

Evaluating Greenhouse Gas Emissions at the Local Level

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The regulation of greenhouse gas (GHG) is internationally acknowledged and is already a common practice in countries such as Bulgaria, Denmark, and Norway at the local governmental level. For the United States the regulation of GHG is an emerging issue at the state and local level. As awareness of the significance of GHG emissions increase, local governments are likely to play an increased role in regulating GHG emissions. A common problem local governments' face regarding the regulation of GHG is how to evaluate emission levels and assess their impact.

Trickle Down from International to Local: The Kyoto Protocol

Industrialized nations around the world have taken legal action to decrease their greenhouse gas (GHG) emissions by ratifying the Kyoto Protocol. The Kyoto Protocol is a protocol to the United Nations Framework Convention on Climate Change, an international environmental treaty with the goal of achieving "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." (*Article 2*, The United Nations Framework Convention on Climate Change. http://unfccc.int/essential_background/convention/background/items/1353.php). The Kyoto Protocol establishes legally binding commitment for the reduction of four greenhouse gases (carbon dioxide, methane, nitrous oxide, sulphur hexafluoride), and two groups of gases (hydrofluorocarbons and perfluorocarbons) produced by industrialized nations, as well as general commitments for all member countries. As of January 2009, 183 countries had ratified the protocol. (*Kyoto Protocol: Status of Ratification*. United Nations Framework Convention on Climate Change, http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification.pdf. Last Modified January 14, 2009.)

Under the Kyoto Protocol, industrialized countries agreed to reduce their collective GHG emissions by 5.2% from the levels recorded in 1990. The United States, although a signatory to the Kyoto Protocol under the Clinton Administration, has neither ratified nor withdrawn from the Protocol. The signature alone is merely symbolic, as the Kyoto Protocol is non-binding on the United States unless ratified. The United States was, as of 2005, the largest per capita emitter of carbon dioxide from the burning of fossil fuels. (*United States Country Analysis Brief*, US Energy Information Administration.

http://www.geni.org/globalenergy/library/national_energy_grid/united-states-of-america/UnitedStatesCountryAnalysis.shtml (2005)).

Despite the United States unwillingness to ratify and commit to the requirements of the Kyoto Protocol, local governments have begun taking the issue of GHG emissions into their own hands. Across the country 971 mayors have signed the US Mayors Climate Protection Agreement. Under that Agreement, participating municipalities commit to the following three actions:

- (1) strive to meet or beat the Kyoto Protocol targets in their own communities, through actions which include everything from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- (2) urge their state governments, and the federal government, to enact policies and programs to meet or beat the GHG emission reduction target suggested for the United States in the Kyoto Protocol which is a seven percent (7%) reduction from 1990 levels by 2012; and
- (3) urge the U.S. Congress to pass the bipartisan GHG reduction legislation, which would establish a national emission trading system.

(U.S. Mayors Climate Protection Agreement, Local Governments for Sustainability. <http://www.icleiusa.org/action-center/getting-started/us-mayors-climate-protection-agreement>).

Trickle Down from New York State to Local Governments

As of July 15, 2009, the New York State Department of Environmental Conservation (NYSDEC) issued its first policy regarding the assessing of energy use and GHG emissions in environmental impact statements. (Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements, New York State Department of Conservation. http://www.dec.ny.gov/docs/administration_pdf/eisghgpolicy.pdf). The NYSDEC policy addresses six main greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Each of these six GHGs could be evaluated during the SEQRA process and, therefore, taken into account when considering and approving a development plan. It is important to note, however, that the NYSDEC policy, while binding on the NYSDEC, is advisory to other state and local agencies.

The Policy concentrates on:

- establishing the boundaries for the assessment;
- quantifying indirect and direct carbon dioxide (CO₂) emissions from the project;
- quantifying emissions from waste generation;
- quantifying methane emissions from landfills; and
- providing a menu of possible mitigation options.

