim offsets?

Uncertainty in timing for offset investment

Under both H.R. 2454 and S. 1733, offsets can be generated under existing methodologies from eligible registries if activities occur between January 1, 2009, and three years after the enactment of the bill. This window of project eligibility may not provide sufficient investment certainty to make early offsets projects viable. Investors may need to know that projects they invest in now— projects that may take a year or more to initiate and five or more years before paying off project costs— will have a long enough revenue stream to be economically viable.

Because it adds risk to switch a project developed under an existing protocol to a yet unknown federal protocol, extending the guaranteed crediting period beyond the 3 years specified in the proposed legislation could be critical

² For the Nicholas Institute memo on Allowance Price Containment Options for Cap-and-Trade Legislation, please visit http://www.nicholas.duke.edu/institute/carboncosts/price%20containment_final.pdf.

in encouraging investment. Members of the working group have suggested that extending the minimum guaranteed crediting period for initial offsets projects could encourage more investment in projects by allowing investors to see a potential return on investment.

S. 2729 partially addresses this issue by extending the crediting period for initial offsets to the shorter of 10 years or the project's specified crediting period. This change could enable many initial offsets projects to see an adequate return on investment; however, the 10- year limit on crediting could still discourage interim investment in forestry projects.

Uncertainty over offsets project eligibility

All three bills provide an offsets transition program. In H.R. 2454 and S. 1733, all protocols from a program (registry) authorized under state or tribal law are immediately eligible, and existing voluntary protocols may become eligible if the EPA administrator determines they are of at least equal stringency as those established under state law.

Under H.R. 2454 and S. 1733, the only protocols that appear to meet the criteria for immediate eligibility are those from the Regional Greenhouse Gas Initiative (RGGI) and the Climate Action Reserve (CAR).³

All other existing protocols would have to be identified by the Administrator as being of at least equal stringency as those from RGGI and CAR before they could become eligible. The Administrator (or the President in the case of S. 1733) would have up to 180 days from the receipt of an application to make a determination on the eligibility of other registries, though it is unclear whether that time frame is truly workable given the large number of tasks that will require attention upon passage of the bill.

S. 2729 (Stabenow) is a bit different in that it removes the state or tribal law requirement, putting all existing registries on equal footing, but it adds a different type of uncertainty. Under S. 2729, all existing offsets programs must be approved by EPA and USDA. EPA and USDA have 180

³ While H.R. 2454 indicates that offsets generated under RGGI and CAR are initially eligible, it does not specifically state that the verification methods from these registries are acceptable. Legislative language stating that offsets generated and verified under existing state or tribal registries could help resolve any uncertainty around the verification of initial offsets credits and accordingly help to ensure initial offset supply.

days after receiving an application to make a determination. S. 2729 does include very specific criteria concerning which registries must be approved, which may provide some clarity regarding which programs and protocols will be eligible to supply interim offsets. One point of uncertainty could be how strictly EPA and USDA will interpret provisions stipulating that reductions be —measurable, additional, verifiable, and enforceable, as existing registries vary in how these requirements are addressed.

In approving early offsets under any of the bills, however, the federal government may not wish to or may not be able to accept offsets that clearly fail to meet the requirements stipulated for future federal offsets protocols as specified in legislation. For example, H.R. 2454 and S. 1733 require that offsets be permanent, but existing protocols vary in how permanence is treated, with some not requiring permanence for sequestered carbon after the project is completed. To address this, S. 2729 gives authority to EPA and USDA to determine which offsets registries and offset methodologies qualify and which do not.

When developers look out to the future federal standards, all three bills provide a list of agricultural and forestry activities that will be considered for eligibility, and S. 1733 and S. 2729 also provide a list of potentially eligible activities in other sectors. These enumerations offer guidance for the eventual federal program but provide little certainty for interim investment, which may push developers who want their projects to be eligible for final federal standards to aim high in their choice of interim offset methodologies.

