Chapter 20

Are Local, State, and Federal Government Bioenergy Efforts Synchronized?

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Introduction

Perhaps the most important question policymakers and stakeholders are asking today is whether local, state and the federal government policies are synchronized with regard to incentivizing and regulating bioenergy. Unfortunately, the answer is an unequivocal "no." One must only look at several websites[3] that have emerged in recent years to track bioenergy statutes and rules to discover that governments in the U.S. have enacted a plethora of regulations and incentives that influence the development of biomass-based electricity, heat, transportation fuels, and biobased products. The U.S. Department of Energy has compiled a list, detailed in Table 1, of individual references to technology and other fuel incentive programs:

	Biodiesel	Ethanol	Methane (CNG)	Propane (LPG)	Hydrogen (fuel cells)	Vehicles[1]	Fuel Economy	Other[2]
Federal	31	29	25	25	27	38	13	19
State	408	399	334	266	254	473	55	171
Total	439	428	359	291	271	514	68	190

Table 1. Count of federal and state programs providing incentives for Biofuels. [1] Electric vehicles, hybrid electric vehicles, plug-in hybrid electric vehicles. [2] Includes aftermarket conversion incentives, idle reduction technologies, and emerging fuel types and additional technologies. Source: U.S. DOE.

Although the overall number depicted in Table 1 is somewhat inflated by duplicate listings among the categories,[4] and does not include localities, the point remains that the landscape of bioenergy policies is highly populated and extremely varied. If the federal government or a regional collaboration of states, therefore, seek a more coordinated, integrated policy framework for bioenergy development-which will play a critical role in decreasing compliance costs for the nascent industry-they almost certainly will have to reconcile laws and regulations that may have conflicting or overlapping provisions. Although President Obama established in early 2009 a Biofuels Interagency Working Group (BIWG) to coordinate federal interagency policy on biofuels development and infrastructure policy,[5] the role of states and localities in the BIWG process to create more coordinated policy is not clear. While scholars have critiqued elements of federal, state and local policies, academia has not issued to date any comprehensive study assessing how these diverse programs may interact to promote or inhibit biofuel development and use. Indeed, this may be impossible given the number of programs, regulations and unforeseeable consequences. Although a review of all these competing or complementary regulations is beyond the scope of this paper, it will highlight the most important federal and state programs.

Federal Legislation

The Renewable Fuel Standard (RFS)

Use of crops and crop residues for biofuels has developed rapidly in the U.S. since federal energy bills emphasizing biomass were passed by Congress in 2005 (The Energy Policy Act)[6] and 2007 (The Energy Independence and Security Act (EISA).[7] These bills provide volumetric targets for blending of biomass-based transportation fuels, and subsidies for the domestic manufacture of ethanol and biodiesel, with the objectives of promoting rural development, reducing foreign energy dependence, and decreasing the greenhouse gas footprint (GHG) of transportation fuels. The mandate, set in statute and by implementing regulations,[8] calls for 36 billion gallons per year (bgy) of total renewable fuels by 2022 (of which corn ethanol can constitute up to fifteen billion gallons), 1 bgy of biodiesel (primarily soybean oil and other fats, oils and greases (FOGs) by 2012, and another twenty-one bgy from advanced (non-corn starch) biofuels by 2022, 16 billion of which derived from cellulosic sources. Advanced Biofuels also include ethanol made from sugarcane, whether domestic or imported.

EISA has incentivized substantial investment in corn-based ethanol, particularly in the upper Midwest where the majority of corn is produced. Corn starch-based ethanol production capacity will reach the 15 bgy EISA cap within the next few years.[9] These investments provide an incentive to maintain policies favorable to corn ethanol production and use, including those in the 2008 Farm Bill.[10] But there are inconsistencies, practical and political difficulties in implementing the RFS mandate.

Type	GHG Savings	2009	2022
Cellulosic	60%	---	16.0
Biomass diesel	50%	0.5	1.0
Advanced	50%	0.6	21.0
Corn Grain	20%	10.0	15.0
Totals		11.1	36.0

Table 2. Federal renewable fuel standard, mandated alternative fuel volumes.[11] Corn grain meets the 20 percent GHG reduction requirement for a fuel to be classified as "renewable."

