State GHG Registry Collaborative
Registry Issues and Options

The information presented in this paper is intended to inform and educate the reader on the numerous issues related to state greenhouse gas registries. The paper summarizes strategies and provides guidance to states on key issues regarding different approaches to registry development and related initiatives. As such, it is important to note that ***the contents of this issue paper do not reflect consensus by the participants in the State Registry Collaborative.*** *Nor is this summary meant as an exhaustive treatment of the issues discussed herein. If you would like more information regarding specific Collaborative participants and their viewpoints on these issues, please contact them directly. Contact information is available at www.nescaum.org/greenhouse/registry..*

I. Overview

The purpose of this document is to set forth the options for state registries with respect to reporting requirements, and discuss each in the context of specific registry goals. The paper considers the relative merits of mandatory and voluntary registry programs; project level and whole corporation reporting requirements; the types of entities that might participate in a registry; the different categories of information to be reported (relying primarily on the reporting scopes set forth in the WRI/WBCSD GHG Protocol); the geographical and legal parameters of information to be reported, and the potential value of rate-based or other industry-specific reporting metrics. The registry goals considered include:

- encouraging the reduction of GHG emissions;
- raising awareness among corporations, municipalities, NGOs, the general public and other states regarding the importance of addressing climate change;
- providing examples of success stories that can demonstrate the potential for cost-effective and low-cost reductions and collateral benefits to the environment and the economy;
- helping participants understand and better manage their GHG emissions;
- identifying opportunities for emission reductions that bring economic benefit and competitive advantage;
- reducing risks associated with future carbon regulation;
- ensuring that participants are treated fairly under future regulatory regimes;
- providing information that will allow states and municipalities to better understand the emission sources within their jurisdictions and within their direct control;
- developing tools such as measurement and verification protocols and information management systems that may be necessary to

implement future policies such as early action incentive programs and emission caps.

This document is designed to be a reference tool for states and local stakeholder groups. As such it assesses the potential of alternative registry structures and rules to meet these goals but does not recommend specific courses of action.

II. Mandatory vs. Voluntary Reporting

While California, New Hampshire and Wisconsin are developing voluntary registries, New Jersey has recently proposed to amend their existing emission reporting system to add carbon dioxide and methane to the list of air pollutants required to be reported. In addition, Wisconsin requires all sources of 100,000 tons of or greater of CO_2 to report their CO_2 emissions as part of the state's annual emission inventory update, Maryland is presently assessing the relative merits of a mandatory registry, and a number of pending federal bills would create mandatory reporting regimes.

Although voluntary programs can advance all registry goals to some extent, a mandatory program would be substantially more effective in a number of areas. In particular, a mandatory reporting scheme would establish much more of the infrastructure needed to support a future cap-and-trade system. For example, a mandatory reporting program would provide regulators with the information needed to develop an appropriate allowance allocation scheme and could even form the basis of an emissions trading system among reporting entities in advance of a regulatory cap. In contrast, a voluntary program would not provide the state with the information necessary to determine whether or not trading produces net emission reductions.

A mandatory system would also be necessary to establish a comprehensive information system for large industrial stationary sources and corporate fleets. Existing federal regulations require only owners of electric generators to report CO_2 emissions information and many states do not have comprehensive emissions data for other sectors.

Finally, mandatory reporting can itself promote voluntary emission reductions, as the federal Toxics Release Inventory has demonstrated.[1] Detailed analyses have shown that voluntary reporting programs, such as the Department of Energy's Voluntary GHG Reporting Program, known as "1605(b), have not succeeded in driving emission reductions.[2]

[1] See, e.g., Seth Borenstein, *EPA Finds 7.3 Billion Pounds of Toxic Chemicals Were Released by U.S. Industries in 1998*, Philadelphia Inquirer (May 12, 2000) (noting that under EPA monitoring, the manufacturing industry reduced toxic released from 4 million pounds to 2.5 million pounds); NRDC and The Clean Energy Group, *Air Toxics Emissions from Electric Power Plants,* (June 1999) available at http://www.mjbradley.com/documents/cegnrdc.pdf.

[2] Under the 1605(b) program, electric utilities registered 120 million tons of emission "reductions" in 1998 alone, while national emissions for the industry increased by 20% between 1990 and

To the extent that mandatory reporting regulations target facilities, they obviate the need to address certain ownership issues, since they require whoever owns or controls the facility to provide the requisite information. Mandatory reporting requirements will capture all major emission sources within covered sectors, but they are unlikely to apply to indirect sources, such as electricity users, and without an opt-in provision for such entities they are unlikely to drive reductions through increases in end-use efficiency.