Potential for Expanding Initial Offsets Pools

Domestic offsets pools

If protocols from state and tribal registries (CAR and RGGI) are the only ones eligible to provide interim offsets, activities for which there are developed protocols under these programs, such as afforestation/reforestation, forest management, avoided forest conversion, urban forestry, manure management, landfill methane capture, and coal mine methane, would be possible. CAR currently has over 80 projects listed or registered, mostly under its landfill, manure management, and forest management protocols.⁴

⁴ Climate Action Reserve. <http://www.climateactionreserve.org> (accessed September 9, 2009).

RGGI has not yet registered any offsets projects under its protocols.

Table 1. Offsets project protocols available under existing registries.

| Registry | Full name | Projects covered |
|--------------------------|------------------------------------|--|
| RGGI | Regional Greenhouse Gas Initiative | Landfill methane capture and destruction, afforestation/reforestation, emissions reductions from end-use energy efficiency in building sector, SF ₆ emissions reductions in electric power sector |
| CCX | Chicago Climate Exchange | Landfill, agriculture, and coal mine methane collection and combustion, avoided emissions from organic waste disposal, agricultural best management practices, afforestation/reforestation, sustainable forest management, ozone-depleting substance destruction |
| CAR | Climate Action Reserve | Avoided forest conversion, sustainable forest management, landfill and livestock methane capture and combustion, afforestation/reforestation |
| VCS | Voluntary Carbon Standard | All project types eligible with VCS-approved methodology; current projects include reforestation, landfill methane capture and destruction |
| ACR | American Carbon Registry | All project types eligible that meet ACR Technical Standard; current projects include afforestation/reforestation, carbon capture and storage, landfill methane capture and destruction, livestock waste management |
| The Gold Standard | The Gold Standard | Renewable energy and efficiency projects |

Expanding to include other registries and programs may allow for some additional activities (Table 1). Important examples include:

- International reduced emissions from deforestation and degradation (REDD), which has protocols under VCS and specific methodologies now under development;
- agricultural tillage and rangeland management practices under CCX (but these may run into eligibility issues given additionality and permanence requirements in existing legislative language); and
- nitrogen fertilizer management and rangeland management, which may also be in development for the VCS and ACR.

Agricultural soil carbon

Given potential limitations in available protocols, an additional approach for engaging farmers and generating early reductions was discussed by the working group. During the transition to federal standards, USDA could issue offset credits to farmers and landowners for agricultural sequestration practices under a temporary pilot program. In order to do this the USDA could develop some sort of protocol to accurately determine the rates at which

offsets are generated by the sequestration practices. However it is unclear that it would be able to develop a protocol for an interim program any more quickly than it could develop an official protocol for the federal offsets program.

Alternatively, USDA could use general estimates of soil sequestration and project reversal rates, and highly conservative crediting given the uncertainties— a method more similar to that of CCX. This approach could be a transitional pilot program to encourage participation and create a bridge for farmers into a full offsets program. It could sunset for those not willing to shift to the full program.

Although these options for pilot programs are not included in the current bills, all three bills include provisions for supplemental domestic mitigation. Instead of issuing offset credits, the USDA is given a percentage of the allocation to fund direct payments to farmers and foresters for mitigation projects that are not eligible for offsets. While these programs would not initially increase the number of offsets available, they fully maintain the integrity of the cap, and they could help generate support for these programs and provide data needed to develop additional protocols more quickly.

Effects of performance standards on offsets supply

H.R. 2454 requires the development of emission performance standards for uncapped stationary sources in section 811. These same sources have at times been considered a potential source of offset credits, but may now be regulated and are therefore no longer available to generate credits. However, reductions from these sources beyond the requirements of the standards could potentially be eligible for offsets.