For example, the mandated amount currently produced or anticipated equals or exceeds current and projected demand for ethanol as a component of gasoline in the U.S., at the current blending percentage maximum of 10 percent of gasoline. This limitation is referred to as the blend wall, and unless the percentage of ethanol allowed in motor fuels is increased, current and projected capacity mandated at the federal level argues against investment in further ethanol production, mandated or not, simply because there will be no market for it. Stricter federal fuel economy standards may also limit the amount of fuel needed, lowering demand.[12] EPA recently finalized a rule increasing the blend limit to 15 percent,[13] although this almost certainly will not end the debate surrounding further increasing blending allowances under the Clean Air Act.

An additional complication for biofuel suppliers is that, under the RFS, EPA has the authority to suspend the annual mandated requirements for advanced and cellulosic fuels if supplies do not appear likely to be met domestically. This was propsed in 2011 for cellulosic biofuels as it is apparent that there will be insufficient stocks to meet the mandate of 500 million gallons in 2012.[14] EPA is proposing an overall volume range between 3.45 and 12.9 million gallons. In addition, blenders can purchase renewable energy credits (tracked through renewable identification numbers, or "RINs") for a default price if the price of ethanol is too high. These provisions were included in laws and regulations to protect fuel consumers from high prices, but introduce uncertainty for potential biofuel developers and investors.

There are also minimum standards for the greenhouse gas savings required of mandated biofuels in federal legislation (Table 2). Generally, corn ethanol capacity in place or planned at the time of EISA's enactment is unaffected by GHG requirements due to grandfathering provisions. Calculations for GHG intensity of those fuels not exempted must include, in addition to direct emissions, estimates of terrestrial carbon losses due to land conversion elsewhere in the world resulting from crop diversion for biofuels. These are the so-called market-mediated effects or "indirect land use effects" (ILUC). US-EPA uses the FASOM model (McCarl, 1995) to assess domestic land use change, and the FAPRI model (CARD, 2010) to estimate global economic effects on land. Other jurisdictions like the State of California rely on different models/methods (e.g., GTAP) (Tyner, et al. 2010) to calculate these values. These differences are discussed in greater detail below.

Other Federal Programs

Tariffs, Taxes and Tax Credits

The U.S. currently imposes a 2.5 percent ad valorem tax and a secondary import tariff on most imported ethanol equal to $0.54 per gallon. The amount has fluctuated over the last several years.[15] The purpose of this tariff has been to stimulate the development of a domestic ethanol-based biofuel industry. In response to pressure from Brazil, as well as federal budgetary constraints, Congress will likely remove the tariff in 2011. There is also a tax credit for all ethanol blended in the United States, whether domestic or imported, of $0.45 a gallon. Biodiesel producers enjoy similar tax incentives through the end of 2011.

Production Subsidies, Grants, and Loans

There are many different grant and loan programs for facility development, as summarized at the U.S. DOE website cited above (Table 1). Potentially the most important subsidy from a crop production perspective is the USDA Farm Service Administration's (FSA) Biomass Crop Assistance Program (BCAP). FSA implemented BCAP throughout the later part of 2009 and early 2010, only to be halted pending finalization of a formal implementing rule. In late October 2010, the Commodity Credit Corporation (CCC) issued the final rule, with immediate resumption of implementation.[16] The program consists of two parts. First is a matching payment of up to $45 for the price received by eligible material owners (EMOs) for the collection, harvest, storage and transportation of eligible biomass to qualified conversion facilities for use as heat, power, bio-based products, or biofuels. Sourcing biomass for the matching payment from forests, whether public or private, is limited to prevent damage to sensitive environments. Also, no matching payments will be made for Title I crops, yard/food/animal wastes, municipal solid wastes, or algae. The second part of BCAP, referred to as the establishment and annual payments program or "project areas" program, will pay up to 75 percent of the costs of establishment, and annual payments, within the estimated 32 project areas designated by FSA for the production of eligible crops on eligible private lands. As of writing, FSA has awarded one project area for mixed species of perennial grasses, and one for giant miscanthus. All BCAP-subsidized material must be produced according to a conservation or forest stewardship plan or the equivalent, and the regulation limits growing of invasive or potentially invasive species. Many aspects of the final rule will require CCC and its advisors to provide further guidance (e.g., qualification of new crops and eligible practices), highlighting the importance of government regulators moving forward in establishing a viable and sustainable production system. The BCAP Final Rule is not entirely consistent with RFS, as RFS excludes biomass from federal forest lands categorically. Categorical exclusions of biomass sourced from state forests, or even federal forests, may not apply to individual state's biofuel feedstock programs, however.

