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Submitted to [www.arb.ca.gov/capandtrade/comments.htm](http://www.arb.ca.gov/capandtrade/comments.htm)

Karin Donhowe  
Office of Climate Change  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95812

**Re: Southern California Public Power Authority Comment on the July 27, 2009  
Workshop on Linking California's Cap-and-Trade Program to Other  
Greenhouse Gas Trading Programs**

Dear Ms. Donhowe:

The Southern California Public Power Authority ("SCPPA")<sup>1</sup> appreciates this opportunity to comment on issues discussed at the July 27, 2009 Air Resources Board ("ARB") workshop on "Linking California's Cap-and-Trade Program to Other Greenhouse Gas Trading Programs."

During the workshop, the ARB staff raised several questions for stakeholders. One question was: "Which implications—advantages or disadvantages—are the most important for ARB to consider when evaluating whether to link with another program?" Linkage with other cap-and-trade systems is an important tool that can be used to contain the cost of cap-and-trade program as well as the cost of greenhouse gas ("GHG") emission abatement. However, in some instances linkage could have unintended consequences, particularly if a jurisdiction that has adopted extensive complementary measures links its program to the cap-and-trade program of a jurisdiction that has not adopted reasonably comparable complementary measures. The ARB should assess proposed linkages on a case-by-case basis to assure as best as possible that the linkages will contain costs rather than raise costs for California covered entities. Also, the ARB

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<sup>1</sup> SCPPA is a joint powers authority. The members are Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles Department of Water and Power, Imperial Irrigation District, Pasadena, Riverside, and Vernon. The sponsors of this comment are Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Imperial Irrigation District, Pasadena, and Riverside. This comment does not express the views of SCPPA members that are not sponsors.

should be alert to the implications of linkage for the role of cap-and-trade as envisioned in the Scoping Plan.

A second question was: “Beyond its WCI partners, to which programs should California consider linking?” Beyond linking with the Partners in the Western Climate Initiative (“WCI”) and, potentially, other regional programs, the California cap-and-trade program should be linked with the California Low Carbon Fuel Standard (“LCFS”) program so that LCFS credits can be used as cap-and-trade allowances. Linkage with the LCFS program would help to contain the cost of cap-and-trade allowances and may help to ease the burden that electrifying the transportation sector may impose on the electric sector.

A California program would presumably be absorbed into a federal program instead of being linked with the federal program. If the ARB seeks to maintain a separate California cap-and-trade program even if there a federal program were enacted, the ARB should explain the rationale to the public.

**I. Which implications—advantages or disadvantages—are the most important for ARB to consider when evaluating whether to link with another program?”**

The most important feature of linkage is its potential to contain costs, including both the costs of emission abatement and the cost of a cap-and-trade program itself. SCPPA members are concerned about both of those cost categories. Various SCPPA members estimate that pursuing emission abatement measures such as attaining a 33 percent RPS, maximum energy efficiency, and penetration of smart grid technology will increase rates by approximately a third. If the members are simultaneously required to buy allowances to cover their emissions, rates could go up another third or more, assuming allowances prices are in the middle of projected ranges.

SCPPA members and their ratepayers are assuming the cost burden of measures that will result in concrete emission reductions. However, ARB policies will determine the extent to which SCPPA members and their ratepayers will be simultaneously burdened by the additional cost of allowances. As discussed below, linkage is one of the measures that can effectively constrain allowance prices. However, linkage should be pursued with jurisdictions that have adopted complementary measures that are reasonably comparable to California’s to avoid unintended consequences. Also, linkage has an implication for the role of cap-and-trade within the overall Scoping Plan that should be recognized and accommodated.

**A. The ARB Should Pursue Linkages to Contain Both Abatement Costs and Cap-and-Trade Costs.**

The ARB should pursue linkages in order to contain both emission abatement costs and cap-and-trade costs. Linkages should be evaluated on a case-by-case basis to assure, as best as possible, the any proposed linkage will realize those dual objectives.