The performance standards would affect categories of sources responsible for 10% of uncapped methane emissions, which make up more than 20% of uncapped greenhouse gas emissions. Based on data from the annual EPA GHG Inventory, the standards could regulate methane sources, such as landfills and coal mines, and thereby limit their use in offset projects. While it is possible that these sectors might still be able to generate offsets credits if they exceed the requirements of the performance standards, there might be little investment in these types of projects before the standards are promulgated because of the uncertainty over what the standards would look like and when they would be enforced.

S. 1733 addresses some of these concerns. Under S. 1733, EPA is not required to issue standards by any specified date, and EPA is precluded from issuing standards before 2020 for sources that could be eligible for offsets. The EPA analysis of H.R. 2454 suggests that allowing landfill and coal mine methane projects could reduce allowance prices in all years by 2% and increase cumulative domestic offsets usage by 46%. Furthermore, since EPA is allowed to issue performance standards for these sources starting in 2020, this could encourage investors to develop projects in these sectors early in order to maximize their return on investment, potentially leading to increases in the early offsets supply.

If it is still desirable to develop performance standards as soon as possible, however, two options could address the potential effects on the initial offsets supply:

1. The start date of the enforcement of the performance standards could be clarified to give more investment certainty. If it will take five years to issue the standards, language could be added to the legislation giving explicit eligibility for offsets projects in those sectors during that time period.

2. For even more investment certainty, the eligibility for offsets projects during a specified time period (3–5 years?) could be coupled with a guaranteed grandfathered crediting period (5–10 years?) for projects that started within that period.

Many registries, including RGGI and CAR, have existing protocols for landfill methane capture, and CAR has also issued a protocol for coal mine methane capture. If investors can take advantage of increased investment certainty, initial offset projects could generate reductions in these sectors in the interim and help seed the offsets market. While the EPA will get much of the data it needs to write the standards from the new GHG reporting rule, it might also be able to take advantage of different kinds of data generated by an interim offsets program.

Both H.R. 2454 and S. 1733 have extensive language on performance standards for ozone-depleting substances, including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which have significant global warming potential. The language in these bills, however, expressly directs the Administrator to develop regulations for the issuance of offset credits for the destruction of chlorofluorocarbons (CFCs). Furthermore, while S. 2729 does not contain any language on performance standards, it does include the destruction of ozone-depleting substances as a potentially eligible offset project type. This could become an important area for the supply of early offsets, as CCX already has a protocol for the destruction of ozone-depleting substances and CAR is currently developing one.

International offsets pools

Both H.R. 2454 and S. 1733 allow the purchase of credits issued by an international body, which could include those from the Clean Development Mechanism (CDM), which are currently issued under the Kyoto Protocol in the United Nations Framework Convention on Climate Change (UNFCCC).⁵ Before credits can be purchased, however, the United States must have a bilateral or multilateral agreement with the country in which the project is located. Maintaining some level of government

⁵ H.R. 2454 would not allow Joint Implementation (JI) credits, which are issued by the country in which the project is located rather than an international body. However, JI is currently a much smaller market than CDM.

control over the use of CDM in the U.S. can allow the U.S. to exert quality control and may also provide negotiators needed leverage in upcoming international negotiations as the CDM may be substantially revised. The working group suggested that a memorandum of understanding (MOU) with the UNFCCC could satisfy the bilateral/multilateral agreement requirements and expedite the process, while still allowing the U.S. to have some control over the quality of credits allowed to be used in the U.S. This may be important given uncertainty about what CDM will look like post-2012. Nevertheless the investor and emitter communities are concerned that it could take time to develop these agreements, delaying the availability of CDM (and REDD) credits in the U.S. market. Given that CDM is an internationally established and managed program, they would prefer that CDM be allowed directly in the legislation, without the requirement for a separate set of bilateral or multilateral agreements.