GHG Programs

Since the Obama Administration came to office in 2009, on the heels of the U.S. Supreme Court's landmark decision in *Massachusetts, et al., v. EPA*,[17] EPA has pursued ambitiously regulatory programs to reduce GHG emissions from mobile and stationary sources. In the absence of omnibus federal legislation, EPA has finalized rules under existing Clean Air Act (CAA) provisions including a stationary source "tailoring" rule.[18] EPA has delayed for three years a determination whether biomass combustion will be treated as carbon neutral under the program.[19] Policymakers must consider how to reconcile the GHG accounting and "other" sustainability aspects of energy biomass feedstocks between the RFS, BCAP, and the CAA.

California

Of all the states, California has adopted the broadest and most aggressive state-level energy policies in the U.S. to date, including both mandates and other directed development of alternative energy and transportation fuels. The ambitiously named Global Warming Solutions Act (commonly known as Assembly Bill 32, or "A.B., 32") requires the state to reduce per capita carbon dioxide (CO_2) emissions over the next 40 year period from approximately 14 tons CO_2 equivalent (CO_2e) to 1.4, which equates to approximately a 90 percent reduction (CARB, 2008). Many strategies for GHG reductions through biofuels use fall under the A.B. 32 umbrella. The main ones are highlighted below.

The Low Carbon Fuel Standard

Under the auspices of A.B. 32's mandate, the Air Resources Board (ARB) has implemented a low carbon fuel standard (LCFS) (CARB, 2010; Sperling and Yeh, 2009) that mandates an overall reduction in the GHG intensity of transportation fuels by 10 percent in 2020, with increases in the incremental percent reduction progressively as the target date is neared. The rules governing the LCFS differ in important ways from the federal RFS, thereby presenting fuel blenders with differing standards for compliance at the state and federal level.

One of the significant ways CA policy differs from federal policy is its regulation of corn starch-derived ethanol, particularly with regard to GHG intensity calculations. As stated previously, both the RFS and LCFS specify minimum levels of GHG/carbon intensity reduction. To estimate GHG levels, both EPA and ARB deploy life cycle assessment (LCA), which is mandated under both schemes, and indeed at some level by most sustainability standards related to biofuels (van Dam et al., 2008; Endres, 2010). LCA is used to estimate the net GHG reduction, if any, from biofuel production and use, compared to conventional petroleum fuels. This involves calculating total GHG savings and emissions involved in the complete biofuel cycle from crop production to end use. The LCA model most commonly used in the U.S. for direct emission is the GREET model (Wang et al., 2010). Two California resource agencies, ARB and the Energy Commission (CEC) have adopted a modified version of GREET called CA-GREET. US-EPA also uses the GREET model (US-EPA, 2010). Even the most careful LCAs, however, involve assumptions and decisions about qualitative criteria used in making quantitative assessments (Zah et al., 2008). LCAs cannot anticipate future conditions and technical advances, and therefore are best used for purposes of comparison rather than for setting absolute standards. Better transparency and ease of use of LCA models is needed to legitimize them as a basis for important public policy decisions (Liska and Cassman, 2008). Different LCA methods and assumptions result in different GHG estimates (Liska et al., 2009; Plevin, 2009; Liska and Cassman, 2009). These differences may be large enough to influence biofuel marketing decisions, and even investments.

