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The Honorable John D. Dingell, Chairman
U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515-6115

(Relayed via email to chris.treanor@mail.house.gov.)

Re: Your letter of February 27, 2007 to NGOs requesting guidance on climate policy
http://energycommerce.house.gov/Press_110/110nr9.shtml

Dear Representative Dingell,

I am not affiliated with any of the NGO groups identified in your February 27 letter, but I have some perspectives that could be helpful, based on my familiarity with California's legislation and regulations related to climate policy.

Regarding your first query ("… which issues should be addressed in the Committee's legislation …"), the Committee should consider alternatives to cap and trade, and before focusing on detailed regulatory design issues such as those enumerated in your second query, the Committee should articulate broad policy objectives and priorities and should identify regulatory options that might be best suited to those goals.

The fundamental policy objective of cap and trade is to guarantee achievement of an environmental sustainability goal at minimum cost. But there is no guarantee that the cost, though minimum, will be within limits of cost acceptability; and any measures that are taken to guarantee cost acceptability (e.g., by making caps more lenient or by using a safety valve) will forfeit the environmental guarantee. A cap-and-trade system can be an effective regulatory instrument if environmental objectives take precedence over cost acceptability; but more typically, cost concerns take precedence and the system consequently functions to merely limit emissions to an unsustainable cap level irrespective of whether significantly greater emission reductions would be feasible and cost-effective. (This is true with either a fixed cap or a schedule of declining caps. In either case the cap is – or caps are – based on predictive assumptions about future economic and technology conditions, which must be excessively biased in favor of cost conservatism to ensure cost acceptability.)

An alternative policy approach, which would be more appropriate when cost acceptability is paramount, is to provide direct regulatory control over costs and to

incentivize maximum feasible emissions reduction within defined limits of "cost effectiveness". In the context of cap and trade, cost effectiveness can be controlled by employing a safety valve system in which the regulatory agency offers emission allowances, in excess of an established cap limit, at a predetermined limit price. Noncompliance fines function effectively as a safety valve, and a conventional carbon tax is also essentially a fixed-price sale of allowances. However, these mechanisms forfeit a primary advantage of cap and trade, revenue neutrality, which is key to cost minimization. Under a cap and trade system with free permit allocation, better-performing firms profit from the sale of excess allowances, and worse-performing firms need only pay for the portion of their emissions in excess of their allotted quota. This contrasts sharply with a carbon tax, which imposes positive costs on all regulated entities (unless they have zero or negative emissions). In terms of its distributional characteristics a carbon tax would be similar to cap-and-trade system with 100% of the allowances auctioned, and would be no more politically palatable or economically viable than such a system.

Tax-type instruments can, however, be constructed to be revenue-neutral within the regulated industry, as is cap and trade with free allocation. For example, Sweden's Acid Rain program uses such a system for regulating stationary-source $NO_x$ emissions. The program was enacted in 1990 with the intention of achieving a 35% reduction in $NO_x$ emissions within five years, but it inadvertently succeeded in motivating a 60% reduction in specific emissions from regulated entities within that time frame. (Even with demand growth the reduction was 50%.) And it did so by using a regulatory mechanism that imposes no caps, standards or timetables, and is revenue neutral within the regulated industry. (Moreover, the regulation-induced technology costs for $NO_x$ reduction have been estimated at only $0.0004/kWh.)

The program is basically structured as a refunded tax: An emission tax is applied to $NO_x$ emissions from power plants, and the tax revenue is refunded to tax-paying firms in proportion to power generation. Firms with worse-than-average emission performance (as measured by $NO_x$ emissions per unit power output) incur a positive net cost from the program, while those with better-than-average performance derive net income. The refunded tax revenue flows operate much like trading transactions in an emission trading system, but without the price volatility and transaction costs that typify market trading systems.

A refunded tax system is similar to emission trading in terms of its distributional characteristics, but differs fundamentally in how it employs market mechanisms. In a refunded tax system, a firm's improved emission performance will tend to increase the competitive pressure on other firms to also reduce their emissions (via price competition); whereas with emission trading, the better-performing firms' actions enable other firms to *increase* their emissions to the maximum extent allowed by an emission standard or cap even if significantly greater emission reductions would be feasible and cost-effective. For example, had the Swedish $NO_x$ program been instituted as a cap-and-trade system, it would not have motivated emission reductions greater than the 35% target. Similarly, the U. S. Acid Rain program's cap-and-trade system for $SO_2$ has, since its inception, focused

regulatory incentives on cost reduction even though costs have turned out be far less, and benefits (particularly for human health) vastly greater, than originally anticipated when the cap was established.

Generalizing to climate policy, cap and trade cannot be expected to achieve maximum feasible and cost-effective reductions of GHG emissions because that is simply not what such policy instruments are designed or intended to do. The priority objective of cap and trade is cost reduction, not emissions reduction, under the implicit premise that emission caps are sufficient in relation environmental sustainability goals. But in practice, caps (whether fixed or declining) must be set so far above the sustainable level that feasibility and cost-effectiveness are guaranteed under the most cost-conservative predictive assumptions.

The Energy and Commerce Committee should give consideration to regulatory instruments such as the Swedish $NO_x$ system in terms of their compatibility with policy objectives and whether this approach represents a viable regulatory model for the U.S. utility power sector. Another similar policy, for the transportation sector, would be vehicle "feebates", which could provide an alternative (or adjunct) to CAFE-type fuel economy standards. Similar policies could also be used, for example, to create market incentives for energy-efficient appliances or low-carbon fuels. (Several references relating to these policy options are listed below.)

Sincerely,

Kenneth C. Johnson

References:

Ågren, C., 2000. Nitrogen oxides: emissions charge works well. Acid News 2, 1–4
http://www.acidrain.org/pages/publications/acidnews/2000/AN2-00.pdf

Johnson, K., 2006. Refunded emission taxes: A resolution to the cap-versus-tax dilemma for greenhouse gas regulation. Energy Policy 35 (5), 3115-3118.
http://dx.doi.org/10.1016/j.enpol.2006.10.020

Letter to the California State Assembly Committee on Transportation, March 13, 2007
Re:
AB 493 (Ruskin, 2007), Motor vehicle greenhouse gas emissions: incentive program.
AB 32 (Nunez and Pavley, 2006), California Global Warming Solutions Act of 2006.
AB 1493 (Pavley, 2002), Vehicular emissions: greenhouse gases.
http://ssrn.com/abstract=969444