Reduced emissions from deforestation and degradation

REDD will likely be one of the most important sources of international offsets. However, both H.R. 2454 and S. 1733, which have been designed with concerns about integrity of atmospheric reductions rightfully at the forefront, may have inadvertently created a number of barriers to initiating REDD quickly. Initiating REDD quickly is a priority not just for the initial offset credit supply, but also because waiting means the continued loss of 13 million hectares (ha) of forest per year and the associated GHG emissions and loss of ecosystem services that go with it. Thus, in order to assess options for promoting initial REDD activity, it is worth revisiting the hurdles for generating interim REDD credits under the legislation, which include:

1. the requirement for multi- or bilateral agreements with countries where the projects are located (discussed above);
2. the requirement for national or subnational baselines (emission reference levels), with 20- year targets for zero net deforestation in host countries;
3. 5-year limits on subnational and project-based REDD crediting, which is especially problematic for REDD, where break-even periods of 10+ years are typical;
4. Country limits (which exclude major emitters, including Brazil, Indonesia, Malaysia, DRC,

Myanmar [Burma], and Zambia⁶) from project-based REDD; and

5. the lack of specified eligible project-based REDD protocols.

Lack of clarity in certain eligibility rules, such as how leakage should be accounted for and how liability for reversals will be handled, could also slow investment in REDD activities.

National accounting may take many years to be viable, as Brazil is perhaps the only country well positioned for developing a national REDD baseline at this time, and its official stance is against selling these reductions for offsets against developed-country compliance obligations. Therefore, project-based and subnational REDD are seen as extremely important for initiating REDD activities quickly and producing initial offsets. Thus, to encourage investment it could be important to address the barriers to initial REDD projects, including the length of the crediting period and the exclusion of major emitters.

A number of different institutions suggest lengthening the crediting period from 5 to 8–10 years for project-based REDD to help with investment certainty (addressing hurdle #3 above). Indeed, S. 1733 extended the crediting period for project-based REDD to 8 years, with a possible extension of 5 years.⁷

Another question is whether the exclusion of major emitters from project-based REDD (hurdle #4 above) could be temporarily relaxed to help boost investor confidence and lead to some demonstrated success on the ground in these countries. However, it is recognized that certain high-emission countries may be excluded to increase the incentive for them to take on more meaningful national-level targets, which they may be more readily capable of than many other developing countries. While

