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Initial Analysis of Offsets Provisions in the Draft of the American Clean Energy and Security Act of 2009 (ACESA)

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Summary

On March 31, Reps. Waxman and Markey released a “discussion draft” of a comprehensive climate and energy bill. The American Clean Energy and Security Act (ACESA) sets out numerous provisions on promoting clean energy and energy efficiency. There is much to praise in this proposed legislation, particularly in its ambitious agenda for transforming US energy infrastructure and its recognition of the need for the US to help fund clean technology, climate adaptation, and forest protection in developing countries.

Unfortunately, the climate section of the bill is seriously weakened by its heavy reliance on offsets to substitute for actual emission cuts by large polluters. The draft bill allows up to two billion offset credits – each supposedly an avoided emission of one metric ton of carbon dioxide – to be used each year (one billion from domestic sources, and one billion from developing countries). An offset “credit” is essentially a permit to pollute more than the buyer would otherwise be able to do. Experience with existing offset programs shows that trying to define a ton of “avoided emissions” is inherently prone to cheating and that most offsets probably do not represent real reductions in emissions. The result is that actual emissions – what impacts the atmosphere – are higher than what is accounted for.

Including such a huge amount of offset “hot air” in the ACESA draft means that its apparent mandated emissions reductions – to 20% below 2005 levels by 2020 and 83% by 2050 – would be achieved only on paper. *In reality, emissions from the major sources of greenhouse gas pollution in the US would be allowed to increase until 2025 and the 20% reduction supposed to happen by 2020 would not actually be required to occur until 2036.* The required reduction from major polluters in 2050 would be only 50%. This contrasts with the widespread consensus among scientists that the US must cut its emissions more than 80% by 2050 if we are to have a reasonable chance of avoiding climate chaos.

The ACESA draft sets up a regulatory structure that essentially replicates the regulatory framework of the Kyoto Protocol's Clean Development Mechanism (CDM), which has been demonstrably ineffective in ensuring the integrity of its offset certificates. The core problems of the CDM are due to inherent flaws in the concept of offsetting, not just its application.

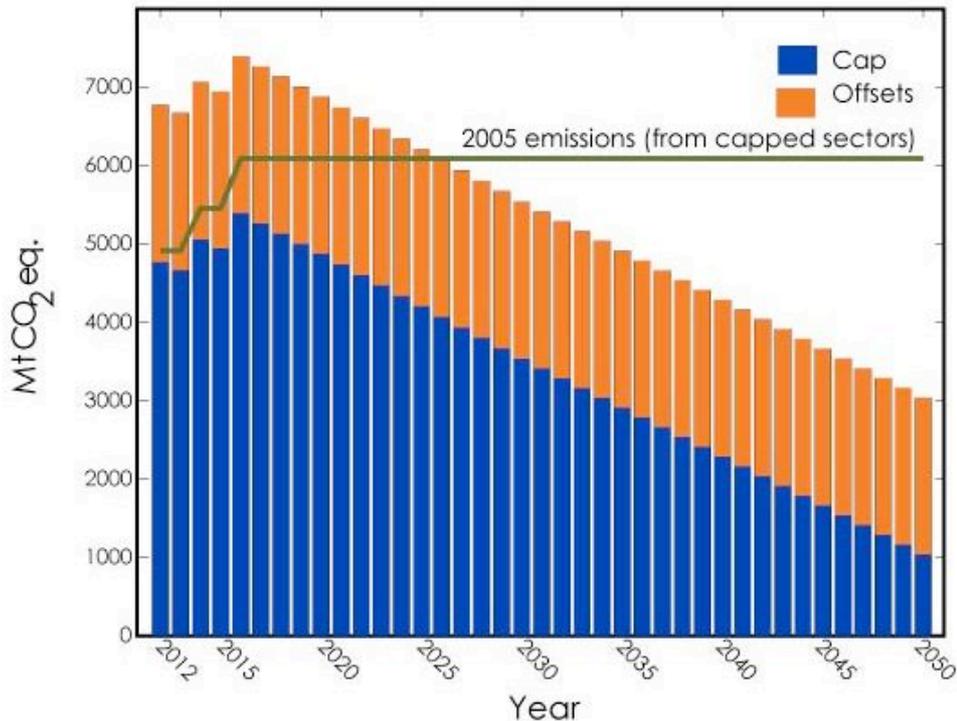
The American Clean Energy and Security Act of 2009 (ACESA) was released as a discussion draft on March 31 by Representative Henry Waxman (D-Calif.), Chairman of the US House of Representatives Energy and Commerce Committee, and Rep. Edward Markey (D-Mass.), Chairman of its Subcommittee on Energy and the Environment.

