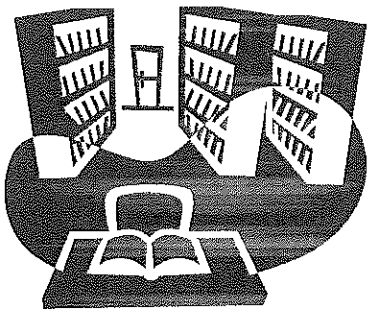
INDEX to GREENHOUSE GAS LIBRARY



This index was developed by the Strategic Industries Division, State of Hawaii Department of Business, Economic Development and Tourism.

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Index to GHG CD Library

DBEDT staff has developed the following list of documents relevant to Act 234, SLH 2007. All are available from Internet except item 6, which is therefore provided with this document.

Note: Items 1-5 are available on the DBEDT Strategic Industries Division publications web page at: http://www.hawaii.gov/dbedt/info/energy/publications/

1. ***Inventory of Hawaii Greenhouse Gas Emissions, Estimates for 1990***, (published July 1997)

2. ***Inventory of Hawaii Greenhouse Gas Emissions, Estimates for 1990***, (Revision published January 1999)

3. ***Hawaii Climate Change Action Plan,*** (published November 1998)

4. ***Hawaii Energy Strategy 2000***, (published January 2000)

5. ***Hawaii's Greenhouse Gas Inventory,*** a presentation to HECO IRP meeting, June 2007

6. Hawaii Energy Policy Forum Greenhouse Gas Emissions Working Group. ***Action Plan.*** The GHG *Action Plan* is item # 3 of the forum's ten-point plan. It is entitled, "Reduce Greenhouse Gas Emissions in Hawaii". Since this doctrine is not available on the Internet, we have attached it to this index. The Forum states its goals are to do the following:

To assist the State and energy stakeholders to reduce greenhouse gas emissions to 1990 levels as called for in Act 234 adopted and signed into law in 2007; and

To identify and promote greenhouse gas emission reduction measures that optimize global benefits and minimize the negative impacts of greenhouse gas emission controls on the state economy with particular attention to impacts on low-income residents.

7. ***2006 IPCC Guidelines for National Greenhouse Gas Inventories.***

Available at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.htm

The Intergovernmental Panel on Climate Change (IPCC) publishes internationally accepted inventory methodologies that serve as a basis for all greenhouse gas inventories, ensuring that they are comparable and understandable. The 2006 IPCC Guidelines are enclosed and were completed and accepted by the IPCC in May 2006 and modified in April 2007.

8. ***Emissions Inventory Improvement Program (EIIP) Volume VIII: Estimating Greenhouse Gas Emissions***

Available at: http://www.epa.gov/ttn/chief/eiip/techreport/volume08/

Prepared for the EPA (an update is pending), provides flexibility in its methods for states to estimate the following GHG emissions and sinks:

Combustion of Fossil Fuels

Industrial Processes

Natural Gas and Oil Systems

Coal Mining

Municipal Waste Disposal

Domesticated Animals

Manure Management

Flooded Rice Fields

Agricultural Soils

Forest Management

Burning of Agricultural Crop Wastes

Municipal Waste Water

Methane and Nitrous Oxide Emissions from Mobile Combustion

Methane and Nitrous Oxide Emissions from Stationary Combustion

9. British Chancellor of the Exchequer. ***The Stern Review***

Available at: http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern review_index.cfm

This Review, commissioned by the British Chancellor of the Exchequer, first examines the evidence on the economic impacts of climate change itself, and explores the economics of stabilizing greenhouse gases in the atmosphere. The second half of the Review considers the complex policy challenges involved in managing the transition to a low-carbon economy and in ensuring that societies can adapt to the consequences of climate change that can no longer be avoided.

The Review takes an international perspective because climate change is global in its causes and consequences, and international collective action will be critical in driving an effective, efficient and equitable response on the scale required. This response will require deeper international co-operation in many areas - most notably in creating price signals and markets for carbon, spurring technology research, development and deployment, and promoting adaptation, particularly for developing countries.