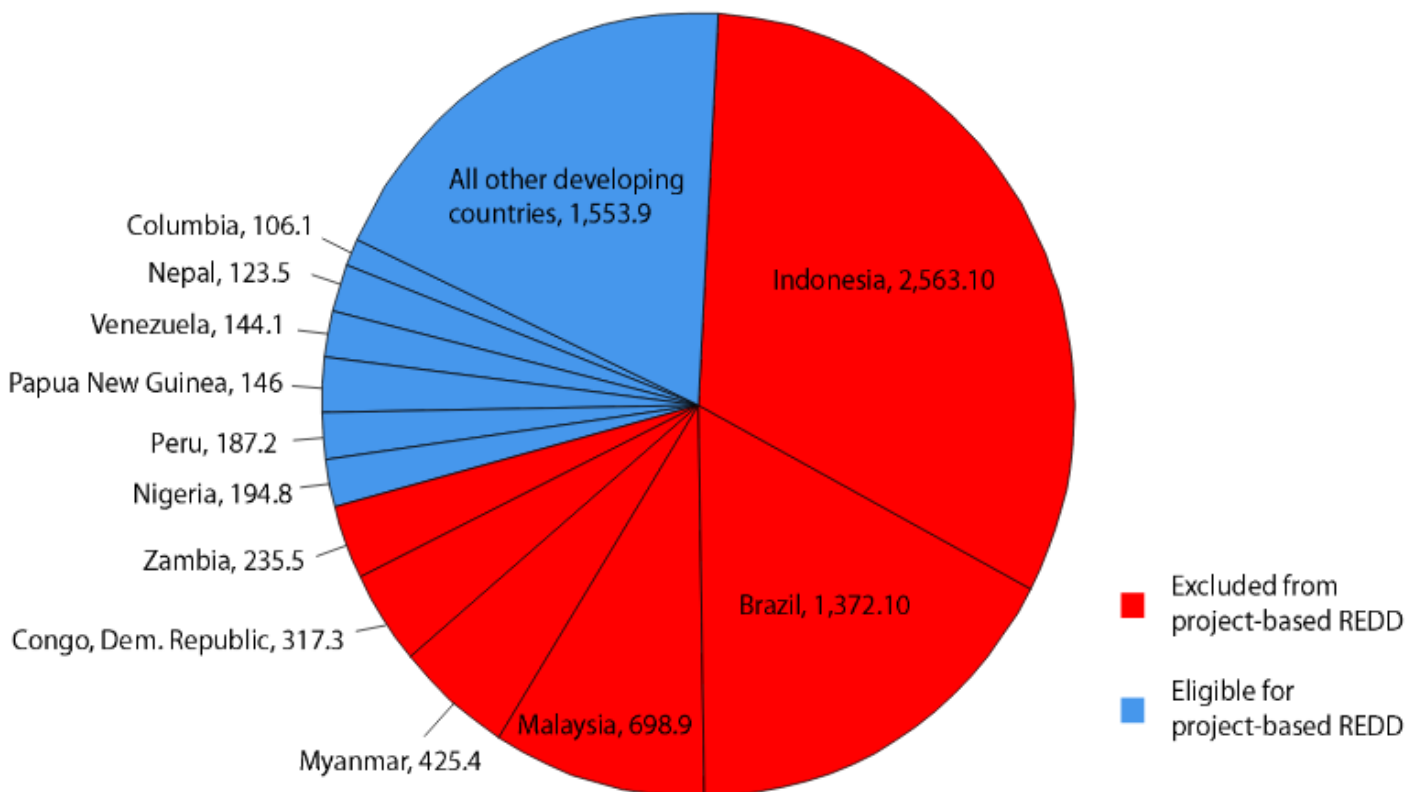
⁶ H.R. 2454 and S. 1733 preclude project-based REDD in countries that account for more than 1% of global greenhouse gas emissions and more than 3% of global forest-sector and land-use-change greenhouse gas emissions. Emissions for countries listed here were estimated using the WRI Climate Analysis Indicators Tool. Analysis using different emissions data could result in a slightly different list of excluded countries.

⁷ H.R. 2454 has a 5-year crediting period with a possible extension of 8 years; therefore the overall maximum crediting period is the same in both bills.

this approach would prevent REDD projects and subnational activities in countries with high emissions, reducing credits generated, it can still allow for the generation of credits from a number of other countries, increase learning on the ground, demonstrate successes, and help build capacity for an expanding market. Some working group members have suggested that the excluded countries are actually the ones that are most attractive for developing REDD projects because they have a better environment for investment. However, a majority of the REDD projects already validated or currently being validated by the Climate, Community, and Biodiversity Alliance (CCBA) are located in countries that would not be excluded under H.R. 2454.⁸

⁸ Climate, Community, and Biodiversity Alliance.
<http://www.climate-standards.org/projects/index.html>.

Figure 2. Global CO₂ emissions (Mt) from land-use change in developing nations. H.R. 2454 only allows REDD projects in developing nations. See footnote 8 for an explanation of countries excluded from and eligible for project-based REDD. Source: WRI Climate Analysis Indicators Tool.



In order to address the above hurdles, a program focused on early REDD may need:

- an expedited process for (and possibly even exemption from) the requirement for multi- or bilateral agreements;
- an initial focus on subnational or project-based REDD, as establishing national baselines and appropriately designed accounting frameworks will take time;
- an extended and guaranteed crediting period for subnational and project-based REDD;
- a possible temporary or partial relaxation of country limits; and
- some clarity on an acceptable and already- available crediting protocol(s) for interim investment and clarity on how leakage and permanence should be handled.