III. Project Level vs. Whole Corporation Reporting

A state's ability to achieve many of the objectives listed above depends largely on the design of the registry, in particular whether the registry requires participants to report their emissions on an entity-wide basis (i.e., whole corporation reporting) or allows reporting associated with a single project or facility. Project-based registries have a limited role in achieving the most important of these goals because they only focus on emission reductions associated with a discrete activity within a corporate boundary without regard for whether total corporate emissions are increasing or decreasing. For this reason, such registries are unlikely to support early action incentives or cap-and-trade programs.

States that have proposed project-level registries can help registrants identify emission reduction opportunities and ensure fair treatment with respect to specific investments reported while recognizing that net emissions for the entire entity may be increasing. And for some states, a project level registry is the only kind that is politically feasible or likely to attract many participants. However, a broader entity-based approach provides a more complete representation of the overall emissions performance of the entity and eliminates the concern that it can be very misleading for an entity to report an emissions reduction at one site when its overall emissions are increasing. It is the project or activity-based approach that has undermined the credibility of the DOE 1605(b) program within the environmental community and many identify it as one of the main factors why 1605(b) has failed to drive substantial – if any – emission reductions. Under the 1605(b) program, entities are allowed but not required to report company-wide emissions, and few have chosen to do so.

It is important to distinguish between project registries designed to promote any type of early action, for example, registries that treat any reduction measure that is not required by law as surplus even if it represents standard industry practice, from emerging programs that may certify reductions for use towards compliance with a regulatory requirement to reduce emissions. In the latter case, the requirements for additionality must be substantially more stringent since, they will

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1999. See Lashof, *Reported "Reductions," Rising Emissions* (October 2001), available at http://www.nrdc.org/globalwarming/reductions/execsum.asp.

be treated as the environmental equivalent of new reductions at specific facilities that would not occur in the absence of regulation.

IV. Types of Registrants

In determining which entities to require, encourage, or allow to report emissions information, states should consider all of their goals for the registry as well as the relative priority of each. In doing this, it is helpful to categorize emission sources – and the registrants who own or control them – into those the state is likely to regulate in the future and those it is not. Of course, states may design registries to serve a subset of one or both of these groups.

A. Owners of Major Sources of Direct Emissions.

These include owners of:

- electric power plants over a certain size (e.g., 25MW);
- large industrial sources such as paper and cement manufacturing facilities; and
- vehicle fleets over a certain size, such as those owned by transportation and shipping companies and utilities.

States concerned primarily with developing an infrastructure to support a cap and trade program might focus exclusively on entities that own or control sources that they (or the federal government) are likely to regulate in the future. However, excluding indirect sources will prevent a registry from driving investments in end-use efficiencies, raising awareness and encouraging reductions more broadly throughout the economy, and helping companies with indirect or small emission sources manage the economic risk associated with future carbon regulation of other entities. Many of these indirect emitters, such as chemical companies and aluminum manufacturers, can be quite large and reducing energy use at these facilities may be an important component of a state's emission reduction strategy.

B. Owners of Minor and Indirect Emission Sources.

These include:

- all electricity users;
- owners of minor direct emission sources;
- small businesses and individuals; and
- service industries.

States that are creating registries to promote the broadest array of emission reduction activities might seek to encourage all entities to participate, regardless of whether they own or control any direct emission source. This can help advance many of the stated registry goals; however, if states fail to require

separate reporting of direct and indirect emissions, they may create an information system that is of no use to a future regulatory system. As long as a state has the capacity to manage the information, there is little harm in encouraging a wide variety of participants provided that participants separately report indirect emissions (and any other emission likely to be double counted).

When ownership issues are important, for example if a state is offering early action protection or incentives, or in a cap-and-trade context, it is important to establish clear rules that reward reduction activity. For example, an incentive for improving energy efficiency should go to the entity that invested in the technology upgrades or other activity that reduced energy use, who is not necessarily the same party as the owner of the power plant whose reduced output resulted in lower greenhouse gas emissions.

V. Types of Emissions Data to be Reported

In general, states are considering two different types of reporting programs: emissions registries and emission reduction registries. With respect to either type of program, states will need to decide what information (i) to require registrants to report (as a regulatory requirement for mandatory programs or as a condition of participation for voluntary programs); (ii) to allow registrants to report in addition to what is required; and (iii) to prohibit registrants from reporting. States should also consider whether to require or accept emissions data for all six greenhouse gases or for a subset of these. Some of these decisions may depend upon an agency's information management capabilities.