The ACESA draft is to be strongly welcomed for containing numerous provisions to promote the needed transition to a clean energy economy. It requires electric utilities to generate 25% of their electricity from renewable energy sources by 2025. (The only hydropower facilities that qualify as renewable are the emerging hydrokinetic, or free-flow, turbines and marine power, and capacity additions or efficiency improvements at existing dams.) The bill contains strong provisions to increase energy efficiency in buildings, appliances, vehicles and industry. It sets a Low Carbon Fuel Standard and promotes deployment of electric vehicles, investment in public transit, and planning for "smart growth." It also proposes programs to reduce two important non-carbon dioxide drivers of climate change: "black carbon" (soot) and the "F-gases" used in refrigeration. The bill creates a program to support training for green jobs, and to assist workers who lose their jobs in dirty industries.

The bill provides funding to assist communities in the US to adapt to the impacts of climate change and creates an International Climate Change Adaptation Program to help the most vulnerable developing countries. It also establishes an International Clean Technology Fund.

ACESA intends to reduce emissions from tropical deforestation via two contrasting approaches. The first, called Supplemental Emissions Reductions from Reduced Deforestation, is a fund-based approach. It is financed through an initial allocation of 5% of the US emissions allowances (declining to 2% in later years). Sales of these allowances are used to create a fund with the aim of slowing tropical deforestation emissions by at least 720 million tons per year by 2020. This would occur through investments in capacity building and forest conservation, and in principle would represent an additional 10% of emission reductions on top of the cuts achieved in the US in 2020 from capped sources. The fund approach as written into the draft bill could enable effective policies, activities and measures to slow tropical deforestation. Unfortunately, this positive fund-based approach would be undone through the second approach, which is based on bringing hundreds of millions of tons of international forestry offsets into the US carbon market each year.

ACESA purports to set a strict cap that will eventually cover 85% of all US greenhouse gas emissions, mainly from fossil fuels and industrial processes. Together with non-binding caps on other sectors, the draft states that it will reduce overall US emissions compared with 2005 levels: by 3% in 2012; 20% in 2020; and 83% in



2050. While the 2020 mid-term target falls well short of the 40% reduction targets being called for by many countries and climate scientists, the long-term target is consistent with what scientists believe is necessary to avoid the catastrophic climate change believed to be inevitable if global temperatures increase by more than two degrees centigrade (3.6°F) from pre-industrial levels.

Unfortunately the “firm” caps exist only on paper. In reality the caps will be blown to pieces by allowing polluters to meet their emission reduction responsibilities through buying offset credits rather than reducing their emissions. As the Government Accountability Office concluded in a November 2008 report: “the use of carbon offsets in a cap-and-trade system can undermine the system's integrity, given that it is not possible to ensure that every credit represents a real, measurable, and long-term reduction in emissions.” Given the inherent problems with the concept of carbon offsetting — with which we now have more than seven years practical experience at the international level — it is unlikely that even a highly competent, transparent and well-intentioned US regulator could ensure that the offsets used in a US carbon trading system would mostly represent actual emissions reductions.

ACESA allows the use of a stunningly high level of offsets — up to two billion offset credits each year (see Figure). Each offset credit supposedly represents the avoided emission of one metric ton of carbon dioxide equivalent. This is a vast number of offsets, equaling 28% of the US’s total 2005 emissions. Half of the offsets would be allowed to come from sectors in the US not subject to emissions caps (the offsets would come mainly from farming, ranching, forestry and landfills); and another half from three types of offsets from developing countries (explained below).

