THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

August 13, 2008

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Dear Ms. Adair and Mr. Owens:

Thank you for the opportunity to comment on the important issue of the allocation of allowances. These comments apply also to the use of carbon fee or carbon tax revenues, to the extent that jurisdictions in the Western Climate Initiative (WCI) choose these other approaches.

Summary

First, we recommend establishing a WCI regional policy that all (with the possibility of limited exceptions) allowances in every state/province will be auctioned for the primary purpose of investing in reductions of greenhouse gases (and co-pollutants). Second, we recommend explicitly adding transportation opportunities to the categories under consideration for these investments. The WCI should set an initial emission reduction investment program goal of 35 Million metric tons per year Carbon Dioxide equivalent ($MMTPYCO_2(eq)$) by 2020 for the transportation sector categories listed in Attachment A to this letter; and expand this goal once additional potential opportunities are quantified.

Discussion: Regional Auctions and Investments

Allocation of the value of allowances is a critical opportunity to reduce greenhouse gas emissions. The potential auction revenues will greatly exceed the amount of money spent to comply with the cap for the foreseeable future. For instance, if other WCI participants follow the California Air Resources Board's proposed cap & trade design, ten dollars or more in allowance value will be created for every dollar spent on emission reductions to comply with the cap in 2020[1].

[1] CARB will auction and/or distribute for free 365 MMTCO2(eq) of allowances in 2020, which at $30 per ton would be worth over $10 billion dollars. CARB anticipates that 35 MMTCO2(eq) tons will be reduced or offset in 2020 (draft GHG scoping plan Appendix C-14). If companies could buy a credit or offset for $30 per ton, they will pay up to a maximum $30 per ton for on-site reductions, for a total of $1 billion or less spent for reductions. In years when less than a 9% reduction is required under the cap, less would be spent on emission reductions to comply with the cap. (See draft GHG scoping plan Appendix C-181 for the range of carbon prices under evaluation.)

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A coordinated regional WCI auction and investment program should be used to maximize the benefits of emission reductions for the following reasons (note that the investment program could be implemented by individual states/provinces and/or other entities once investment program goals, criteria, and funding levels are established):

1) Coordinated reductions will reduce costs for each WCI participant due to administrative efficiency, economies of scale, and shared lessons learned. Reduced costs will make emission reductions more attractive outside of WCI, while creating a stronger precedent for wider adoption. Broader markets will also encourage development of new low and zero greenhouse gas emission technologies.

2) These investments will not only provide lower energy and fuel costs (through increased efficiency) to the consumers that would primarily bear the cost of a cap & trade system, but will also reduce regional demand and prices for allowances to the extent that they reduce emissions in the capped sectors.

3) Reductions of co-pollutants that occur in one state/province will benefit neighboring WCI participants due to atmospheric transport of co-pollutant emissions. These co-pollutants typically include fine particulates, ozone precursors, and air toxics. In addition, actions funded in one state/province (electrical energy efficiency, reduced transportation fuel usage) often contribute to reductions in upstream emissions in other states/provinces (power plants, petroleum refining and production).

In addition to achieving emission reductions, auctioning allowances for public policy benefits is more equitable than free allocations to regulated entities. Free allocation of allowances led to windfall profits to the UK electricity sector of nearly $1.6 billion under the European Union Emissions Trading Scheme [2]. Windfall profits at the expense of consumers can undercut public support for greenhouse gas reduction programs. In addition, windfall profits given to industries in states/provinces with free allocations could be used to undercut businesses in other states/provinces; or to undercut innovative new low carbon fuel or energy providers before they can get a toehold in the market. Policy-makers can instead help companies (especially those facing competitive pressures and/or unable to pass through costs) transition to low and zero carbon alternatives with targeted assistance. Equity concerns for low-income consumers and other public policy goals can also be addressed while also investing in GHG reductions.

Discussion: Transport Sector GHG Goals for Emission Reduction Investments

Transportation sources are very well suited for a WCI regional emissions reduction investment program, as by their very nature they tend to operate among different states/provinces. Thus, the greenhouse gas and co-pollutant reductions achieved by vehicles registered in one state/province are likely to be shared as vehicles are operated and/or sold among different jurisdictions over their lifetimes.

For the transportation sector, we recommend that the WCI set a preliminary WCI regional investment target of 35 MMTCO2(eq) or greater reductions per year by 2020 in the transport

[2] California Market Advisory Committee report page 105. Profit-taking by heavily regulated utilities may be subject to oversight by utility regulatory agencies.

sector for the categories quantified below in Attachment A. This target is estimated based on a total potential of greater than 70 MMTCO2(eq) per year (assuming that Pavley standards are adopted in all WCI jurisdiction), and should be expanded as information is available regarding measures in Attachment A that we have not quantified. Investments in these reductions should be explicitly listed alongside investments under consideration in the electricity, agriculture, and forestry sectors listed in sub-section 8.2 of the WCI cap & trade design paper.

