



**Lisa Grice**  
 Vice President  
 Greenhouse Gas Management  
 Phone: 720.286.2090  
 e-mail: [Lisa.Grice@ch2m.com](mailto:Lisa.Grice@ch2m.com)

**Jamiyo Mack**  
 Northeast Region, USA  
 Phone: 703.471.6405 x4639  
 e-mail: [Jamiyo.Mack@ch2m.com](mailto:Jamiyo.Mack@ch2m.com)

**Lisa Hile**  
 Southeast Region, USA  
 Phone: 210.377.3081 x275  
 e-mail: [Lisa.Hile@ch2m.com](mailto:Lisa.Hile@ch2m.com)

**Mary Beth Yansura**  
 Northwest Region, USA  
 Phone: 425.453.5000 x5341  
 e-mail: [MaryBeth.Yansura@ch2m.com](mailto:MaryBeth.Yansura@ch2m.com)

**Clay Hinkle**  
 California, USA  
 Phone: 619.687.0120  
 e-mail: [Clay.Hinkle@ch2m.com](mailto:Clay.Hinkle@ch2m.com)

**Doug Huxley**  
 Southwest Region, USA  
 Phone: 720.286.5503 x65503  
 e-mail: [Doug.Huxley@ch2m.com](mailto:Doug.Huxley@ch2m.com)

**Michelle Hall**  
 Asia Pacific Region  
 Phone: +61.2.9950.0200  
 e-mail: [Michelle.Hall@ch2m.com](mailto:Michelle.Hall@ch2m.com)

**Alan Teare**  
 Canada  
 Phone: 416.499.0090 x249  
 e-mail: [Alan.Teare@ch2m.com](mailto:Alan.Teare@ch2m.com)

**Peter Kirk**  
 Europe/Middle East Region  
 Phone: +44.20.7471.6161  
 e-mail: [Peter.Kirk@ch2m.com](mailto:Peter.Kirk@ch2m.com)

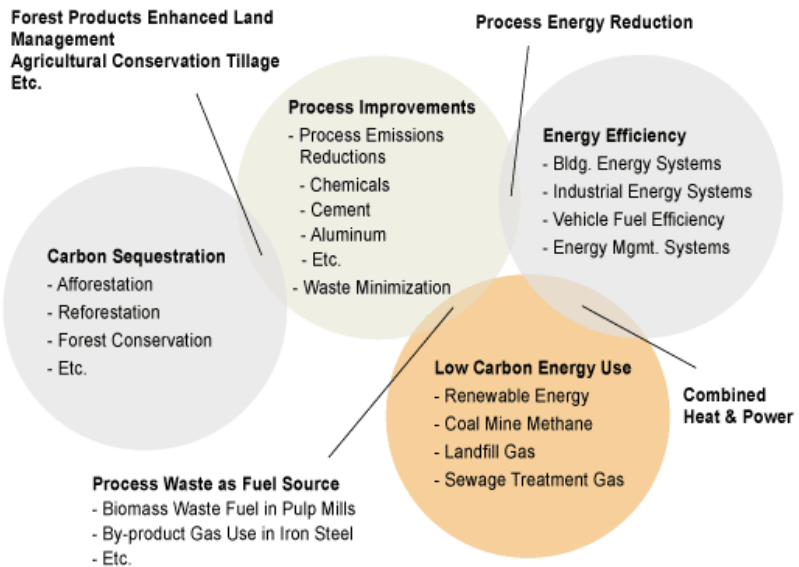
**Eberto "Tiko" Amador**  
 Latin America  
 Phone: 713.462.0161 x287  
 e-mail: [Eberto.Amador@ch2m.com](mailto:Eberto.Amador@ch2m.com)

## Greenhouse Gas Management Services

### A Complex and Evolving Issue

Management of greenhouse gas (GHG) emissions is a rapidly evolving challenge facing industrial operators and local and national governments around the world. Companies with facilities in countries that are party to the Kyoto Protocol are learning to manage GHG emissions as a tradable commodity with a market-established value. This includes finding opportunities to use the Protocol's flexibility mechanisms—emissions trading, Clean Development Mechanism, and Joint Implementation—for financial advantage. The Kyoto Protocol, however, is simply one factor directing and shaping the future of GHG emissions management programs. At the national, regional, state, provincial, and local levels, GHG regulatory developments continue apace. Additionally, public and private entities face internal and external pressures to recognize GHG emissions as an environmental and societal concern, and develop, then implement, effective management practices.