Two billion tons of carbon dioxide is greater than the reductions from 2005 emission levels required each year through to 2026. Using this quantity of offsets would allow capped emitters as a whole to increase their emissions by 38% by 2012. These major

polluters would not have to cut their emissions back to 2005 levels for another 17 years from today. If all eligible offsets were used, the 20% reduction supposed to happen by 2020 would not actually be reached until 2036. The reduction in 2050 would be only 50% rather than the stated 83%.

An offset discounting provision in ACESA requires emitters to purchase 1.25 offsets credits for every metric ton of carbon dioxide equivalent they intend to offset. This means that if the capped emitters use all two billion offsets credits they are permitted, they will actually create demand for 2.5 billion credits.¹

Recent estimates indicate that the Clean Development Mechanism may approve an average of around 300 million credits annually for the Kyoto Protocol's first "compliance period" (2008-2012). The potential annual demand for credits under ACESA is more than eight times this once discounting is applied. The CDM has shown an inherent contradiction between issuing large amounts of credits and ensuring credit quality. High quality credits means a cumbersome bureaucracy to weed out all the business-as-usual projects, which means few credits entering the market. If the market were to meet potential US demand, however, it would mean a speedy approvals process and a relatively open door for the cheats. A rigorous approvals process – which would be fought by the offset buyers and sellers – would mean a slow and expensive approvals process, making the system less attractive for the economically marginal projects that are the ones most likely to be additional.

The discounting provision is presumably included in recognition that a percentage of the offsets will not be "additional," that is, will not represent real emission reductions. Experience from the CDM, however, implies that although the exact percentage of non-additional projects is unknowable with any certainty because of the inherent subjectivity of additionality determination, it is likely much higher than the discount factor of 25%. International Rivers believes that the percentage is more likely to be upwards of 75%.

Discounting offsets could lead to the perverse outcome of lessening pressure to strictly audit for additionality. Offset market participants can be expected to lobby against strict additionality testing on the grounds that discounting will take care of the fake credit problem. This effect could be compounded by the greater demand for offsets created by discounting, leading to pressure on regulators to be lax in their setting and application of additionality and other rules that could restrict credit creation.

The massive potential demand for credits in the US suggests that quantity is likely to win out over quality.

Further demand for offsets would be created by a complex "strategic reserve" mechanism, apparently established to prevent excessive spikes in allowance prices. The reserve would initially receive an allocation of 1% of annual emission allowances. It would be able to release by auction the equivalent of up to 5% of each year's emission allowances until 2017, and 10% thereafter. The reserve allowances would be auctioned at a minimum price considerably higher than the average price of

¹ The bill is unclear on how exactly the discounting is to be applied. This interpretation of the discounting has been verified with a senior staff member on Rep. Waxman's committee.

non-reserve allowances over the preceding 1-3 years, so that there would only be bidders in the strategic reserve auctions during short periods of very high allowance prices.

Proceeds from the auctions would be paid into a Strategic Reserve Fund that would be used to purchase international “reduced deforestation” credits to be held in the strategic reserve for future auctioning. Like other offsets, forestry credits bought for the strategic reserve would be discounted by 25%. The strategic reserve could conceivably create an annual demand for more than half a billion forestry credits in the years immediately after 2017.

Domestic Offsets

Most domestic offsets would likely come from the un-capped agriculture and forestry sectors. Measuring the carbon budgets of forests and farms is notoriously inaccurate.² Therefore, even if it were clear that the changed practice was happening only because of the offset program, it would still be unclear how much of a carbon benefit, if any, is being achieved across the sector. US offsets created after January 1, 2001, could be eligible to be used in the scheme, a concern given the lack of regulation and well-known quality problems with current US offset schemes.