In summary, we believe that allowance auctions and a WCI regional GHG reduction investment program will maximize emission reductions and improve equity. If you have any questions, please contact me, or you or your staff may contact Ed Pike of my staff at pike.ed@theicct.org, or (415) 399-9019.

Sincerely,

Dr. Alan Lloyd
President, International Council on Clean Transportation

Attachment A: Transportation Sector Emission Reduction Scenarios

ICCT has estimated the technical potential for emission reductions in a number of categories. We suggest an initial goal of 50% implementation of the total potential of these measures, based on potential obstacles to implementation that may vary based on the specific opportunity. There are a number of air quality incentive funds (California Carl Moyer funds, Bay Area Air Quality Management Transportation Fund for Clean Air, and others) that could serve as a model for further refinement of estimated implementation rates.

Summary Table of WCI Regional Investment Opportunities in Transportation Sector

Investment Category	Estimated Potential Reductions by 2020	Co-Pollutants Reduced in WCI Region
Passenger Vehicles – driver training, education, and on-board fuel economy displays	30 MMTPY CO2(eq)	Ozone Precursors, Fine Particulates, Air Toxics, Others
Passenger Vehicles – reduced vehicle miles: pay as you drive incentives, congestion charging incentives	30 MMTPY CO2(eq)	Ozone Precursors, Fine Particulates, Air Toxics, Others
Public transit, cycling, pedestrian improvements	*Not quantified*	Ozone Precursors, Fine Particulates, Air Toxics, Others
Passenger vehicle technology development incentives	*Not quantified*	Ozone Precursors, Fine Particulates, Air Toxics, Others
Heavy Duty Trucking – retrofits	5 MMTPY CO2(eq)	Diesel Particulates, Nitrogen Oxides, others
Heavy Duty Trucking – future vehicle turn-over incentives	5 MMTPY CO2(eq)	Diesel Particulates, Nitrogen Oxides, others
Marine Vessel	*Not quantified*	Diesel Particulates, Nitrogen Oxides, others
Locomotives	*Not quantified*	Diesel Particulates, Nitrogen Oxides, others
Hybrid medium duty trucks	*Not quantified*	Diesel Particulates, Nitrogen Oxides, others
Electrification at ports, truck stops, and airports	*Not quantified*	Diesel Particulates, Nitrogen Oxides, others
Hybrid transit buses	*Not quantified*	Diesel Particulates, Nitrogen Oxides, others
Aviation & airline operations	*Not quantified*	Ozone Precursors, Fine Particulates, Air Toxics, Others

Passenger Vehicles:
We have examined two categories of opportunities. The first is reducing per-mile emissions from existing vehicles through driver education, training, and on-board fuel economy display retrofits. We estimate that the reported fuel economy improvement of on-board fuel displays would reduce emissions by 30 mmtpy CO2(eq). We did not estimate further reductions due to driver education/training because it may overlap with this value.[3] This may be a conservative estimate.

The second is providing incentives to reduce vehicle miles traveled. There are a number of opportunities, such as incentives for pilot pay-as-you-drive insurance programs, funding for technical studies of congestion charging, and funding for transit, bicycling, and pedestrian improvements. We estimate a total potential of greater than 30 million tons[4] from the reductions achievable through PAYD insurance (as estimated by the Brookings Institute for US WCI states, and extrapolated to Canadian provinces[5]), and congestion charging in California (as estimated by an ICCT-funded study). *This number is conservative as it does not include transit improvements.* This value is likely to also be conservative because it does not account for potential congestion charging implementation in other states. Estimating transit improvement contributions to investment goals for WCI regional transportation sector emission reductions may require consideration of state/province-specific circumstances.

Heavy Duty trucking:
Retrofits: EPA estimates a 17% potential for emission reductions from existing "Smartway" measures.[6] In California and other state/provinces with regulatory measures, incentive payments and short-term loans can achieve early compliance and/or beyond compliance emission reductions. They can also achieve reductions in states/provinces that do not adopt regulatory measures. The total potential across WCI jurisdictions is estimated at approximately 5 MMTPYCO2(eq) by 2020 beyond what would otherwise occur. This estimate conservatively assumes that Smartway regulatory measures in California will require about half this level of reductions for all heavy duty vehicle miles by 2020; and that a similar level of aerodynamic efficiency will become standard for new vehicles in all WCI states and Canadian provinces by MY 2017 (a potential regulatory phase-in date for DOT fuel efficiency standards) in the absence of any incentives. In the near term, discounted loans/incentive payments for early compliance with "Smartway" regulations in California and other jurisdictions that adopt this regulation can also achieve additional reductions.