1. **Linkages Can Contain Abatement Costs, but Their Usefulness to Contain California's Abatement Costs May Be Limited.**

The primary justification for linking programs is that they reduce the linked programs' collective abatement costs in the same way that a cap-and-trade program is supposed to reduce abatement costs within the program. The International Emissions Trading Association ("IETA") observes: "Just as allowance trading *within* a tradable permit system allows higher-cost emission reductions to be replaced by lower-cost reductions within that system, trading *across* systems allows higher-cost reductions in one system to be replaced by lower cost reductions *in another system.*" Judson Jaffe and Robert Stavins, *Linking Tradable Permit Systems for Greenhouse Gas Emissions: Opportunities, Implications, and Challenges*, prepared for IETA, [http://belfercenter.ksg.harvard.edu/files/IETA\\_Linking\\_Report.pdf](http://belfercenter.ksg.harvard.edu/files/IETA_Linking_Report.pdf), p. 1 (Nov. 2007) (emphasis in original) ("IETA Report"). The staff observed at the July 27, 2009 workshop: "Linkage reduces overall abatement costs by allowing emitters to choose lower cost reductions in one program instead of higher cost reductions in the other program." Staff Presentation, slide 12. The staff defined "abatement costs" as being "an emitter's (net) expenditures to reduce its emissions." *Id.*, slide 13.

The IETA and the staff's observations about the efficacy of linkage to reduce collective abatement costs may be correct if the linked cap-and-trade programs are not accompanied by complementary measures that mandate GHG emission abatement. However, the ARB's Scoping Plan mandates a host of complementary measures, including implementing the Pavley vehicle GHG standards, energy efficiency, a 33 percent renewable portfolio standard, the LCFS, the Million Solar Roofs program, high speed rail, and more. Scoping Plan at 17. The complementary measures are to be undertaken without regard for the cost of allowances. The complementary measures are intended to generate most of the 169 million metric tons of CO<sub>2</sub> equivalent ("MMTCO<sub>2</sub>e") that are needed to meet the AB 32 emission reduction goal by 2020, leaving only 34 MMTCO<sub>2</sub>e to be obtained through the cap-and-trade program. *Id.*

The reason that the complementary measures are called "complementary" is that they reduce the cost of the cap-and-trade program: "Some measures [such as a cap-and-trade program] may be much less expensive when implemented with others. These measures are *complementary* measures." Jim Sweeney and John Weyant, *Analysis of Measures to Meet the Requirements of California's Assembly Bill 32*, p. 12, <http://piee.stanford.edu/egi-bin/docs/publications/Precourt%20Institute%20AB%2032%20Draft%20Report.pdf> (Sep. 27, 2008) (emphasis added) ("Sweeney and Weyant").

Insofar as the cap-and-trade program would be required to generate only a small portion of the emission reductions that would be needed to meet the AB 32 goal for 2020, the staff projected that "the modeling results presented for the cap-and-trade program of the Recommendation reflect a carbon price of \$10 per ton." Scoping Plan, App. G, p.22. This projected price of allowances is not the average cost of emission reductions necessary to meet the 2020 goal: "It is important to note that the \$10 per-ton figure does not reflect the average cost of reductions; rather it is the maximum price at which reductions to achieve the cap are pursued based on the marketing program." Scoping Plan, p. 75.

More importantly, if a cap-and-trade program is to be implemented in conjunction with robust complementary measures as envisioned in the Scoping Plan, the resulting cap-and-trade allowance prices can be far below what would be the marginal cost of emission reductions if the cap-and-trade program were required to generate the required emissions reductions in the absence of the complementary measures. While the Scoping Plan projects a \$10 allowance price if the cap-and-trade program operates in conjunction with the Scoping Plan, Sweeney and Weyant project that allowance prices well in excess of \$100 per ton would be needed to generate 169 MMTCO<sub>2</sub>e of emissions reductions in California by 2020. Sweeney and Weyant, *Id.*, p. 14 (CO<sub>2</sub> Marginal Abatement Cost Curve).

Thus, linking the California cap-and-trade program may reduce the collective abatement costs of the linked programs, but the benefits to California will not be as extensive as apparently envisioned by the IETA or by the staff in their July 27, 2009 presentation. Neither the IETA nor, apparently, the staff took into account the fact that the cost of many of the abatement efforts that will be undertaken in California will occur in response to mandates without regard to allowance prices of linked cap-and-trade programs. The costs incurred to achieve emission reductions under mandated measures will not be abated by linkage.