An additional issue with sourcing offsets from the agriculture and forestry sectors is the problem of non-permanence. The carbon stored in forests, soils, grasslands and other ecosystems is subject to release back into the atmosphere through disturbances such as fires, insect outbreaks, droughts or direct human activity. In short, they can be both sinks and sources of carbon dioxide. This potential non-permanence of carbon sequestered in ecosystems contrasts with fossil fuels, which, when they are burned, constitute a one-way additional emission of fossil carbon into the atmosphere that persists for well over a century. Using “green” biotic carbon, which is subject to short-term reversal, to offset fossil “brown” carbon, which is a long-term addition, introduces large systemic risks into the overall environmental integrity of climate actions, particularly if significant areas of these ecosystems are destabilized in decades to come by climate change itself. A far more robust approach is to put a firewall between efforts focused on enhancing carbon storage in the land use sector and efforts to reduce emissions from burning fossil fuels and other industrial processes.

Despite the well-publicized problems of the CDM, the draft bill establishes a mechanism for issuing US domestic offsets that is clearly based upon the CDM’s approvals process. As in the CDM, the US offsets mechanism depends on third-party certification agencies to validate project promoters’ claims. Also like the CDM, the validators will be responsible for judging whether the projects are additional: that is, they will have to give a subjective opinion as to whether the project would have happened anyway without the existence of the offsets income incentive. ACESA proposes random quality audits for the validators, a practice which has failed to solve

² “Uncertainty of forest carbon stock changes - implications to the total uncertainty of GHG inventory of Finland,” Monni, S., Peltoniemi, M., Palosuo, T., Lehtonen, A., Maekipaae, R. and Savolainen, I., *Climatic Change* Vol. 81 No. 3-4, pp. 391-413 Apr 2007; “Practical Policy Applications of Uncertainty Analysis for National Greenhouse Gas Inventories Gillenwater,” M., Sussman, F. and Cohen, J. *Water, Air and Soil Pollution: Focus* Vol. 7 No. 4-5, pp. 451-474 Sept 2007.

the serious problem with validator performance in the CDM. In this proposed federal framework, the role of the CDM's governing Executive Board will be played by a body within the EPA, and the role of the CDM's expert panels by an Offsets Integrity Advisory Board.

Experience with the CDM, by far the world's largest carbon offset scheme, indicates that such a regulatory structure, coupled with the potential massive demand for credits, is unlikely to ensure that most offsets represent real emission reductions. The CDM has tried to assure credit quality by establishing a complex bureaucratic process for credit issuance with numerous apparent quality checks. Yet the complexity and sheer number of project applications (more than 4,600 projects as of 1 March 2009), the ease by which developers can make fraudulent claims, and the strong incentives and lack of disincentives for them to do so have overwhelmed any desire on the part of the CDM Executive Board to properly audit developers' claims and monitor the integrity of the validators' assessments.

The US offset mechanism is likely to replicate the political and economic incentives, and cultural biases in the CDM which lead the validators, the secretariat and Executive Board, to give the benefit of the doubt to project developers' often unprovable claims about their intentions. Just as with the CDM, the administrators of the US mechanism will be under pressure to issue large amounts of credits to meet market demand from credit sellers (likely to be dominated by powerful agribusiness and forestry interests) and buyers (including the big polluters such as the coal-dependent utilities). Carbon brokers (including specialized companies set up to speculate on carbon prices, as well as carbon trading units within the big Wall Street firms and multinational energy companies like Shell) will also push hard against meaningful regulation, as they currently do with the CDM. We can also expect the problem of regulatory capture and a revolving door of offset scheme regulators and validators taking jobs with project developers and carbon trading firms, and vice versa. As with the CDM there are likely to be numerous incentives to generate large numbers of offsets coupled with a lack of incentives to reject applications.

One reason to believe that quality control may be better in the US than under the UN's CDM is that the US scheme will be more open to legal challenges. However it is not clear which groups would have the resources and inclination to challenge in court large numbers of offset applications. Meanwhile offset market participants and proponents would have deep pockets to help them fend off lawsuits. The sheer size of the US offset market would also make it difficult for independent groups to monitor (not to mention challenge) more than a tiny fraction of the likely many thousands of projects seeking approval every year.

International Offsets

The draft bill proposes accepting an equal number of offsets from developing countries each year as are accepted from the domestic program. The international offsets could come from three sources:

- A new program of "sector-based credits" for middle-income developing countries (such as India, China, and Brazil), likely to be administered by the EPA.