#### Opportunities for GHG Reduction



### CH2M HILL: A Leader in GHG Management Services

CH2M HILL delivers all elements of a comprehensive, value-focused GHG management program. Our clients have turned to us to work with them in developing strategic plans and policies, create GHG accounting systems, prepare emission inventories, evaluate and validate emission reductions, and verify both corporate footprints and project performance. We help our clients take advantage of emissions trading opportunities, respond to regulatory challenges, and manage the business risks posed by the uncertainties of climate change and potential actions of various internal and external stakeholder groups.



Consulting capabilities and organizational attributes that differentiate CH2M HILL from competitors in the GHG management services market include:

- Coupling a deep understanding of GHG policies and regulatory developments with our engineering expertise to structure and deliver GHG management programs that support client business goals.
- Bringing leading-edge understanding of evolving GHG accounting and reporting standards to our client engagements. Of special note, CH2M HILL helped the USEPA develop the Climate Leaders voluntary GHG emissions management program. We also assisted both the California Climate Action Registry and the World Economic Forum to develop their online reporting tools.
- Coordinating engineering, management systems, and information management expertise within a common project delivery system and a corporate culture that promotes teamwork across the entire organization.

## Services

CH2M HILL offers a suite of services that support client GHG management programs. These services include the following.

- **Strategic Planning.** CH2M HILL assists clients in developing comprehensive GHG management strategic plans. This may include facilitating workshops to identify organizational business objectives and how to integrate them into the management plan.
- **Emission Inventories.** CH2M HILL has assisted some of the world's most respected corporations in developing credible, verifiable GHG inventories. Elements of a typical inventory development program include establishing boundaries and quantification methods, development and deployment of an information management system, development of an inventory management plan, inventory construction, and data management.
- **Identification and Implementation of Emission Management Opportunities.** CH2M HILL assists clients with identification of emission reduction and sequestration opportunities that serve a variety of corporate goals. As shown in the graphic titled "Opportunities for GHG Reduction," we apply a variety of evaluation criteria – ranging from Return on Investment to collateral benefits to the client, the environment, and the community – to develop a selection of credible GHG management options. CH2M HILL then brings value to the process by engaging our engineering and project management assets to design, build, and even operate the project.
- **Verification Services.** CH2M HILL assists clients in evaluating the quality and quantify of emission reductions resulting from a wide variety of offset projects. Whether holding credits against a future regulatory program, selling credits to realize current value, or achieving reductions



to support corporate sustainability goals, CH2M HILL provides objective quantification and 3rd party verification of emission reductions.

- **Management Systems Integration.** CH2M HILL has extensive experience working with clients to integrate GHG management programs into management systems and operational excellence programs such as Lean Manufacturing and Six Sigma.

## Experience

### PPL Corporation



With about 12,000 MW of coal, natural gas, oil, nuclear, and hydroelectric generating capacity in multiple states, PPL is a major provider of electricity in the U.S. CH2M HILL assisted PPL in developing a GHG management program that made sense for their business needs. Elements of the program included establishment of business objectives (via a facilitated workshop), inventory development, identification of GHG management opportunities, strategic plan development, and plan implementation. With CH2M HILL's assistance, PPL made great progress in managing their GHG emissions toward optimizing their assets and mitigating their liabilities.

### Eaton Corporation

Eaton, a Fortune 200 company, is a global leader in electrical systems and components for power quality, distribution and control; fluid power systems and services for industrial, mobile and aircraft equipment; intelligent truck drivetrain systems; and automotive engine air management systems, powertrain solutions and specialty controls. CH2M HILL is partnering with Eaton in designing and implementing GHG management process for manufacturing sites around the world. Work includes quantification and evaluation of direct and indirect emission sources for reduction opportunities.

### Nike, Inc.

Headquartered in Beaverton, Oregon, Nike is the world's most competitive sports and fitness company and one of the most recognized brand names on the planet. Since 1998, CH2M HILL has provided a range of services to support Nike's desire to become a fully sustainable business. [Details of this partnership can be found in the book *Dancing with the Tiger: Learning Sustainability Step by Natural Step*, authored by Brian Nattras and Mary Altomare, and published by New Society Publishers ([www.newsociety.com](http://www.newsociety.com) ).] With respect to GHG management, CH2M HILL has developed and implemented a data collection and verification system for Nike's manufacturing operations as well as over 900 directly contracted vendors in 30 countries. Our efforts included inventory development and identification of emission reduction opportunities, including performance of energy audits at major distribution centers in the United States.