**2. Linkages Can Contain Cap-and-Trade Allowance Prices, Assuming Reasonably Comparable Suites of Complementary Measures.**

While the capability of linkage to contain abatement costs may be limited if a cap-and-trade program is joined with complementary measures, linkage can still provide important cost containment benefits. However, linked cap-and-trade programs should be accompanied by reasonably comparable suites of complementary measures.

**a. Linkage Can Contain Cap-and-Trade Allowance Prices by Enhancing Liquidity.**

As recognized by the staff, linkage can enhance the liquidity of a market for allowances by “bringing more buyers and sellers into the market.” Staff Presentation, slide 10. The IETA recognized: “By broadening the scope of trading opportunities and improving the liquidity of allowance and credit markets, linking generally reduces the aggregate cost of meeting the linked systems’ collective emissions target.” IETA, p. 18. Additionally, “linkages can dampen the effects of unanticipated cost shocks in a given system by giving that system’s participants access to a broader pool of emission reduction opportunities.” *Id.*

These benefits of linkage are particularly important for California. The Scoping Plan adopts banking of allowances, thereby “encouraging early reductions and reducing market volatility,” but the Scoping Plan rejects any mechanisms beyond banking that could contain extreme allowance price aberrations. Scoping Plan, p. 30. Given that any market may be susceptible to collective lapses of judgment (the market for mortgage-backed securities) or manipulation (the 2000-2001 California energy market), SCPPA fears that the ARB and its staff may rue the day that they elected to reject mechanisms that could address severe allowance price

volatility through direct intervention. That rejection of intervention mechanisms highlights the importance of enhanced liquidity through linkage for the California program.

**b. Linked Systems Should Be Reasonably Comparable in Their Reliance on Complementary Measures.**

Linkage may provide cost containment benefits beyond enhanced liquidity if the systems are reasonably symmetric in their utilization of complementary measures. The IETA observes: “If systems establish a two-way link, allowances will be sold from the system with the lower allowance price to that with the higher price until prices converge.” IETA, p. ES-2. Simple put, “if System B’s pre-link allowance price is higher than System A’s allowance price, System B participants will bid credits away from System A.” *Id.*, p. 27. If two linked systems are symmetric, for example, in that all emissions abatement is driven by allowance prices without reliance on complementary measures, the system with the pre-link lower allowance price will be the system with the lower marginal abatement cost. The system with the higher allowance price will be the system with the higher marginal abatement cost. Upon linkage, as observed by the staff, “the allowance price rises in the program with [the pre-link] lower marginal abatement cost but declines in the program with [the pre-link] higher marginal abatement cost.” Staff Presentation, slide 14. Abatement costs will rise in the program that had the pre-link lower abatement costs, but that program should still benefit from linkage because “revenue from selling allowances more than offsets the increased abatement costs.” *Id.*, slide 15.

However, if two linked systems are asymmetrical in their reliance on complementary measures, linkage could disadvantage the system that relies on complementary measures. That system could have high marginal abatement costs but low allowance prices because the high-cost abatements were mandated. Upon selling allowances to the system that has higher allowance prices, the system that utilizes complementary measures would see allowance prices increase, depriving it of at least a portion of the benefit of that was supposed to flow from the adopting the complementary measures.

Thus, in fairness to jurisdictions such as California that have adopted complementary measures, there should be a reasonable symmetry in linked systems’ reliance on complementary measures. WCI has a committee on complementary measures, but to the extent to which the committee has been active, its activities have been non-public. Given that it has already made the decision to rely heavily on complementary measures, California should aggressively pursue WCI-wide adoption of complementary measures that are similar to California’s. To the extent that it desires to link with other programs beyond WCI, California should evaluate whether those other programs have adopted complementary measures that are approximately as robust as California to assure that linkage does not result in higher allowance prices without commensurate off-setting benefits for California.

**B. Linkage Affects the Ability of a Cap-and-Trade System to Provide a Firm Limit on California Emissions.**

According to the Scoping Plan, a primary objective to be achieved through adoption of a cap-and-trade program was “to provide a firm limit on emissions” in California to assure that the AB 32 emissions reduction goal was accomplished. Scoping Plan, p. 30. The ARB should reevaluate that objective in light of the ARB’s determination to link the California program with other programs, particularly the WCI. Upon linking the California program with other programs, California could become a net buyer of allowances from other jurisdictions. But then emissions may not be reduced as much as necessary to meet the AB 32 goal for limiting the “total greenhouse gas emissions *in the state*, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in California,” to the 1990 level by 2020. Cal. Pub. Util. Code §385059(m) (emphasis added). Some of the emissions reductions might be produced *outside of the state* with California buying allowances instead of reducing emissions.