A. Emissions Registries

States developing emission registries generally target whole corporations or facilities. The emissions information that they may require, allow or prohibit can be grouped into three broad scopes:

(i) Scope I: Direct GHG emissions[3]
- stationary sources owned or controlled by registrant
- mobile sources owned or controlled by registrant

(ii) Scope II: Indirect GHG emissions from purchased electricity, heat or steam

(iii) Scope III: Other indirect emissions
- employee business travel
- transportation of products, materials and waste
- outsourced activities, contract manufacturing, and franchises

[3] As the WRI/WBCSD GHG Protocol indicates, Scope I emissions are principally the result of production of electricity, heat or steam; physical or chemical processing; the use of vehicles; and fugitive emissions such as methane or chemical refrigerants. See www.ghgprotocol.org.

- emissions associated with landfilling of waste
- emissions associated with use of products manufactured by registrant (e.g., automobiles, electronics equipment)
- employee commuting
- emissions associated with the production of resources used by a reporting entity (e.g., paper, building materials)

In general, the broader the set of objectives a state hopes to achieve through its registry, the more emissions information it should require and/or allow registrants to report. If a state plans to use a registry as a tool to help drive emission reductions, explore opportunities for cost-effective and least-cost reductions such as energy efficiency, and help participants better understand and manage their emissions and the risks and opportunities associated with future GHG regulation, it makes sense to establish rules that encourage registrants to evaluate all three scopes of emission sources.

If a state is focused more narrowly, for example on fair treatment for major sources likely to be required to reduce emissions under a future regulatory regime, it would be sufficient to focus on Scope I emissions (possibly limited to stationary sources) and those Scope III emissions that are functionally similar to Scope I, such as emissions associated with outsourced activities, leased equipment and franchises.

States interested in developing the infrastructure necessary to support a GHG cap-and-trade program might begin with a narrow focus on entities and emission sources likely to be regulated, and broaden that focus over time to facilitate least-cost compliance through reductions by smaller sources, energy efficiency and renewables. Of course, it would be essential to design a future regulatory system in such a way that participation by smaller sources or participants investing in energy efficiency or renewables do not dilute the cap, for example by setting aside a portion of allowances to be distributed to non-regulated sources in advance of allocation of allowances.

States creating emission registries may also allow registrants to report emission reductions or sequestration investments, including purchased reductions or sequestration benefits. While this raises many of the concerns regarding project level reporting discussed above, it may be easier for a state to moderate the expectations of registrants with respect to the future regulatory value of such investments in the context of full emissions disclosure

B. Emission Reduction Registries

A number of states are considering allowing registrants to report emission reductions. Emissions reductions can be grouped into the following categories:

- entity-wide reductions (net);
- project-based reductions made by the reporting entity;
- project-based reductions made by a third party and purchased by the reporting entity;
- entity-wide sequestration (net);
- project-based sequestration investments in resources owned or controlled by the reporting entity; and
- project-based sequestration investments in resources owned or controlled by a third party and purchased by the reporting entity.

As noted above, it is important to distinguish between emission reduction registries designed to promote any type of reduction and those designed to promote reductions and/or sequestration investments for use towards compliance with present or future regulatory requirements to reduce emissions.

By definition, project-level registries are emission reduction registries. As discussed above, there are a number of limitations associated with the project level approach, notably the fact that the state does not have the information needed to determine whether or not reported reductions are offset by emissions increases elsewhere in the company. However, even if registrants report corporate-wide emissions, characterizing this information as "reductions," rather than simply emissions, raises concerns.

The term "reduction" suggests a creditable activity, and a state that allows the reporting of reductions may encourage participants to assume property rights under a future regulatory regime that the state does not intend to confer. State registration of reductions is also likely to facilitate ad hoc trading of self-generated "credits" associated with reported reductions, misleading purchasers regarding the potential value of such credits under future regulation and creating political pressure that could dilute the effectiveness of a future emissions cap.

Equating reported emission reductions with tradable credits begs the question of additionality, that is, whether such reductions would have happened in a business-as-usual scenario, an issue that *emission* registries are specifically designed to avoid. This question is considered below in the context of registries related to regulatory requirements to reduce emissions.