The factors included or left out of LCA calculations can lead to strikingly different assessments about the value of biofuels. Similarly, the boundaries assumed for the calculation of life-cycle effects also influence results. Most initial calculations about the GHG reduction benefits of biofuels were based on direct emission calculations from field to tank. Searchinger et al.(2008), however, argue that previous LCA calculations showing positive GHG effects from the use of crop based biofuels (Farrell et al, 2006) become significantly negative if indirect effects related to market effects on land conversion are considered. Stated briefly, Searchinger et al's hypothesis is that using staple commodities like corn or soybeans for biofuels in one part of the world will lead to an increased use of land in other parts of the world to replace the lost food crops. Converting forest land to farmland in places like Brazil releases such large amounts of carbon into the atmosphere that the positive effects of crop based biofuel use on GHG reduction are reversed. In effect, they argue that it is essential to broaden the boundary conditions of LCA calculations about biofuel crop production to include the entire worldwide system of agricultural markets and use the global atmosphere as the system's boundary. They estimate that the use of corn ethanol would result in a net increase of 104 g CO_2eq per MJ of ethanol. This change results from including carbon loss from land conversion in remote regions, otherwise known as market-mediated effects or indirect land use change (ILUC).

Adopting this argument, the most recent calculations reported by staff at CARB have reduced Searchinger et al's estimate to 30 g CO_2eq per MJ (CARB, 2009). Other recent estimates lower it further to as low as 13 g CO_2eq per MJ, nearly a tenfold lower estimate than Searchinger et al's original estimate (Tyner et al., 2010). Adding CARB's estimate for the generic lifecycle CO_2e costs for corn ethanol makes most corn ethanol equivalent to gasoline in its GHG effects on the atmosphere, rendering it useless in helping fuel blenders to meet the LCFS. EPA's LCA for the RFS, on the other hand, including ILUC, has placed corn ethanol above the 20 percent renewable fuel threshold (US-EPA, 2010). California's fuel demand equals approximately 10 percent of domestic use, so this difference between federal and California policy is not inconsequential.

The method chosen by CARB to assess the indirect or market-mediated effects of corn ethanol and other crop-based biofuels is based on the use of the Global Trade Analysis Project (GTAP) model.[20] GTAP is a computable global equilibrium (CGE) model developed at Purdue University to estimate the indirect carbon cost by inferring land change elsewhere in the United States and internationally. While no claim is made about land change in any specific location, GTAP uses data on land values and crop production from around the world, together with estimates of most significant international economic sectors, to analyze world food markets subjected to pressure from the use of corn for ethanol in the United States, or other crop uses for fuel. All other factors are held constant. One of the mechanisms for market adjustment required by the model structurally when crop production in the United States is altered is change in land allocated for crop production. These estimates of land use inferred from the GTAP CGE model are combined with estimates of the carbon content of terrestrial biomass and soil carbon on affected acres to estimate carbon losses from changes in land use.

ILUC calculation, whether using the FASOM (EPA) or GTAP (CA) LCA models, has been subject to criticism. For example, some skeptics claim that regulators used the GTAP model to bias the LCFS against crop-based biofuels using inaccurate estimates of what happens in the "real world" (Liska and Perin, 2009; Kline et al., 2009; Babcock, 2009). This includes the inability of the model to account for new technologies, and even failure to predict accurately induced land change in the U.S. (Babcock, 2009; Glauber, 2009). Others claim that it is poor policy for agencies to pick preferred technologies at such early stages in the development of biomass-based fuels. A record of this vigorous and interesting debate is available at the CARB website.[21] California is currently evaluating its use of the GTAP model using an expert work group. While EPA (2009) is mandated to calculate ILUC effects for biofuels, it does not use GTAP for the RFP reportedly because of significant current limitations in its ability to estimate indirect land use change. Instead, EPA uses a different set of models and approaches in combination (US EPA, 2010). Again, this will result in different estimates for these values for the same fuel.

CARB also has convened a sustainability work group to develop "other" sustainability criteria for fuels qualifying for the LCFS, including soil and water quality, and biodiversity.[22] For forest biomass, agencies involved in A.B. 32 activities have convened the Interagency Forestry Working Group to develop standards.[23] The two working groups coordinate their activities to a certain extent.

The Renewable Electricity Standard

CARB is in the process of implementing Executive Order S-21-09, which mandates 33 percent renewables in California's electricity supply by 2020. While the effort was delayed in the summer of 2010 in anticipation of legislative action.

