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Role of Municipal and State Governments In Greenhouse Gas Emissions Trading

by Douglas Hill

I. INTRODUCTION

In the current debate on defining a domestic greenhouse gas (GHG) emissions trading program, the role of municipal and state governments is all but ignored. The focus is principally on trading by large corporations and other means of controlling emissions from major sectors of the economy. With other air pollutants, however, state governments are instrumental in implementing and enforcing federal regulations. Many municipalities are themselves responsible for emissions exceeding those of many corporations, and through building codes, traffic controls, and zoning regulations they are in a position to affect emissions even more.

Many individual states and localities have already acted to reduce greenhouse gas emissions. At the state level, 29 states have developed a state-level GHG inventory, and 20 states have developed or committed to develop a state-level action plan to reduce GHG emissions. More than 20 states and more than 80 cities and counties have joined *Rebuild America*, a program that emphasizes energy efficiency improvements, thus reducing greenhouse gas emissions. Over 30 state government agencies and more than 120 local governments have joined EPA's *Green Lights* program for more efficient lighting, thus reducing greenhouse gas emissions.¹

The *Cities for Climate Change* program of the *International Council for Local Environmental Initiatives* (ICLEI), which is a joint effort among cities (54 of them in the U.S.), highlights both the international collaboration needed to combat global climate change as well as the key role local government can

take in implementing solutions. One example comes from the Province of Ontario. With ICLEI's participation, the Region of Waterloo and an energy company have agreed to sell emission reduction credits to Ontario Hydro generated from a gas power plant at the region's landfill. This is the first municipal government to negotiate such a deal in Canada's Pilot Emission Reduction Trading (PERT) program.²

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Richard Michael Price and Randall Kelly, "Federal 25-City Lead Paint Enforcement Initiative Begins," *New York Law Journal*, Nov. 29, 1999, at R2.

Howard Schechter and Eric M. Jaffe, "New Lead Paint Requirements in Place," *New York Law Journal*, Nov. 29, 1999, at R1.

Sierra Club, "Permitting Disaster in New York and New Jersey: How Wetland Destruction Puts Our Families at Risk" (1999) (report available for \$10 from Sierra Club at 214 N. Henry St., Suite 203, Madison WI 53703).

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What seems to be the only U.S. federal document defining the entities that might participate in emissions trading is Senate Bill S.547, *Credit for Voluntary Reductions Act*, introduced March 4, 1999. The bill defines a "participant" as a person that enters into an early action agreement with the United States under this Act. The term "person" includes a governmental entity.

This article introduces some of the possible roles for municipalities and state governments in GHG emissions trading. No attempt is made to identify environmental or economic positions on these possible roles, nor to identify the strength and weaknesses of these positions, nor to make recommendations.

II. VARIOUS REGULATORY SCHEMES

Recent papers that discuss possible emissions trading regimes generally list several alternatives. A basic decision is whether the accounting of emissions should be made "upstream" of the point of emissions (e.g., fuel in a pipeline prior to being burned), or at the traditional point of emissions, "downstream." In the upstream approach, only sources of fossil fuels would trade emissions rights. This would raise the price of fossil fuels throughout the economy, and no additional trading measures would be needed to reduce emissions, either by municipalities or states or anyone else. The upstream approach could provide nearly 100 percent coverage of GHG emissions and would have the least administrative costs. However, it is considered the least politically acceptable of the alternative approaches because it looks like a carbon tax.

A pure downstream approach is not feasible because there are millions of points of emissions. Therefore, the discussion is focused on hybrids in which major emitters are permitted to trade, accounting for about half of U.S. emissions, and other schemes are devised for the rest. In the remainder of this paper it is assumed that a hybrid approach will be taken.

A distinction is made between trading emission *allowances* and emission *credits*. Allowances are permits to emit certain quantities initially distributed by the controlling authority. Credits, or Emission Reduction Credits (ERC), are reductions

in emissions from some accepted baseline that may be created by entities outside the community of allowance holders.³ Credits may be created by reduction, sequestration or avoidance of emissions. Participants in an open credit trading system can create, buy and sell credits. Participants in an allowance trading system also can buy and sell allowances, and buy credits. However, they cannot create credits. If credits are certified by the regulatory authority or are insured, they should have the same value as allowances.⁴

Clearly, the possible roles for municipalities and states will depend upon the regulatory regime established. On the other hand, choosing the best regulatory regime should take into consideration up front the most suitable roles for municipalities and states. For this article, it is possible only to list possible roles for municipalities and states in some regulatory scheme.