## Suncor Energy Inc.


A credible GHG inventory is an important foundation on which to set corporate goals and objectives, as well as to participate in carbon trading markets. At the operational level, GHG tracking informs process improvement, dematerialization, energy efficiency, and waste reduction efforts.

To help Suncor Energy Inc. (an integrated Canadian energy company, strategically focused on developing one of the world's largest petroleum resource basins: Canada's Athabasca oil sands) achieve these and other corporate objectives, CH2M HILL conducted an evaluation of the efficiency and completeness of Suncor's corporation-wide GHG tracking system. In the process of this effort, we have made comprehensive recommendations for upgrade of the system in order to establish the highest standards within the oil and gas industry and globally.

Our work included evaluation of GHG accounting principles including consistency, completeness, materiality, accuracy, and transparency/verifiability. Additionally, we focused on developing measurement and reporting strategies to optimize emission reduction value. Many parameters contribute to the future value of emissions reductions. Variables such as vintage, measurement precision and accuracy, permanence, ownership confidence, surplus, project risk, and additionality all modify the quality of an emissions reduction. We helped Suncor detail a data management strategy that is sufficiently flexible and robust to minimize the overall risk discounting applied to their emissions reduction portfolio and is compatible with an efficient verification protocol.

In addition to our measurement and reporting guidelines task, we have also deployed a multi-disciplinary technical and engineering team to identify and evaluate both conventional and GHG emission reduction opportunities. Our efforts focus on emission reduction opportunities occurring at the Fort McMurray site. Critical areas of consideration include the fleet associated with the mining operation, extraction processes associated with bitumen separation, bitumen upgrading, and on-site power plants. The team will use its air emission control technology expertise as well as process efficiency expertise.

As testament to the success of the project, CH2M HILL's Sustainable Development Project Team was notified recently that its work for Suncor Energy Inc. had been recognized by Canadian Standards Association (CSA) Climate Change and GHG Registries as a Gold Champion Level Reporter. This title recognizes the highest level of achievement in the Canadian greenhouse gas Challenge Registry® Champion Level Reporting System. CH2M HILL's contributions helped Suncor Energy Inc. earn the honour by surpassing the CSA's most rigorous reporting standards.



## Starbucks Coffee Company

Starbucks' mission is to be the premiere purveyor of the finest coffee in the world, maintaining uncompromising principles while they grow. Starbucks is committed to a role of environmental leadership in all facets of their business. CH2M HILL is working with Starbucks to inventory their GHG emissions and to identify and evaluate emission reduction opportunities.

## USEPA Climate Leaders Program

The USEPA Climate Leaders Program is an EPA industry-government partnership that works with companies to develop long-term comprehensive climate change strategies. Partners set a corporate-wide greenhouse gas (GHG) reduction goal and inventory their emissions to measure progress. Partners identify themselves as corporate environmental leaders and strategically position themselves as climate change policy continues to unfold. Climate Leaders partners come from a variety of sectors, from heavy manufacturing to banking and retail. EPA chose CH2M HILL to help design and implement the Climate Leaders program by helping develop emission measurement and reporting protocols. We also assist partner companies in completing GHG emission inventories and establish emission reduction goals. Companies we have helped as part of this program include PSEG, El Paso Energy, General Motors, Calpine, AMD, International Paper, IBM, Eastman Kodak, BP, and others.

## California Climate Action Registry

The California Climate Action Registry was established with the purpose of helping companies establish GHG emission baselines against which any future GHG emission reduction requirements may be applied. CH2M HILL developed the Registry's GHG emission calculation and reporting tool known as the Climate Action Registry Reporting Online Tool, or CARROT. This tool is a web-based, multi-tiered database application that allows Registry participants to store and report GHG emissions data. Besides serving as a central repository for emissions data, CARROT supports many of the functional requirements contained in the Registry' general reporting and certification protocols.

## SC Johnson & Son, Inc.

SC Johnson & Son, Inc., is a leading provider of innovative consumer products. Family owned since 1886, the company is committed to environmental protections and the concepts of sustainability. CH2M HILL helped SC Johnson improve the efficiency and accuracy of its global GHG inventory. We identified opportunities to make improvements with respect to data collection, boundary setting, quantification, and data management. Additionally, CH2M HILL helped validate SC Johnson's proposed corporate GHG emission reduction target of 23 percent over a 5-year period.