At its August 24, 2009, meeting, the Economic and Technology Advancement Advisory Committee (“ETAAC”) worried about this problem in light of the advent of H.R. 2454, the American Climate and Energy Security Act (“ACES”) that passed the U.S. House of Representatives in June 2009 and is now before the U.S. Senate. The ETAAC considered the possibility that California would purchase *all* of its cap-and-trade allowances through purchases from out-of-state or obtain out-of-state offsets, in which case *none* of the 34 MMTCO<sub>2e</sub> emissions reductions that were to be obtained in California through the cap-and-trade program under the Scoping Plan would be realized through emission reductions in California. *See* Attachment A. The ETAAC surmised that, given the AB 32 mandate for emission reductions to occur *in California*, the ARB would have to develop an alternative approach to the cap-and-trade program to reduce emissions by 34 MMTCO<sub>2e</sub>. ARB could no longer rely on the cap-and-trade program for emission reductions *in California*. Presumably, the ETAAC would have the same concern if the California cap-and-trade program were linked to other jurisdictions.

The ETAAC’s worry about the impact of a federal cap-and-trade program on obtaining 34 MMTCO<sub>2e</sub> of emission reductions in California demonstrates that there is an inherent contradiction between utilizing a cap-and-trade program “to provide a firm limit on emissions” in California and linking the program to other cap-and-trade programs. Linkage to other programs vitiates the ability of the cap-and-trade program “to provide a firm limit on emissions” in California. Given the ARB’s commitment to linking the California program to other programs, the ARB can no longer contend that it should adopt a cap-and-trade program because it would “to provide a firm limit on emissions” in California. A more reasonably modest goal should be ascribed to the California cap-and-trade program.

**II. Beyond its WCI partners, to which programs should California consider linking?”**

Beyond the WCI, the prime candidate for linkage is California’s own LCFS program. If a bill establishing a federal cap-and-trade program is ultimately enacted, it would seem to be consistent with the ARB’s GHG emission reduction goals to subsume the California program in the federal program instead of somehow “linking” the programs.

**A. The California Cap-and-Trade Program Should Be Linked to the LCFS Program.**

The California cap-and-trade program should be linked to the LCFS program. Given that the ARB has already determined that cap-and-trade allowances will not be accepted as credits in the LCFS program, linking the cap-and-trade program to the LCFS program would be a unilateral link: “LCFS credits could meet cap-and-trade obligations but not vice versa.” Staff Presentation, slide 34. The ARB should link its cap-and-trade and LCFS programs to realize dual distributional benefits of linkage. As observed by the IETA, such a link “can only serve to reduce the cap-and-trade system’s allowance price, and increase the price that entities in the credit system receive for their credits.” IETA, p. ES-3. As a result of these dual distributional effects, the linkage “ought to elicit broad support.” *Id.*

Linking the cap-and-trade and LCFS programs would serve to reduce but not raise cap-and-trade allowance prices because, like offset credits, the LCFS credits would be the functional equivalent of expanding the amount of available allowances. As explained above, containing the cost of allowances is especially important to covered entities in the electric sector like the SCPA members that confront the potential double burden of the cost of buying allowances plus the cost of concrete emission reductions measures.

Linkage would also serve to support the price of LCFS credits because there would be an additional market for LCFS credits beyond the entities within the LCFS program. Maintaining price support for LCFS credits is especially important for electricity retail providers that participate in the LCFS program. The retail providers are potential providers of a low carbon fuel, electricity. As such, they should realize income from the sale of credits to program participants who need the credits to offset debits. This would help the retail providers recover some their costs of reducing transportation sector emissions through electrification of the transportation sector. If the carbon intensity of liquid transportation fuels were reduced to the LCFS target level by blending biofuels with fossil fuels, the market for the electric sector’s LCFS credits might collapse, depriving the electric sector participants of revenues that are needed to offset transportation sector electrification costs. Linking the cap-and-trade and LCFS programs would prevent the collapse of the price for LCFS credits.