III. POSSIBLE ROLES FOR MUNICIPALITIES AND STATES

The following is a fairly comprehensive list, culled from the current literature, of the different roles participants can play in GHG emissions trading. Generally, the roles are not mutually exclusive. The list includes a judgment as to whether municipalities (M), states (S), or neither would or could play each role. Where appropriate, roles for municipalities and states that would be equivalent to those for industry are identified (see medium fossil fuel consumers, below).

M S Role

- * Authority to establish required reductions in GHG emissions
- * * Authority to enforce regulations for GHG emissions
- * * Regulator of energy use, e.g. through building codes, traffic controls
- * * Monitor of emissions⁵
- * Regulator of emissions trading, with or without its own emissions budget
- * Registry to track ownership of allowances and credits, with or without certifying them
- * Regional emissions bank to save credits and allowances, and possibly other banking activities such as leasing credits to new sources
- * Regional custodian that allocates allowances, either gratis or by auction
- * Aggregator or broker for emission credits achieved at the household or individual small business level
- Market institutions, such as brokers and possibly broker regulators, rating agencies, insurers of credits, possibly a centralized trading institution
- Producers or importers of fossil fuels
- * * Sources of greenhouse gases other than from fossil fuel combustion, such as landfills, cement and ammonia manufacturing, users of fertilizers

Large fossil fuel processors, such as electric utilities, natural gas processing plants, oil and natural gas pipelines

- * * Large fossil fuel users, such as heavy industries, airlines, shipping and railways
- * Medium fossil fuel consumers, smaller than electric utilities and heavy industries, but larger than some threshold value for emissions trading (say, 100kt GHG per year)⁶
- Corporate fossil fuel consumers, too small to participate in emission trading
- Individual fossil fuel consumers, such as households, automobile owners
- * * Parties that build or manufacture structures or equipment affected by efficiency standards, e.g., buildings or appliances
- * * Parties using structures or equipment affected by efficiency standards
- * * Creator of credits through emission reduction, sequestration or avoidance
- * * Participant in an open credit trading system who can buy or sell credits
- * * Participant in an allowance trading system who can buy or sell allowances and buy credits
- * * Activist in affecting emission trading system design, for example, to promote equity in the distribution of costs among sectors of society⁷
- * * Promoter of policies needed to complement a domestic emissions trading system for greenhouse gases, such as planning land use and transportation infrastructure

IV. THE ROLE OF MUNICIPALITIES

Among 26 candidate regulatory schemes⁸ identified or referenced by speakers for the U.S. and Canada at a recent conference on domestic emissions trading, only one specifically identified a role for municipalities. It was identified by the *Emissions Trading Multistakeholder Expert Group* of Canada's *National Round Table on the Environment and the Economy* (NRTEE), and described as follows:

This option also establishes a cap and trade system for CO₂ emissions by fossil fuel users, but extends the range of sources covered. As in [three other] options, electric utilities, large industrial sources, large airlines and railways would participate directly. The federal and provincial governments would participate directly as managers of government buildings. *Municipalities would have caps covering the emissions from residential and commercial buildings and urban transportation.*

This option would probably involve more participants than [the other three], but it covers residential and commercial buildings, which are not captured in those options. *To keep the number of participants in this option manageable, small municipalities would probably be excluded.* Electric and gas

utilities, or other groups, could earn credits by implementing energy efficiency and fuel switching options in residential, commercial and small industrial buildings in municipalities that are not part of the trading program.

As with the other options . . . sources of other greenhouse gas emissions amenable to allowance trading also participate in the trading program, and the cap established for participants could be augmented through international trade or purchases of credits from specified domestic sources.⁹

This option is on the NRTEE short list of six recommended for further analysis.

Should the international emissions trading system evolve in a way that permits substantial participation by sub-national "legal entities," local governments will be in a unique position to act as aggregators and brokers for emission reductions that are being achieved at the household and individual business level. For such reasons, according to ICLEI, local governments have an enormous stake in the evolution of the international emissions trading principles, modalities, rules and guidelines. The success of their local greenhouse gas and air quality mitigation measures may be considerably amplified by trading, even allowing the revenue generated to flow to individual households and businesses.¹⁰

For the near term, it has been recommended that municipalities should:

- Participate in the market design and rule-making forums to influence the design of the municipal quantification and verification system. They should aim to ensure that the market rules are set up in a way that encourages the participation of local governments and validates energy conservation, pollution prevention, and waste recycling as qualifying for credits.
- Establish a quantification and verification protocol appropriate to municipal emission reduction activities that is sufficiently rigorous to satisfy the criteria of buyers in the carbon trading market.
- Promote the formation of an institution to be an aggregator and banker for local government emission credits, for example, through ICLEI. This institution would, for example:
 - Establish standardized conventions and protocols for the quantification and verification of GHG emission reductions achieved by local governments;
 - Aggregate and bank verified emission reductions and broker their sale into the carbon trading market;
 - Design and set up the verification, banking and brokerage functions;
 - Participate in market design and rule-making forums on carbon trading to ensure that the interests of local governments are represented; and

