

A Corporate User's Perspective on Carbon Accounting

Bruce S. Klafter

Head, EHS & Sustainability

Applied Materials, Inc. 



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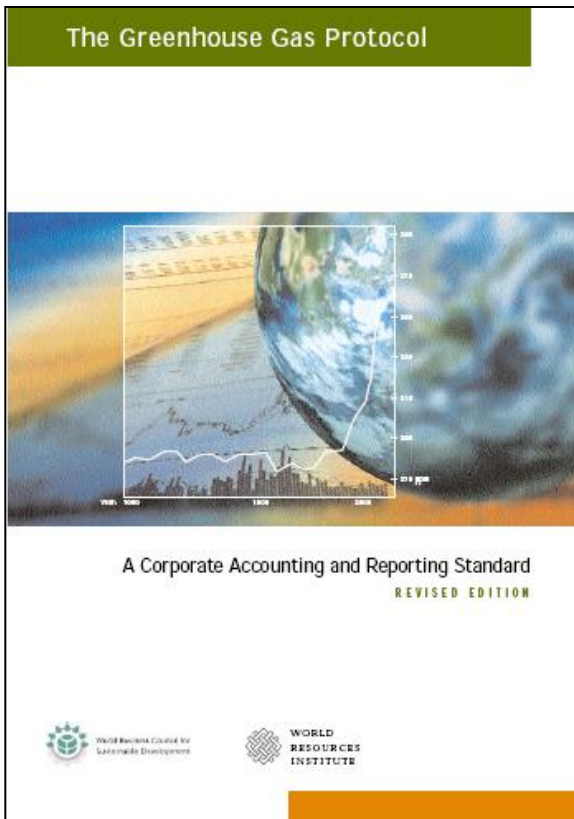
What are some key sustainability initiatives at Applied Materials?

Energy Efficiency	<ul style="list-style-type: none">▪ Energy optimization in existing buildings▪ Green buildings (new construction)▪ Solar PV installations + green energy purchases
Design for Environment	<ul style="list-style-type: none">▪ More energy-efficient/environmentally friendly products▪ PFC minimization and accounting▪ Representative life cycle analyses
Pollution Prevention	<ul style="list-style-type: none">▪ Waste minimization (complimenting high recycling rates), e.g. paper use reduction
Employee and Public Outreach	<ul style="list-style-type: none">▪ Broad based sustainability education▪ Grassroots green teams▪ Impact on Federal climate/renewables debate