Replacements: Initial results of an ICCT/NESCAFF study indicate that a 35% improvement can be achieved by 2016, for a total technical potential from early replacements of 5

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[3] "Qualitative Survey on Fuel Economy Devices", June 2002, page 9, CE&M research report 2002R-005 / VVR-004, ISSN 1568-4652, Available at www.ecodrive.org. Total is rounded down to be conservative.
[4] Note that 100% implementation of reduced per mile emissions would reduce the effectiveness of VMT reductions, which is accounted for in the implementation factor.
[5] Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity , Bordoff and Noel, page 26, available at http://www.brookings.edu/papers/2008/~/media/Files/rc/papers/2008/07_payd_bordoffnoel/07_payd_bordoffnoel.pdf
[6] Includes auxiliary power unit, bunk heater, wheels, trailer aerodynamics, tire inflation, and diesel particulate filter. Accessed 8-11-08 at http://www.epa.gov/otaq/smartway/transport/calculators/index.htm

MMTPYCO2(eq). This estimate excludes natural turn-over after 2016 since some or all of the 35% improvement may be mandated by regulations by that time.[7] There are several studies estimating that heavy duty truck/vehicle combinations can achieve 35%-50% improvement in GHG emissions[8].

Additional Opportunities:

Several additional categories of opportunities should be considered for incentive funding, which include but are not necessarily limited those listed below. The total potential for emission reductions from these projects was not quantified, but is likely to be cumulatively quite significant.

- Electrification at ports, truck stops, and airports
- Passenger vehicle technology development incentives
- Aviation & airline operations
- Marine vessels
- Locomotives
- Hybrid transit buses
- Hybrid medium duty trucks

[7] This value is based on assumption that newer truck cover 80,000 miles per year, the average truck covers 40,000 miles per year, and that newer trucks from natural turn-over represent 20% of the fleet, and thus newer trucks represent 40% of truck miles traveled (i.e. each newer truck travels twice the miles of the average truck).

[8] Vyas, Saricks and Stodolsky, *The Potential Effect of Future Energy-Efficiency and Emissions-Improving Technologies on Fuel Consumption of Heavy Trucks*, Argonne National Laboratory, August 2002; Langer, *Energy Savings Through Increased Fuel Economy for Heavy-Duty Trucks*, National Commission on Energy Policy, February 2004.

Attachment B: Baseline emission inventories & assumptions

	Transportation Sector Estimated Emissions – 2004 MMTPYCO2(eq)
US States Participating in WCI	320
Canadian Provinces Participating in WCI	146
International WCI Total	466

US states in the WCI report a total of approximately 320 MMTPYCO2(eq) transportation emissions in 2004, based on inventory data contained in state plans available via the WCI website. Where data was not reported for 2004, 2004 data was extrapolated by ICCT.

Assuming that WCI Canadian provinces account for a total share of national transportation emissions equal to their population (approximately 77%), total transportation emissions are equal to or greater than 146 MMTPYCO2(eq) for all Canadian provinces participating in WCI[9]. Thus, total transportation sector emissions among WCI participants exceeds 466 mmtpyCO2(eq) as of 2004.

Total WCI passenger vehicle emissions are estimated at 300 MMTPYCO2(eq) or greater. This estimate is based on an assumption that passenger vehicles account for roughly two-thirds of all transportation emissions, which is likely to be a conservative estimate (the California Air Resources Board estimates 74% in California). Passenger vehicle emissions for 2020 were estimated to be about the same as 2004 levels, based on the assumption that Pavley I & II and a low-carbon fuel standard or equivalent measures would return baseline emission to 2004 levels (CARB draft GHG scoping plan p.C-40). We strongly recommend that all WCI jurisdictions adopt both the Pavley I and II standards.

Heavy-duty vehicle 2004 emissions were estimated at 20% of transportation sector emissions based on California and Canadian national inventories. This rate was scaled up at a 1% annual rate to 2020 levels, and then rounded down by about 5% to 100 MMTPYCO2(eq) to be conservative and account for potential market-driven deployment of some aerodynamic efficiency measures. Half, or 50 MMTPYCO2(eq) were assumed to be Class 7 and Class 8 trucks, based on an EMFAC2007 modeling run for 2004, and the other half was assumed to be emissions from other categories of heavy-duty trucks.

[9] Inventory from "Canada's 2005 Greenhouse Gas Inventory A Summary of Trends", accessed via Environment Canada website 8-11-08. Pipeline emissions were excluded. Population data from Statistics Canada Table 1-1: "Quarterly population estimates, national perspective"