Alternative and Renewable Fuel and Vehicle Technology Program

Assembly Bill 118 (A.B. 118) created the Alternative and Renewable Fuel and Technology Program[24] to establish a coordinated investment program for alternative fuels and transportation policy. This multi-million dollar investment program is funded by taxpayers to promote alternative fuel and vehicle development and use in California, and includes investment in both biofuel technologies and vehicle technologies. CEC has developed a set of sustainability standards that, in part, guide funding decisions.[25] It is yet to be seen whether LCFS and A.B. 118 sustainability standards, as well as any standards developed for the cap and trade program, infra, will be coordinated.

The Cap and Trade Proposed Regulation

CARB proposed a final cap and trade regulation in October 2010.[26] The RES and LCFS GHG reductions are calculated as part of the cap contained in the new program.[27] The use of biomass as an energy feedstock as a compliance strategy for capped entities is contemplated by the proposed regulation. Also, standards have been and are being developed for valuing the GHG reduction value of domestic and foreign offset projects used for C & T program compliance. It remains to be seen how California will reconcile its existing, or any newly developed energy-biomass-specific standard, with international norms and rules of sustainable forestry management. Also, policymakers will be confronted with the paucity of scientific consensus on how to measure carbon flux in a valuation system for offsets.

In sum, although pursued under an umbrella GHG statute, the focus of California's renewable biomass-related programs is not completely consistent. Each agency has differing fundamental responsibilities, administrative processes, and even cultures. The governor has mandated a multi-agency workgroup to help integrate state level biomass energy programs but with limited success.[28] These circumstances illustrate how administrative obstacles may inhibit well-intentioned environmental regulations and development of flexible reactions to quickly evolving problems and scientific knowledge.

This issue is not limited to California. For example, EPA and USDA use different estimates for the amount of land available in the important "cropland-pasture" category of land used to determine the sustainability effects of biofuels mandates. Specifically, the amount of U.S. land eligible for inclusion for biomass production for biofuels is defined by EPA as equal to 402 million acres. USDA (2010) finds that there are more cropland-pasture acres (36 million) than reported by EPA (20 million) in the RIA (US EPA, 2010). The land qualifying for biomass production varies accordingly by state and under full use, some states may have less eligible landscape area than might otherwise be used if EPA's more restrictive estimate is used.

Other State Incentives

Most current state laws and incentives are summarized by state at the US DOE and the Database of State Incentives for Renewable Energy (DSIRE, www.dsireusa.org) websites discussed above.

Multi-state organizations

The Western Governors Association (http://www.westgov.org/) has begun to implement an effort to harmonize rules and regulations governing biomass energy and alternative fuels in that region, though without specific effect to date. As noted on the website, the western states have adopted differing targets and timetables for GHG emission reduction from the energy and transportation sectors. Each state agrees broadly on the need to develop and use alternative Biofuels, but specific biomass resources vary widely across the region and each state has differing environmental, economic, social and political issues that make adopting comprehensive policies across the region difficult. Some of the more obvious measures these states seek to adopt in common is the use of fuel taxes and state vehicle purchases to promote higher blends of ethanol use. Siting and permitting difficulties are noted for many of the states. (http://www.westgov.org/index.php?option=com_content&view=article&id=126&Itemid=67). A number of policy statements about Biofuels and other biomass energy sources can be found at the website.

The Northeastern States (New England plus New York and New Jersey) have developed a 501c(3) organization called NESCAUM (http://www.nescaum.org/), to help states in that region coordinate public policies required by the federal Clean Air Act, and also now including Biofuels and other transportation and energy related issues. The NESCAUM states have developed a memorandum of understanding to jointly adopt transportation fuel standards following the principles of a low carbon fuel standard, based at least in part on the one adopted in California (http://www.nescaum.org/topics/low-carbon-fuels). NESCAUM is mindful of the need to accommodate other biofuel and biomass energy policies and asserts this need as a principle (http://www.nescaum.org/topics/low-carbon-fuels).

Sustainability Standards

Sustainability standards are needed to protect landscapes from strictly economic pressures for the use of biomass. A large number of different sustainability standards are being developed or have been adopted to guide or regulate the production, use and trade of biofuels or biofuel feedstocks (van Dam et al., 2008; Yeh et al., 2010, Endres 2010, RSB, 2011). A common feature is to protect against the degradation of landscapes and exploitation of politically vulnerable, poor populations in the process of producing and using biofuels. Some policies are voluntary, while others result from laws or other governmental regulations. There is some similarity of intent among all these groups and standards, but also differences. Reconciling differing or somewhat incongruent standards across regulatory and jurisdictional standards has not been achieved. Doing so will be challenging because sustainability standards often combine technical, measurable issues with values (Kaffka, 2009). Conflicting standards create uncertainty and will inhibit trade in biofuels and overall economic development of the biofuel sector. Adaptation and innovation will characterize any set of sustainability standards that successfully protect landscapes used for biomass production.