**B. If a Bill Establishing a Federal Cap-and-Trade Program Is Enacted, the California Program Should Be Subsumed into the Federal Program.**

At this point in time, there is clear potential for federal enactment of legislation providing for a nationwide cap-and-trade program. It appears from staff comments that the ARB is actively contemplating the continuation of a separate California program even if there is a federal program. If that is the ARB’s objective, the ARB should articulate the reasons for the objective to the public.

Absent explanation from the ARB, it is difficult to discern the point of maintaining a state cap-and-trade program if there is a federal program with a nationwide cap on GHG emissions. Having a federal program would appear to make a separate state program futile. If a state

maintains its own program with caps that are less stringent than the federal cap, the state program would fail to generate emission reductions beyond the emission reductions generated by the federal program. Conversely, if a state maintains its own program with caps that are more stringent than the federal cap, the state program would still fail to generate emission reductions beyond those produced by the federal program. Insofar as there would be a nationwide cap, the nationwide emissions would not be reduced as a result of the state maintaining its own more stringent program. The maintenance of the more stringent state program would only result in that state contributing more to attaining the nationwide emission reduction goal with other states contributing less.

Worse yet, maintaining a state cap-and-trade program upon the advent of a federal program could be counterproductive. If the state were linked to jurisdictions outside the United States through, for example, the WCI, the state could sell allowances to the foreign jurisdictions, allowing those jurisdictions to maintain emissions at a level higher than would be permitted in the absence of linkage. The state would reduce its emissions to a lower level in order to obtain the allowances that would be sold to the foreign jurisdictions. However, the state's lowering of emissions would be offset by other states raising their emissions, given that all of the states would be constrained by the same nationwide cap. Thus, maintaining a state program that is linked to the programs of foreign jurisdictions as contemplated by the ARB could result in an *increase* in worldwide GHG emissions if there were a nationwide cap-and-trade program like the one proposed in ACES.

If the ARB seeks to maintain a state cap-and-trade program even after the establishment of a federal program, the ARB should explain its rationale to the public.

### **III. Conclusion.**

For the reasons discussed above, California should seek to link its cap-and-trade program with the programs of other jurisdictions in order to obtain the cost containment benefits that can be realized through linkage. However, given the robust suite of complementary measures that are being pursued by California, California should strive to link with jurisdictions that adopt reasonably similar suites of complementary measures to assure that the cost containment benefits of the complementary measures are not transferred to the other jurisdiction and lost to California. California should assess each proposed linkage to assure that the linkage will have a reasonable prospect for reducing the cost of the California program rather than increasing costs.

In order to reduce the cost of the California cap-and-trade program while maintaining the price of LCFS credits, the California LCFS program should be linked with the cap-and-trade program so that LCFS credits can be used as allowances.

If the ARB seeks to maintain a separate California program even if a federal program like ACES is adopted, the ARB should explain to the public its rationale for maintaining a separate California cap-and-trade program.

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SCPPA appreciates any attention the staff may give to these comments.

Respectfully submitted,

*/s/ Norman A. Pedersen*

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# **ATTACHMENT A**

**Table 2A - The Impact of ACES on AB 32 reductions**

AB 32			ACES
Category	Reductions (MMTs) in 2020	Details	Potential ACES increase/decrease in GHG reductions?
LDV GhG Standards	31.7	Pavley Standards	no impact
		Develop Pavley II LDV standards	no impact
Energy Efficiency	26.3	Building/appliance efficiency	Improvement due to DOE appliance standards, money from ACES for efficiency
		Comb. Heat and power +30K GWh	
		Solar Water Heating (AB 1470)	
Renewables Portfolio Standard	21.3	30% by 2020	
Low Carbon Fuel Standard	15		<i>Indirect land use prohibition at the federal level may hinder achieving reductions vs. "fuel shuffling"</i>
Regional Transport.-related GHG targets	5		
Vehicle Efficiency measures	4.5		
Goods Movement	3.7	Ship electrification	<i>benefits from confirmation of US EPA authority to regulate GHG from new heavy duty vehicles, locomotives, marine vessels</i>
		Efficiency improvements	
Million Solar Roofs	2.1		
Medium/Heavy duty vehicles	1.4	HDV GHG reduction - aerodynamics	<i>no authority provided to regulate in-use HDVs</i>
		M/HDV hybrid	
High Speed Rail	1		
Industrial (under cap and trade)	0.3	Refinery	
		EE and Co-benefits audits	
Additional need	<b>34.4</b>		Decrease of 34.4 due to moratorium
High GWP gas measures	20.2		
Sustainable Forests	5		
Industrial (not under cap)	1.1	Oil/gas extraction and transmission	
Recycling and Waste	1	landfill methane capture	