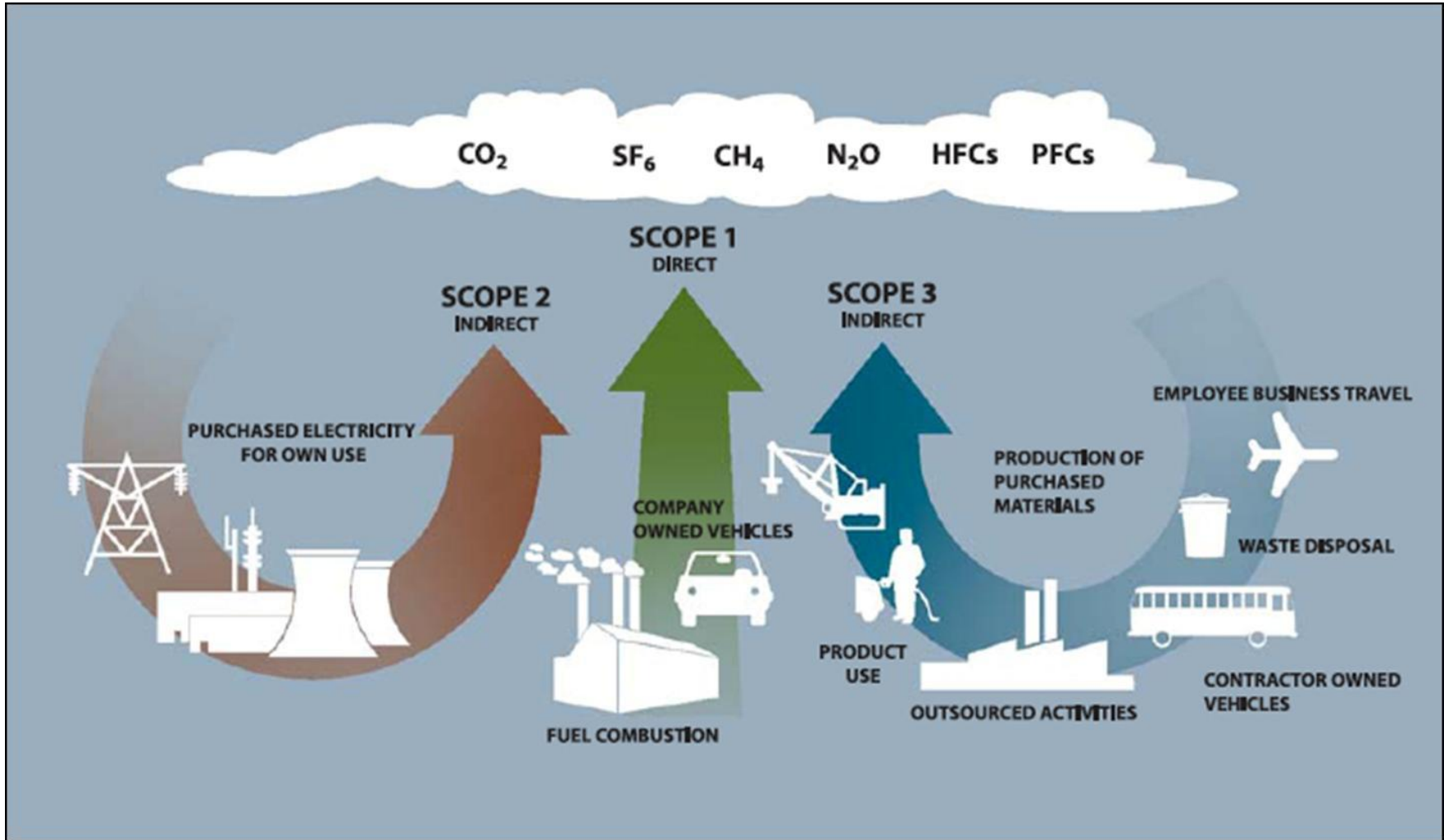
GHG Reporting – a 60 second primer

- The “mandatory” provisions apply to large emitters, usually that means 25,000 metric tons per year from a combustion source of some kind.
- Utilities, chemicals, cement, semiconductor and some other sectors are also specially targeted.
- Small and medium size enterprises who merely purchase electricity and natural gas are generally excluded – for now.
- Many enterprises wish to understand their footprint and manage it. Management implies accounting.
- Difficult to say when carbon trading or a tax will take shape and how it will be implemented (e.g. sectoral vs. economy-wide).