Synchronization of Federal, State and Local Efforts

Even this brief summary of select biofuel laws, regulations, and incentives in the U.S. reveals a complex mixture of efforts to stimulate and guide sustainable biofuel development and use in the United States and internationally. The U.S. federal system of governance results in different approaches to alternative transportation fuels that are not harmonized. There are some efforts to create comparable regulations at the state level, particularly expanding the use of a LCFS similar to the one adopted in California, and development of regional GHG cap and trade regimes. However, these efforts have not gained much traction to date. Even at a single level of government, there are conflicting data, visions, programs and in some cases laws that will have as yet unforeseeable consequences. Fuel blenders and other biofuel businesses must navigate this uncertain and complex set of circumstances. The existence of all these programs provides both incentives and disincentives to the development of sustainable biofuel supplies.

The potential for conflicting laws and regulations, operating across different levels of governance or in different countries, is inherently chaotic. It can impede the development of useful biofuels, and such is likely the status quo condition. A biomass energy roadmap must include some means of identifying important conflicts among diverse regulations. Some means of net benefit analysis among incongruent regulations and weighing of conflicting public policy goals is needed but not available.

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[3] The U.S. Department of Energy (DOE) lists many federal and state incentive, tax and regulatory programs at a helpful website (http://www.afdc.energy.gov/afdc/laws/). Also, DOE, in conjunction with the N.C. Solar Center, N.C. State University, and the Interstate Renewable Energy Council, maintains a database of state and federal incentives and policies (http://www.dsireusa.org/).

[4] A single law or regulation may include more than one bioenergy provision such as a combination of

incentives, technology mandates, and other regulations.
[5] Presidential Documents, Biofuels and Rural Economic Development, 74 Fed. Reg. 21531-21532 (May 7, 2009).
[6] The Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat 594 (Aug. 8, 2005).
[7] The Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (Dec. 19, 2007).
[8] The U.S. Environmental Protection Agency, Regulation of Fuel and Fuel Additives; Changes to Renewable Fuel Standard Program; Final Rule, 75 Fed. Reg. 14674 (Mar. 26, 2010) [hereinafter RFS2 Final Rule].
[9] RFA (2010), Climate of Opportunity, 2010 Ethanol Outlook Report http://www.ethanolrfa.org/page/-/objects/pdf/outlook/RFAoutlook2010_fin.pdf?nocdn=1.
[10] The Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, §9008(e), 122 Stat. 1651, 2089 (2008).
[11] Cellulosic includes: (1) crop residues such as corn stover, wheat straw, rice straw, citrus residue and others; (2) forest material including eligible forest thinnings and solid residue remaining from forest production; (3) annual cover crops planted on existing crop land such as winter cover crops; (4) separated food and yard waste including biogenic waste from food processing; (5) perennial grasses including switchgrass and Miscanthus. Cellulosics must achieve a 60 percent GHG savings over petroleum-based fuels. Advanced biofuels include renewable fuel from qualifying feed stocks other than ethanol derived from corn starch, with at least 20 percent lower GHG intensity than petroleum fuels (includes ethanol Brazilian from sugarcane).
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[19] EPA, Final Rule: Deferral for CO_2 Emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration (PSD) and Title V Programs (July 1, 2011), http://www.epa.gov/NSR/documents/Biogenic_Deferral_pre-pub.pdf.
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[25] Id. § 3101.5.
[26] CARB, Rulemaking to Consider the Adoption of a Proposed California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation, Including Compliance Offset Protocol (Oct. 28, 2010), http://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm.
[27] Id. Appendix E.

[28] Ruhl and Salzman note in their article Massive Problems in the Administrative State: Strategies for Whittling Away, 98 Cal L. Rev. 59-120 (2010), that a similar multi-agency coordination effort for water resources by CalFed did not meet expectations.

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