Current Scoping Plan Total	174
Decrease from ACES	-34.4
Quantifiable Increase due to ACES money for energy efficiency from 2012-2020 <sup>1</sup>	7.3
<b>TOTAL Estimated GHG Reductions with AB32 and ACES (2020)</b>	<b>146.9</b>

GHG Reduction Shortfall	27.1		
Additional ACES Allocation Money available for GHG Reductions from 2012-2020:	\$4,513,911,915	to recoup shortfall of GHG reductions using ACES money, CA will have to reduce from 2012-2020 at the rate of <sup>2</sup> :	\$166 per ton CO2e, permanent reductions

**Notes:**

- <sup>1</sup> This number is from electric utility data, giving us a conversion factor of tons CO2e/\$. For other allocations in ACES, this conversion factor is not easily attainable OR the sector is too broad to give specific estimates.
- <sup>2</sup> For the allocations to CA or LDCs within CA which we cannot specifically identify a conversion factor of CO2e reduced/\$, we instead give the maximum feasible price per ton to achieve AB32 targets using ACES allowance revenues.

**TABLE 2B - ACES Funding for AB32 Categories**

AB 32			
Category	Projected Reductions (MMTs)	Details	ACES funds supplement AB32 measures: high-low (\$ tbd by our analysis)
			ACES Funding mechanism
LDV GhG Standards	31.7	Pavley Standards	Cannot use SEED Funds for transportation efficiency
		Develop Pavley II LDV standards	Cannot use SEED Funds for transportation efficiency; vehicle electrification funding could contribute especially over longer-term of Pavley II standard
Energy Efficiency	26.3	Building/appliance efficiency	SEED Funds, 32% allowances to utilities through 2025
		Comb. Heat and power +30K GWh	
		Solar Water Heating (AB 1470)	
Renewables Portfolio Standard	21.3	30% by 2020	SEED Funds, 32% allowances to utilities through 2025
Low Carbon Fuel Standard	15		
Regional Transport.-related GHG targets	5		Cannot use SEED Funds to meet this goal except 10% of SEED funding could be used for mass transit capital spending
Vehicle Efficiency measures	4.5		Cannot use SEED Funds for transportation efficiency to meet this goal
Goods Movement	3.7	Ship electrification	Cannot use SEED Funds for transportation efficiency to meet this goal
		Efficiency improvements	
Million Solar Roofs	2.1		SEED Funds
Medium/Heavy duty vehicles	1.4	HDV GHG reduction - aerodynamics	Cannot use SEED Funds for transportation efficiency to meet this goal
		M/HDV hybrid	Cannot use SEED Funds for transportation efficiency to meet this goal
High Speed Rail	1		Cannot use SEED Funds to meet this goal except 10% of SEED funding could be used for mass transit capital spending and include high speed rail

<b>Industrial (under cap and trade)</b>	0.3	Refinery		2% allowances to refiners but no requirement to use for emission reductions; SEED funds could be applied in part to industrial customers
		EE and Co-benefits audits		
<b>Additional need</b>	<b>34.4</b>			
<b>High GWP gas measures</b>	20.2			
<b>Sustainable Forests</b>	<b>5</b>			domestic adaptation 2012-21 2%
<b>Industrial (not under cap)</b>	1.1	Oil/gas extraction and transmission		
<b>Recycling and Waste</b>	1	landfill methane capture		SEED Funds
<b>State Gov't ops</b>	TBD			SEED Funds
<b>Local gov't ops</b>	TBD			SEED Funds
<b>Green buildings</b>	26			only for EE
<b>Recycling and Waste</b>	9	mandatory comm. Recycling		
		other		