C. Registries for Reductions/Sequestration for Regulatory Compliance

States with regulatory requirements to reduce emissions that allow the use of purchased reductions or sequestration towards compliance (such as the MA cap on power plant emissions) may establish a registry of emission reduction or sequestration activities that meet specified criteria designed to ensure consistency with regulatory goals by ensuring that purchased reductions deliver the same environmental benefit that a reduction by the regulated source would provide. In this context, the question of additionality – whether purchased reductions represent new emission reductions (or sequestration resources) that would not have happened anyway – is of paramount concern. One way to approach this question is to focus on environmental, rather than financial additionality, by asking whether the proposed purchased reduction delivers net environmental benefits that are above and beyond standard industry practices.

VI. Parameters of Emissions Information to be Reported

A. Materiality

For whole corporation reporting programs, there is concern about requiring registrants to report emissions from *de minimus* sources, but also the recognition that registrants need to evaluate all emission sources to determine whether or not they are indeed *de minimus*. Therefore, making a blanket exemption for emissions sources below a certain percentage of total emissions seem in appropriate. One option is to allow participants to report emissions using default values and estimates rather than actual measurements for emission sources that comprise less than 5% of an entity's emissions and/or a specified number of tons of greenhouse gases.

There is also a materiality threshold issue with respect to the need for adjustments to base year emissions. One option proposed by WRI is to establish a *de minimus* threshold for changes in base year emissions due to minor acquisitions, divestitures, etc., below which a registrant would not be required to report adjustments.

B. Boundaries

Legal parameters. States can allow a wide variety of entities to participate in registries, including the state itself, as well as state agencies, authorities and universities; municipalities and municipal agencies, authorities and universities; corporations (including non-profit corporations), and subsidiaries provided that the parent corporation is clearly identified. States that require whole corporation reporting will have to define "corporate entity" which may or may not allow subsidiaries or individual business units to report independently.

Regulators should remain mindful of the fact that it is possible to use the definition of corporation to undermine some of the goals of an entity-wide reporting requirement, for example, if the definition allows a company to report reduced emissions in certain business units or specific facilities without reporting emission increases in others.

Geographical boundaries. States should define the geographical boundaries within which they will require or allow registrants to report applicable emissions sources. While national information is most relevant for the purposes of baseline protection, states that are more interested in generating collateral environmental and economic development benefits associated with emission reductions may draw geographical boundaries more narrowly.

Ownership. States should provide guidance to registrants regarding the reporting of direct emissions from sources that are jointly owned. There are two approaches that could be used. First, following the model of existing regulatory programs (such as the Toxic Release Inventory and the Clean Air Act), the owner or operator of the facility would report the emissions for the whole facility. This approach would be most familiar to state agencies and to firms that already report emissions data. In addition, reporting for entire facilities would facilitate any future use of the data under a regulatory program. The second approach would be for companies to treat emissions information as they do financial information, and report facility-level emissions on the basis of equity ownership, instead of on the basis of operational control, as the WRI/WBCSD GHG Protocol suggests. While the latter approach may be easier for companies, it is not consistent with the standard regulatory approach and may cause problems for states that would like to segue into regulatory emission caps in the future.

Comparison of Approaches to Ownership.

Category of Partially Owned Entity/Facility	Control Based Approach	Equity Share Based Approach
100% Owned	100% of Emissions	100% of Emissions
50-100% Owned (Majority Interest)	100% of Emissions	Equity % of Emissions
50% (Jointly Owned)	50% of Emissions	Equity (50%) of Emissions
20-50% Owned (Significant Influence)	0% of Emissions	Equity % of Emissions
0-20% Owned	0% of Emissions	0% of Emissions

Timing. Most states designing registries are interested in collecting actual, not projected, emissions information. Most propose that registrants reporting base year information, which could be the most recent year or an earlier year as far back as 1990 if information is available, and annual emissions data thereafter. Because there is no product associated with registered information, it does not

make sense to use projections and true-ups, as rules for green marketing and environmental disclosure programs frequently allow and there is little added benefit to requiring more frequent reporting.

C. Auditing and Verification

Most environmental groups assert that third party certification of emissions information is essential if a registry is to have credibility. However, many corporate partners have expressed concern regarding the parameters of a certification requirement. States should clearly set forth any requirements for certification, verification and audits. See Collaborative Issue paper on Auditing and Verification.

D. Mass vs. Output-Based Emissions

At present, the electric generation sector is the only one for which we have an appropriate rate based reporting metric. WRI/WBCSD have developed a set of performance/efficiency indicators and states may be developing industry specific guidance documents for registrants.