- Participate in early pilot trading to test the practicality of proposed trading rules, contract language, quantification and verification protocols, brokerage fees, etc.¹¹

According to NRTEE, other actions by municipal governments will be needed to complement emissions trading. Policies will be required to remove barriers to the implementation of greenhouse gas emission reduction measures, and to ensure that sources outside the program also take steps to reduce emissions:

The [emissions trading] market can fail because of the huge discrepancy between market evaluation of the value of future emission reductions and social evaluation of the value of future emission reductions. This can only be addressed in an emissions trading system if the *municipal governments* responsible for urban infrastructure are also held responsible for emissions generated by transportation within their jurisdiction. . . . However, even if transportation emissions are addressed by the trading system, the market signal sent by the emissions trading system will not be enough to have a significant influence on municipal governments' infrastructure planning. As a result, the direct incorporation of climate change considerations into planning processes such as community energy management, environmental assessment, regional growth planning and transportation planning is a useful complement to most emissions trading systems.¹²

V. THE ROLE OF STATES

Many states emit carbon dioxide in amounts comparable to some of the highest emitting countries in the world. The principal federal guidelines for the role of states are set forth in *States Guidance Document: Policy Planning to Reduce Greenhouse Gas Emissions*. The most recent edition discusses emissions trading briefly, but makes no suggestion that states as such would be participants in such a program.

Nevertheless, if the adverse effects of climate change are to be avoided, according to the *States Guidance Document*, states will need to take an active and immediate role in addressing greenhouse gas emissions. There are several reasons why states may wish to take definitive action to reduce greenhouse gas emissions:

- States retain much of the policy jurisdiction over emission sources.
- The Climate Change Action Plan of the federal government creates new opportunities for states.
- States have the capacity for enacting "low risk" policies to address climate change.
- States will feel the impact of climate change and will likely be called upon to address them.
- States are uniquely positioned to reduce emissions and, in doing so, to encourage the appropriate national and international responses.¹³

Criteria pollutant emissions (i.e., pollutants for which the U.S. EPA has established ambient air standards) are controlled

through the Clean Air Act which is implemented at the state level through State Implementation Plans.¹⁴ State-enforced controls affect the level of these emissions and may therefore establish the baseline from which reductions in greenhouse gases are calculated. Forms of tradable permit systems have been utilized in the U.S. to control non-greenhouse pollutants including sulfur dioxide and lead.¹⁵

These programs provide broad incentives to all polluters to reduce emissions and improve their production processes and could conceivably be applied to carbon dioxide emissions as well, either domestically or internationally, according to the *States Guidance Document*. It urges that states support emissions trading programs as a way to promote greenhouse gas reductions within the context of electricity deregulation. However, "tradable permit programs may not be feasible or desirable at the state level because of complications arising from complex cross-boundary, administrative, and enforcement issues."¹⁶ This judgment of trading within states would not seem to rule out the states themselves being participants in national emissions trading.

On the state level, New Jersey is developing a greenhouse gas emissions trading bank by (i) designing a banking and trading system, and (ii) establishing protocols for quantifying credits.¹⁷ The purpose is to quantify and credit voluntary greenhouse gas emissions reduction by companies within the state, and to cooperate with other governmental entities in doing so.¹⁸

Such state actions can serve to:

- Promote voluntary actions to reduce greenhouse gas emissions.
- Develop monitoring capability needed to measure and validate emission reductions.
- Link emissions trading with state action plans to reduce greenhouse gas emissions.
- Prepare for a role as a future regulator.
- Participate in pilot programs.
- Gain experience in negotiating credit creation criteria and the review or approval process with program participants.
- Develop a position on regional or state sub-groups that could operate within a national structure for emissions trading.
- Provide or contract for a registry to track credits created, changes in ownership, and uses of credit.
- Retire a percentage of emission reduction credits as a donation to "environmental benefit."
- Establish clear definitions, precedence, and sharing rules beforehand to preclude disputes in its jurisdiction for such contentious issues as ownership of emission reductions resulting from demand-side management.

VI. CONCLUSIONS

Some conclusions can be drawn from this brief survey of the current literature. At the outset, in the apparently unlikely case that an "upstream" regulatory regime is established in which only fossil fuel sources trade emissions, there will be no particular role for municipalities or states in emissions trading. Otherwise:

- Municipalities and states have already demonstrated that they can be responsible for reducing greenhouse gas emissions.
- They deserve to be considered as participants in greenhouse gas emissions trading.
- In particular, they provide one means of addressing the difficult problem of including emissions from automobiles and buildings in the trading system.