- Offsets issued by a body established under the UN climate convention. Currently, only the CDM meets this requirement. By the time the US trading scheme proposed in the bill would come into force in 2012, it is possible that new UN offset schemes may supplement or replace the CDM.
- A new US-administered program of credits for “reduced deforestation.”

The *sector-based credits* would be issued for industrial, power, and fossil-fuel sectors of emerging economies. A baseline would be set for emissions for the relevant sector, which would be lower than the emissions estimated to occur under “business-as-usual.” The number of credits to be issued would be “determined on the basis of such baseline.” This presumably means that if emissions in the relevant sector are reduced below the baseline, credits will be issued equivalent to the difference between the baseline and actual emissions.

It is impossible to tell whether major developing countries would agree to such an offsetting arrangement. Similar sectoral offsetting schemes have been proposed within the UN negotiations but so far have failed to find traction. While developing countries might be expected to be attracted by the potential funding to be gained from participating in such a scheme, they have also been skeptical about participating because they fear that sectoral baselines could be a step toward taking on binding targets. Developing countries also have concerns that such large-scale offsetting schemes could result in them “selling” their emission reductions to developed countries – so that when developing countries finally agree to binding caps all their cheaper reduction options will already have been taken, with developed countries having captured the “benefit” of the reductions. If the US is able to offset large amounts of its supposed reductions in China, where will China offset its reductions?

If some countries do agree to participate in a sectoral crediting scheme, the key problem will be how to know whether the credits represent actual reductions. Future business-as-usual trajectories can be projected, but never with a high degree of confidence, thus creating opportunities for gaming. The credit sellers will have strong interests in claiming high business-as-usual emissions growth so that even a very high baseline will appear to be a significant deviation from business-as-usual. And the US administrators of the plan will be under political pressure to approve high baselines so as to provide sufficient volumes of cheap credits for polluters at home.

The sectoral crediting scheme will also be prone to major problems in verifying what emissions levels are across entire sectors in countries as China and India with weak government oversight and regulation, especially in a context where large amounts of money may be gained if it appears that emissions have been reduced.

Given the uncertainties over the establishment of the proposed bilateral sectoral crediting schemes, it is reasonable to assume that most international offsets to be used in the US would be bought under the CDM (or whatever mechanism the UN negotiations agree to complement or replace the CDM after the 2012). While there is pressure on international negotiators to improve the CDM after 2012, there is no guarantee that it will be fundamentally changed – and there is countervailing pressure to make the CDM approvals process even less strict. The ACESA bill could add to this pressure by giving US climate negotiators an incentive to ensure that the number

and size of projects approved by CDM are massively increased so as to supply US demand for cheap credits.

As stated above, the CDM has gained notoriety for approving huge numbers of non-additional projects. One striking indication of this is that 76% of CDM projects were already completed by the time they received approval for selling credits from the CDM's Executive Board. It is not credible to argue that these projects actually needed CDM income to be completed, as they were financed and completed without any certainty that they would eventually receive the income.

The single largest project type applying for the CDM is hydropower, with more than 400 large hydropower dams in China alone applying for credits. Biomass power plants are the second biggest project type, followed by projects to capture landfill gas. The greatest number of credits issued so far has come from projects to destroy industrial waste gases.

The Waxman-Markey draft requires the CDM or other UN scheme to implement requirements that are at least as stringent as those to be used in the approval of US offsets. Given that the structure of the US scheme is, as argued above, largely based on the CDM, it may not be difficult for the CDM or other international offsetting mechanism to pass this test.

Offsets from Reduced Deforestation

The third strategy for international offsets outlines a new system based on the goal of reducing tropical deforestation. Policy development in this arena is even more contentious than industrial sector approaches, given tropical forests' ecological complexity and the major differences between forests in different places in terms of ecological types, carbon fluxes, threats from human disturbance, and local socio-economic realities. Forests are also subject to complex issues surrounding unresolved land tenure rights, weak governance, huge variations in estimates of carbon stocks and fluxes, and uncertainties over how to monitor emissions and the impacts of policies upon rates of deforestation and emissions. Forest credits also have a well-recognized potential to destabilize carbon markets by introducing large volumes of cheap offsets. ACESA envisions offset credits for "sustainable forestry practices," a widely abused term that is too often a cover for expanded industrial logging into primary tropical rainforests. Unless forest degradation is included, even heavily logging a forest, which would result in large emissions, could still generate offset "credits" because full deforestation was avoided.