While the NYSDEC policy does offer examples of areas of inquiry that warrant evaluation, it does not identify a resource for local governments to use when evaluating the overall GHG emissions. Indeed, as a recent article in the Wall Street Journal points out, identifying a carbon footprint is difficult because there is no standard shoe size:

In the two years since Al Gore's movie, "An Inconvenient Truth," helped make climate change a marquee issue, companies from Timberland Co., the shoe maker, to News Corp., the owner of The Wall Street Journal, have promised to become "carbon neutral." The term may suggest a company has reengineered itself so that it's no longer adding to the carbon dioxide and other greenhouse gases scientists say are contributing to climate change. The experience of Dell, one of the few multinational corporations to claim it already has achieved carbon neutrality, shows the reality often falls short of that ideal. The amount of emissions Dell has committed to neutralize is known in the environmental industry as the company's "carbon footprint." But there is no universally accepted standard for what a footprint should include, and so every company calculates its differently. Dell counts the emissions produced by its boilers and company-owned cars, its buildings' electricity use, and its employees' business air travel. In fact, that's only a small fraction of all the emissions associated with Dell. **The footprint doesn't include the oil used by Dell's suppliers to make its computer parts, the diesel and jet fuel used to ship those computers around the world, or the coal-fired electricity used to run them.**

Bell, Jeffrey, "Green Goal of 'Carbon Neutrality' Hits Limit," Wall Street Journal, December 30, 2008, A1 (emphasis added).

Setting aside the issue of quantification, a local government can evaluate not only project specific GHG impacts through the SEQR process, but it can also evaluate future GHG impact potential as part of a local comprehensive planning process.

The adoption of a comprehensive plan is a Type I Action under SEQR, and as such is prime opportunity for the preparation of a generic environmental impact statement (GEIS). Given the new NYSDEC policy on evaluating GHG emissions in the SEQR process, local governments now have guidance from NYSDEC on how to evaluate GHG impacts at the local level. The challenge will be for local governments to grapple with identifying not only the potential extent of GHG emissions, but also what standard should be applied as mitigation, if necessary.

Calculation Software: TEAL

Noblis, Inc, a not-for-profit science, technology and strategy organization, announced in May of 2009 that they will be launching a new source of analytic tools to help organizations and governments assess and plan their sustainability strategies called Total Emissions Analytics (TEAL).

TEAL is an emissions assessment and strategic planning tool available through the internet. TEAL's web-based software as-a-service application can be used to evaluate GHG emissions, calculate carbon footprints, and baseline energy use. The tool can also be used to evaluate what-if scenarios, calculate the emissions impacts of shifting corporate practices and policies, and visualize a site's emissions across a broad geographic area. TEAL software additionally has a return on investment (ROI) component for analyzing investments in greening IT equipment and lighting. (Greenhouse Gas Emissions Analysis and Planning Service "TEAL" Launched by Noblis. <http://www.nvtc.org/membership/membernewsVoiceSummer09.php>).

TEAL will require a subscription of \$495 annually. TEAL requires information such as square footage, inventory; number of people on staff, etc. Once the necessary information is provided TEAL then calculates the emissions based on those parameters. The emissions can be hypothetically altered to evaluate alternatives.

This do-it-yourself web-based service appears to allow local governments to determine the potential GHG ramifications from various development scenarios, either for individual projects or during the comprehensive planning process. TEAL can be accessed through its websites <http://green.noblis.org/green/>, and additional information can be obtained through <http://www.facebook.com/pages/Total-Emissions-Analytics-TEAL/81335784825> including videos, question and answer, and articles. An overview and demonstration of the features of TEAL can be found at: <http://www.youtube.com/watch?v=ILY9XGXzCXU&feature=channel> page.

Conclusion

GHG emissions are already being regulated on the international level, as well as on the state level. With the guidance of NYSDEC's Policy, GHG evaluation and impacts can be assessed at the local level through the use of comprehensive planning and through the preparation of a GEIS that includes an assessment of GHG emissions resulting from alternative development scenarios.