Output-based metrics may be useful for reporting entities to demonstrate efficiency improvements in their operations, even if total emissions are increasing due to increased output. While tons of emissions per kilowatt-hour generated is a well established metric for the electric sector, other sectors pose a greater challenge. Tons per unit of output is a potential metric, but it is only useful if the unit of output is consistent over time and throughout an industry. This might make sense for the cement or aluminum industry, but not for manufacturers of consumer products. Output-based metrics can avoid the need for comparison to a business-as-usual (BAU) scenario, which would serve the same purpose but involves inherently uncertain projections about what would have happened to a particular entity's emissions in the absence of specific action taken. Neither output-based standards nor comparison to BAU obviate the need to asses whether or not total emissions are decreasing.

Appendix I
Specific Information to be Reported to Registries

This section sets forth the categories of information that registries might require participants to report [See GHG Protocol p. 38 for comparison]. Registries that require participants to report disaggregate information will be better able to compile the information in a number of ways to create a variety of meaningful reports. States should consider what kind of reports they would like to produce from registered information and whether to make aggregate or underlying information publicly available.

A. General Information

- Name and Address of Reporting Entity (including website address)
- Contact Person (including telephone and email)
- Name of Parent Company (if applicable)
- Name of Auditor and Contact Person
- Year of Emissions Reported
- Geographical Scope of Emissions Reported
- Description of Organizational Boundaries
- Justification for Specific Exclusion of sources

B. Total Emissions for each GHG and Carbon Equivalent

C. Breakdown of Emissions into Component Categories / Pollutants

Scope I Emissions (report each GHG separately and in CO2 equivalent; state should specify conversion factors such as those proposed in the IPCC second assessment report (1996))

- Total emissions from each:
  - stationary combustion
  - transportation (owned or controlled vehicles)
  - fugitive emissions
  - industrial processes
  - landfill
  - waste
- Total Direct Emissions
- Lbs/MWH rate for electric generators (and other appropriate output based standards developed for other sectors)

Scope II Emissions (registry should supply default emission factors for each control area)

- Total MWH
- Emissions Factor (e.g., may use product or utility-specific emission factor)
- Total Emissions from Electricity
- Total Emissions from Steam

- Total Scope II Emissions

Scope III Emissions

- Total emissions from each:
  - Employee travel
  - Employee commuting
  - Waste
  - Shipping
  - Paper use
  - Other
- Total Scope III Emissions

Purchased Reductions

For each of the above, report methodology and conversion factors

Appendix II
Reporting Protocols

States must balance the desire to collect the information needed to meet registry goals with the concern that in the absence of reporting protocols and related guidance materials, the usefulness of information collected will be greatly reduced. Not only do protocols greatly reduce the burden of reporting requirements, they also ensure that data is collected in a comparable and consistent fashion that meets minimum standards for integrity.

At present, CA has developed a draft protocol for reporting entity-wide emissions and WRI/WBCSD have developed protocols for reporting Scope I and Scope II emissions. The Scope I protocols are also appropriate for Scope III emissions that are functionally similar to Scope I, such as emissions associated with outsourced activities, leased equipment and franchises.

WRI/WBCSD are in the process of developing industry-specific reporting protocols for Scope I emissions that will make reporting even easier. **[Clarify the industries for which specific protocols exist, which are in the works, timeframe for completion; status of developing performance/efficiency indicators]**. In 2002, WRI/WBCSD will be developing additional protocols for emissions associated with employee commuting and business travel, paper use, landfilling of waste, and product use in the automotive sector.

Registries can make use of existing protocols, modifying them as necessary to reflect local conditions.[4] However, where protocols do not exist, there may be some concern about allowing registrants to report emissions information using measurement methodologies and default values of their own choosing, as eventually registries may issue protocols for such emissions with conflicting approaches. This is of particular concern with respect to the reporting of purchased reductions. However, if registries clearly notify participants that they do not (or may not be able to) confer any value on emissions information reported in the absence of an approved protocol, the risk of future conflict over methodologies and rules governing trading may be offset by the value of encouraging emission reductions associated with a broader range of activities and facilitating creative approaches to measurement that registrants may develop in these areas.

Registries should notify participants and stakeholders periodically regarding the categories of indirect emissions for which they or WRI/WBCSD are developing reporting guidelines.

[4] States can customize existing protocols to reflect regional conditions, for example by requiring the use of regional default values for emissions associated with electricity use.