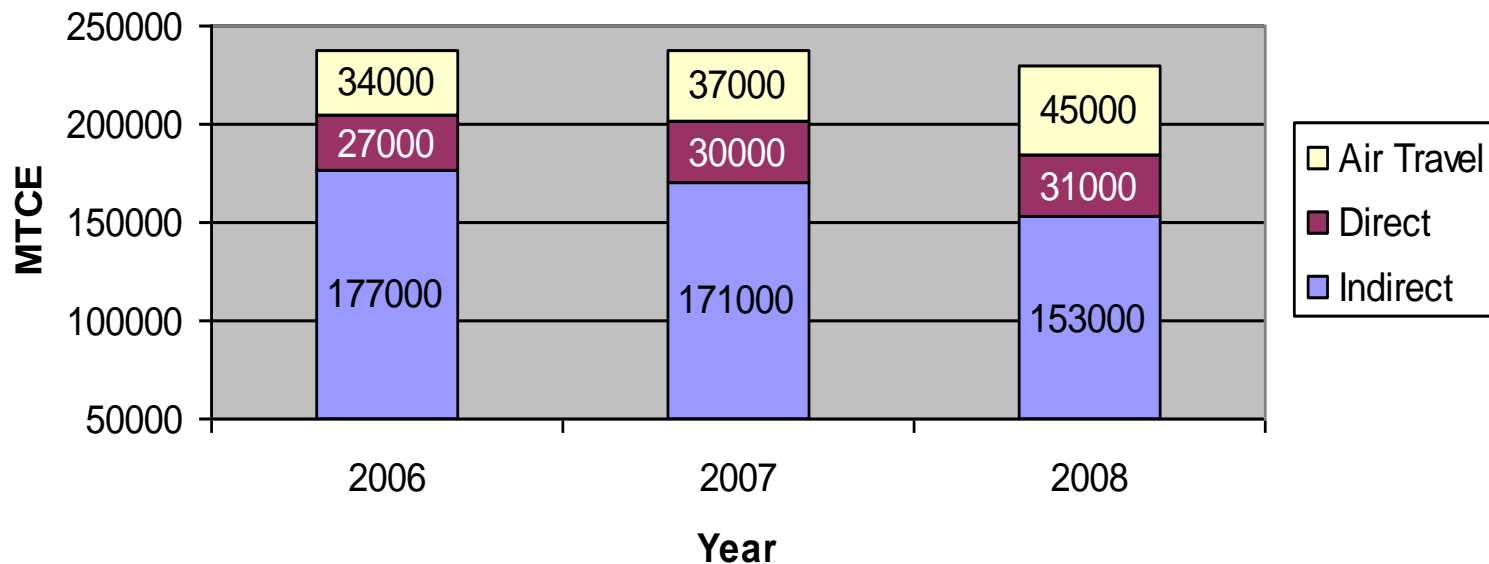
Accounting for Corporate Emissions



- **Scope 1** emissions = All direct emissions, i.e. owned or controlled by your company
- **Scope 2** emissions = Indirect emissions from use of electricity, steam, heating and cooling
- **Scope 3** emissions = All other indirect emissions upstream & downstream of a company, e.g. production of purchased goods & services; third-party transportation; use and disposal of a company's products; etc.



CO2 Emissions by Year and Type



- Excellent progress in terms of energy conservation and efficiency
- Natural gas use and other direct emissions are affected by weather
- Air travel is largely dependent upon business conditions
- Plans: supply chain, logistics, commuting, representative LCAs

Some Unique China Issues

- China is now the world's largest emitter of GHG, but sectoral data and company-level data is not readily available.
- China has pledged to reduce the carbon intensity of its economy by 40-45% (emissions / GDP).
- Electricity billing in China is unusual and regional emissions factors were only recently calculated. Province level data is sketchy and early estimates proved to be way off.
- Carbon accounting has been used for Clean Development Mechanism (CDM) Projects.
- Net: company-level carbon accounting for Chinese companies and/or operations remains challenging.

Key Accounting Software Requirements

- Pull/input data from utilities (electricity, natural gas, water)
- CO2 Calculation from invoiced data
- Analysis and display of data for communications
- Tracking and accounting by facility, country, and continent (or other business division)
- Reporting capability to meet Climate Leaders and Carbon Disclosure Project (CCAR and others)
- Green Energy purchases (aggregation, calculations, forecasting)
- Tracking of other projects that impact the inventory
- Tools to manage Scope 3 emissions

What have we learned (after 18 months!)

- The user experience is paramount, i.e. ease of use, flexibility, time required for training, etc.
- SaaS vs. enterprise products. Users want low-cost and ability to scale.
- On the other hand, companies need capability to automate calculations for “special” processes (e.g. PFCs)
- Products/companies should demonstrate capability to keep up with the likely rapid developments in the field.
- Some products were built from the ground up for carbon accounting, others are modifications/supplements to EHS suites or CSR products. A question of orientation.
- The crowded field is making choices difficult.



What does the future hold?

- Copenhagen (COP 15) produced very little, although the Accord is receiving some positive press of late.
- One of the major omissions was a framework for a linked, international carbon trading scheme.
- The Accord did call for accounting guidelines to assure that reductions and related finances are “rigorous, robust and transparent.”
- The result is carbon trading is largely voluntary and will remain so for the near term. Accounting rules are largely undeveloped.
- National governments and states will continue to regulate and to set up their own sub-national reporting and trading schemes.
- State of the Union: "it means passing a comprehensive energy and climate bill with incentives that will finally make clean energy the profitable kind of energy in America."
- The other major driver is supply chain management – Wal-Mart and others are driving hard to understand the footprint of their suppliers.

Late Breaking News

- The U.S. Securities and Exchange Commission (SEC) is issuing an interpretive guidance on “Disclosure Related to Business or Legal Developments Regarding Climate Change” Companies will have to address:
 - The impact of legislation and regulation;
 - The impact of international accords;
 - The indirect impact of regulation or business trends, meaning both risks *and* opportunities due to technological, political or scientific developments.
 - Actual and potential material impacts due to physical changes in the climate.
- The first several of these subjects requires accounting and other information.