This article was prepared for the Greenhouse Gas Demonstration Project of the Northeast States for Coordinated Air Use Management.

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- Nevertheless, the current conceptual designs of domestic emissions trading systems virtually ignore the possibility of municipalities and states as trading participants.
- It would be necessary to avoid a conflict of interest between units of government acting as participants as well as serving as regulators of greenhouse gas trading.
- There are regional interests, reflecting different kinds of energy use patterns, which should be represented politically in the development of a national regulatory system. The states and municipalities have a major institutional role in representing their constituencies in this process.

develop the MARKAL model of the New York State energy system for projecting energy supply and demand technologies, especially to control carbon dioxide emissions. Dr. Hill holds degrees of Eng.Sc.D. and M.S. from Columbia University, and B.Aero.Eng. from Rensselaer Polytechnic Institute. He is a licensed professional engineer. He was co-author of the 1990 Long Island Energy Plan prepared for the Long Island Regional Planning Board, and articles published in the journals Energy, Energy Policy, and Science.

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¹ U.S. Environmental Protection Agency, Office of Policy, Planning and Evaluation, State and Local Climate Change Program, *States Guidance Document: Policy Planning to Reduce Greenhouse Gas Emissions, Second Edition*, May 1998, p. 2-10.

² G. Kalapos, *Emissions Trading: A Canadian Primer*, International Council for Local Environmental Initiatives (undated).

³ R. Rivers and R. Nielsen, *Emission Trading In Canada: The PERT Experience* (Fall 1998 draft), pp. 3, 4. Proceedings of the Workshop on progress toward development of domestic emissions trading programs for greenhouse gases: a comparison of progress around the world, Toronto, 1-3 March 1999. National Round Table on the Environmental and the Economy.

⁴ E. Haites and R. Hornung, *Analysis of Emissions Trading Program Design Features*. Prepared for the National Round Table on the Environmental and the Economy. Jan. 1999, p. 6.

⁵ Allowance trading programs require monitoring systems to measure or calculate actual emissions. Credit trading programs require in addition methods to estimate avoided emissions. E. Haites and R. Hornung, *Analysis of Emissions Trading Program Design Features*, National Round Table on the Environmental and the Economy, Ottawa, Jan. 1999, p. 7.

⁶ That is, a "medium fossil fuel consumer" may be a municipality.

⁷ C. Rolfe, E. Haites, and R. Hornung, *Policies That Could Complement a Domestic Emissions Trading System for Greenhouse Gases*, National Round Table on the Environmental and the Economy, Ottawa, Jan. 1999, p. 15.

⁸ *Workshop on Progress Toward Development of Domestic Emissions Trading Programs for Greenhouse Gases: A Comparison of Progress Around the World*, National Round Table on the Environmental and the Economy, Toronto, Mar. 1-3, 1999. The sources and number of regulatory schemes considered by each source were as follows:

Canada's Options for a Domestic Greenhouse Gas Emissions Trading Program: 14

Center for Clean Air Policy: 2

Charles River Associates: 5

Heinz Center for Science, Economics and the Environment: 4

Resources for the Future: 1.

⁹ *Canada's Options for a Domestic Greenhouse Gas Emissions Trading*

Program, National Round Table on the Environment and the Economy, Ottawa, 1999, p. 77 (*emphasis added*).

¹⁰ *Design of a Canadian Municipal Carbon Trade: Principles, Framework, and Implementation*, International Council for Local Environmental Initiatives, Toronto, Jan. 1999, p. 7.

¹¹ R. Torrie, *Getting Ready for Carbon Trading—Strategic Options for the Toronto Atmospheric Fund*. Discussion paper prepared for the Toronto Atmospheric Fund, Dec. 18, 1997.

¹² Rolfe, Haites, and Hornung, *supra* note 7, p. 8.

¹³ States Guidance Document, *supra* note 1, pp. 2-11 to 2-14.

¹⁴ States Guidance Document, *supra* note 1, p. 5-23.

¹⁵ States Guidance Document, *supra* note 1, p. 2-20.

¹⁶ States Guidance Document, *supra* note 1, pp. 6-3, 6-4.

¹⁷ S. Chen, *New Jersey Initiative to Develop an Emissions Bank for Greenhouse Gas Emissions*, Department of Environmental Protection, State of New Jersey, Apr. 12, 1998.

¹⁸ R.C. Shinn, Jr., *Administrative Order 1998-09*, Department of Environmental Protection, State of New Jersey, Mar. 17, 1998.