According to the Review, “Climate change presents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen. The economic analysis must therefore be global, deal with long time horizons, have the economics of risk and uncertainty at centre stage, and examine the possibility of major, non-marginal change. To meet these requirements, the Review draws on ideas

and techniques from most of the important areas of economics, including many recent advances.

10. Center for Clean Air Policy Transportation. ***Emissions Guidebook***

Available at: http://www.ccap.org/guidebookAccess/login.php

States and localities have influence over a number of decisions that affect transportation emissions such as land use regulation, transportation planning, and infrastructure spending. The purpose of this guidebook is to engage state and local officials in understanding the extent to which policy decisions impact air pollution, energy use, and greenhouse gas (GHG) emissions. It is published by the Center for Clean Air Policy (CCAP), an independent non-profit which focuses on market-based approaches to climate and air quality policy.

The CCAP Transportation Emissions Guidebook consists of two parts:

- Part One: Land Use, Transit & Travel Demand Management. This first section focuses on policies related to travel demand and examines the impacts of land use and investment decisions on transportation emissions. Policies analyzed in part one include: transit-oriented development, bicycle initiatives, pay-as-you-drive insurance, light rail, comprehensive smart growth policy, etc.

- Part Two: Vehicle Technology and Fuels. This section, released in late 2005, focuses on measures such as, feebates, hybrids, biofuels, low-rolling resistance tires, etc.

The purpose of the CCAP Transportation Emissions Guidebook is to provide basic 'rules of thumb' to calculate emissions reductions from the implementation of specific transportation and land use policies. The guidebook is a unique tool that consists of a user-friendly spreadsheet tool, or Guidebook Emissions Calculator, which enables users to quantify the emissions benefits from a variety of projects and policies, a series of policy briefs, and a technical appendix.

11. World Business Council for Sustainable Development and World Resources Institute. ***The GHG Protocol for Project Accounting***

Available at:
http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=MTc1MTA

Published by the World Business Council for Sustainable Development and World Resources Institute, it aims to be a guidance manual as well as a tool for quantifying and reporting reductions from GHG projects. They claim the uniqueness of the protocol lies in its ability to distinguish between policy decisions and technical accounting aspects.

12. World Business Council for Sustainable Development and World Resources Institute. ***Guidelines for Quantifying GHG Reductions from Grid-Connected Electricity Projects***

Available at: http://www.wri.org/climate/pubs_description.cfm?pid=4277#pdf_files

This publication was released by the GHG Protocol Initiative, a project of the World Business Council for Sustainable Development and World Resources Institute. They claim that the "GHG Protocol Initiative is the most widely used international accounting tool for government and business leaders to understand, quantify and manage greenhouse gas emissions, and is working with partners and groups around the world to build a new generation of credible and effective programs for tackling climate change."

Both renewable energy and energy efficiency technologies are essential for solving the problem of climate change. As concern about climate change has grown, however, one of the challenges facing project developers and policy-makers alike has been to accurately quantify their GHG emissions benefits.

In theory, coming up with the right answer involves complicated modeling of power grids, which is prohibitively costly and impractical, or alternative methods that are overly simplistic and inaccurate.

The GHG Protocol Initiative addresses this challenge by providing simple methods for estimating GHG reductions that are also rigorous, credible and transparent.

Developers of wind energy projects, for example, can use the guidelines to estimate emissions reductions using basic data on local power plants. The methods described in the guidelines can be used anywhere in the world where these data are available.

The guidelines will also be useful to designers of "carbon offset" programs and other initiatives that give credit for GHG emission reductions from renewable energy and energy efficiency projects.

The guidelines can be used, for example, to calculate standard grid "emission factors" indicating how much carbon dioxide is avoided by a megawatt-hour of renewable electricity.