At the international negotiations level, rules for inclusion of forests and land use sectors in offsets have proven to be particularly prone to perverse outcomes for both forests and the climate, often floundering on such seemingly simple starting points as the definition of a forest. While some initial safeguards are suggested in the draft bill, including eligibility criteria for countries where projects can be based, they are by no means sufficient or sufficiently spelled out. On the positive side, the bill does, however, specify "the establishment and enforcement of legal regimes, standards and safeguards that give due regard to the rights and interests of local communities, indigenous peoples and vulnerable social groups." The challenge will be how this

works in practice and the time actually needed to give meaningful “due regard” to these rights.

Again, as experience with the CDM has shown, wealthy and powerful financial and industrial interests will be pushing for simple standards and minimal safeguards in order to meet the massive market for international offsets envisioned in this bill as quickly as possible. The rights and interests of local communities will therefore be at risk of being rolled over in the rush to develop profitable offset projects.

Forest carbon is inherently difficult to measure, national and sub-national inventories are generally highly uncertain, and the forests themselves are very dynamic with large and largely unpredictable inter-annual variability that can send them from massive sinks to sources from one year to the next and vice versa. While the draft bill requires the US administrator of the scheme to assess the technical capacity to measure forest carbon in the countries supplying the offset credits, in the real world the investment costs to develop accurate monitoring and verification systems are prohibitively expensive for developing countries — and in fact have not yet been fully implemented even in the US.

Participating countries must set deforestation reduction targets with the aim of halting gross deforestation within 20 years and address a set of social and environmental safeguard criteria. Even so, it is a dubious proposition that an infusion of carbon offset money, despite the support the bill as written would provide, would help these countries overcome their high rates of illegal logging and poor enforcement of environmental and social laws. In fact, the concern is the opposite, that quick profits promised by addressing deforestation through offset mechanisms will undermine other deeper efforts to promote meaningful governance reform and address underlying drivers of deforestation.

Currently about 20% of total global greenhouse gas emissions come from tropical deforestation, and it is laudable that through this bill the US, which is also a major market for timber, paper, and agricultural products from tropical rainforest regions, would attempt to address this issue. The draft bill’s fund-based approach, however, which would provide assistance for developing country efforts to reduce emissions from tropical deforestation, provides a much better mechanism for addressing this issue than offsets.

Conclusion

The energy provisions in the Waxman-Markey bill could lead to the urgently needed transformation in how the US produces and consumes energy. Unfortunately the offsetting provisions in the climate action part of the bill considerably weaken its potential to drive down US emissions to the levels necessary to avoid climate chaos. These offsetting provisions should therefore be removed from the bill or, at the very least, minimized to a level where they cannot significantly harm the integrity of the emissions cap. Reductions from sectors outside of the cap would best be achieved through regulatory and fund-based approaches (e.g. the Supplemental Emissions Reductions from Reduced Deforestation scheme proposed in the draft bill).

One potential approach is that of California's AB 1404. This bill limits the use of offsets to 10% of the emission reduction commitments, prioritizes the use of offsets that provide benefits to communities already suffering disproportionate levels of air pollution, and excludes the use of CDM credits.

Allowing the offsets provisions in ACESA to stand would be a disaster for the credibility and effectiveness of action on climate in the US. It would also send a very unfortunate message to other major emitters, especially the EU and China, that the US considers it acceptable to respond to pressure for climate action through fake emissions reductions.

If the offsetting provisions are not removed or drastically scaled down, it will only further the growth of a "subprime carbon" industry that not only impedes emission reduction efforts, but with its widespread use of fraudulent practices can easily be exploited by climate change denialists and others who seek to prevent meaningful efforts to reduce emissions.