Our working group discussed the idea of a temporary pilot program that would provide some short-term investment certainty before the federal program was fully developed. One approach would be to allow existing protocols to be

used for a specified crediting period while the federal protocols are being developed. In the case of REDD, the only protocols we know of that are close to completion are those currently being developed under the Voluntary Carbon Standard (VCS).⁹ CAR has a protocol for avoided forest conversion, but it can currently only be used for domestic projects. Under H.R. 2454 or S. 1733 special accommodations would have been needed to guarantee VCS protocols would be eligible, but S. 2729 seems to put VCS on equal footing and provide greater certainty that the VCS methodologies would qualify for crediting in the interim period. In fact, S. 2729 specifically includes eligibility for REDD under its provisions for early offsets, though it adds an additional requirement that early REDD projects must be registered under an offsets program that —was established under State law (including regulations)

⁹ There are currently four REDD methodologies being developed under the VCS and they can be viewed at http://www.v-c-s.org/public_comment.html. These methodologies have undergone the public comment period and are now in the final process of being reviewed by two separate and independent validators.

or designated by a State as an offset registry prior to January 1, 2009.¹ Since the state of Pennsylvania Department of Environmental Protection (2009) has recognized VCS, CAR, and the Gold Standard as offsets registries under the Pennsylvania Climate Change Act of 2008, REDD would be eligible through VCS.

If worries remain about the environmental integrity of certain classes of offsets developed during the interim program, there could be an overall limit on the amount of offsets generated in the interim period. This could allow the generation of enough credits to encourage capacity building, but not so many as to damage the integrity of the cap.

An alternative approach would use a set-aside allowance pool to fund early reductions, creating supplemental mitigation rather than creating offsets against compliance. This would not directly produce offsets for the early years of the cap-and-trade program and would not provide cost containment, but it could help reduce deforestation quickly and perhaps may help lay the groundwork for faster development of a full REDD offsets program.

SUMMARY

Our original meetings and series of conference calls led to the suggestion of a few changes to H.R. 2454 coupled with the introduction of a few different pilot programs to generate early offsets before federal standards are fully implemented.¹⁰ Since these meetings, two new bills have been introduced that offer alternatives, S. 1733 and S. 2729. Some of the initial ideas discussed have been incorporated into these bills already and may help alleviate concerns about early offsets supply. Yet other issues remain unanswered in the new bills, including the difference in the number of international offsets allowed. S.1733, like H.R. 2454, allows 2 billion tons of offsets each year, but it caps international offsets at 500 million tons, whereas H.R. 2454 allows 1 billion tons of international offsets. Although each bill has provisions to increase the number of international offsets allowed if it is determined that the supply of domestic offsets is insufficient, there are still questions about how quickly international supply can ramp up once that determination is made.

This primer reflects ongoing efforts by the Nicholas Institute to address how offsets can help alleviate the costs of climate legislation while bringing low-carbon practices to uncapped sectors. As the legislative proposals to address offsets undergo refinement in Congress, we will continue to work with a wide range of policy audiences and stakeholders to examine the role of offsets in climate legislation and their potential for cost containment.

¹⁰ These are summarized in the draft version of this primer, available at http://www.nicholas.duke.edu/institute/carboncosts/NIoffsets_fi nal.pdf.

Appendix

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Nicholas Institute for Environmental Policy Solutions

The Nicholas Institute for Environmental Policy Solutions at Duke University is a nonpartisan institute founded in 2005 to help decision makers in government, the private sector, and the nonprofit community address critical environmental challenges. The Nichols Institute responds to the demand for high-quality and timely data and acts as an “honest broker” in policy debates by convening and fostering open, ongoing dialogue between stakeholders on all sides of the issues and providing policy-relevant analysis based on academic research. The Nicholas Institute’s leadership and staff leverage

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