HAWAII ENERGY POLICY FORUM GREENHOUSE GAS EMISSIONS WORKING GROUP

ACTION PLAN

TEN POINT PLAN POINT # 3

Reduce Greenhouse Gas Emissions in Hawaii

Goal(s):

- To assist the State and energy stakeholders to reduce greenhouse gas emissions to 1990 levels as called for in Act 234 adopted and signed into law in 2007
- To identify and promote greenhouse gas emission reduction measures that optimize global benefits and minimize the negative impacts of greenhouse gas emission controls on the state economy with particular attention to impacts on low-income residents.

Background: The Hawaii State Legislature adopted Act 234, which calls for the reduction of greenhouse gas emissions in Hawaii to levels at or below estimated emissions for 1990 by January 1, 2020. Act 234 calls for the Department of Health and the Department of Business, Economic Development and Tourism to update the inventory of greenhouse gas emissions by December 31, 2008. The law also establishes a Greenhouse Gas Emissions Reduction Task Force that is charged with developing a work plan and regulatory scheme to achieve the maximum practically and technically feasible and cost effective reduction in greenhouse gas emissions to achieve the emissions limit established by the Act.

Act 234 calls on the Task Force to make recommendations on options for reducing greenhouse gas emissions including:

- Direct emissions reduction measures;
- Alternative compliance mechanisms;
- Market-based compliance measures; and
- Potential monetary and non-monetary incentives.

Act 234 also calls on the Task Force to investigate analytical tools, economic models, and other scientific methods to evaluate the total potential costs and total potential economic benefits of plans to reduce greenhouse gas emissions to the state's economy, environment, and public health.

The greenhouse gas emission reduction measures identified in Act 234 could have extensive impacts on Hawaii's economy. Several mainland states are currently evaluating the impacts of emissions reductions and market-based compliance measures on their greenhouse gas emissions and on their economies. The United States Congress is also contemplating such measures. Therefore, it is imperative that the Greenhouse Gas Emissions Task Force and the Departments of Health and Business, Economic Development and Tourism provide the Legislature and the Governor with solid environmental and economic analyses of the costs and benefits of alternatives for reducing greenhouse gas emissions.

Objectives and Desired Outcomes:

- To provide guidance and analytical support to the Greenhouse Gas Emission Task Force to assess policy options for greenhouse gas emission reductions;
- To work with the Greenhouse Gas Emissions Task Force to develop recommendations to the Legislature on greenhouse gas emissions control policies that will meet the targets set forth in Act 234 and minimize the negative impacts of emissions controls
    - To assess the feasibility and costs and benefits of possible implementation measures including: limiting stack emissions of greenhouse gases on power plants, a carbon tax levied on oil imports and/or at the local refineries, cap and trade systems managed locally, and incentives to reduce greenhouse gas emissions
    - To evaluate policies developed and implemented by other states and regions and impact assessments of those policies;
    - To assess options for national legislation being considered by the US Congress and the potential impacts of such legislation on state policies and the Hawaii economy

Indicators / Metrics:

- Completion of an assessment of existing greenhouse gas emissions data
- Compilation and development of data identifying 1990 and current levels of Hawaii greenhouse gas emissions by source
- Completion of an initial assessment of policy options for reducing greenhouse gas emissions
- Development of methods to project greenhouse gas emissions, reduction costs and economic impacts for various possible reduction measures and policies
- Identification of policy, technical and regulatory issues associated with greenhouse gas reduction regulations
- Development of recommendations to the Legislature on additional analytical work required to fully assess policy options for reducing greenhouse gas emissions in Hawaii

Specific Forum Actions:

Specific Forum actions will be determined based on the process and actions of the Greenhouse Gas Emissions Task Force. Interim actions include:

- Monitoring the formation and actions of the Greenhouse Gas Emissions Task Force
- Monitoring actions of stakeholders, stakeholder groups, governmental agencies or other entities involved in the analysis, regulation or implementation of greenhouse gas measures and policies.