



**Overview of Carbon Footprinting and
Sustainability Assessment & tools to
support these evaluation processes.**

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Climate change acquires “teeth”

Theoretical discussion has been supplanted by regional US mechanisms to influence energy price signals to address climate change.

Two approaches to reconciling true costs:

- Carbon management
- Sustainability



Greenhouse Gas Emissions

Carbon management, or assessing the carbon “footprint” of an entity, addresses climate change “narrowly” by treating the reduction in the emission of six gases as a proxy for the attainment of an environmental equilibrium.

Current regional legislation involving cap and trade schemes support carbon management goals.

Sustainability

- Balance between resources consumed to produce and recycle a product or service, and the benefit it provides to our environment.
- Often called the “triple bottom line”, since it takes into account a firm’s financial viability, environmental sustainability and societal contribution or burden.
- No accepted way to quantify sustainability.

Carbon Management thrives

Carbon management will become “real” as regulation kicks in and carbon credits rise in market value.

- Current price is \$3.38/MT in the voluntary RGGI market.
- European CER's are currently selling for \$15 - 16.00/MT
- European trading (on the ECX) in emissions credits increased 170% in 2008 totaling more than 2.8 billion tons.



Sustainability remains unregulated

- Energy sector reticent due to public oversight and inability to quantify results.
- Most RFP's emanating from Public Sector
- More associated with “Economic Development” than with energy efficiency.

Sustainability characterized by broad qualitative guidelines:

- Indefensible in regulatory setting
- No reconciliation between economic, social and environmental measures; no unified metric.
- Some *potential* leakage into EE via “Co-benefits” and “avoided costs” clauses.

Regulatory advances



Public opinion shifts and is expressed through the regulatory process:

- Xcel Energy – shareholder suit forces utility to restate forecasts taking into account *possible* future climate change regulation.
- Waterloo – farm vote sides with biofuels against traditional coal alliance to quash proposed coal plant.
- Cap and Trade – regulated & voluntary

Cap and Trade

- RGGI
- Midwestern Regional Greenhouse Gas Reduction Accord
- WCI



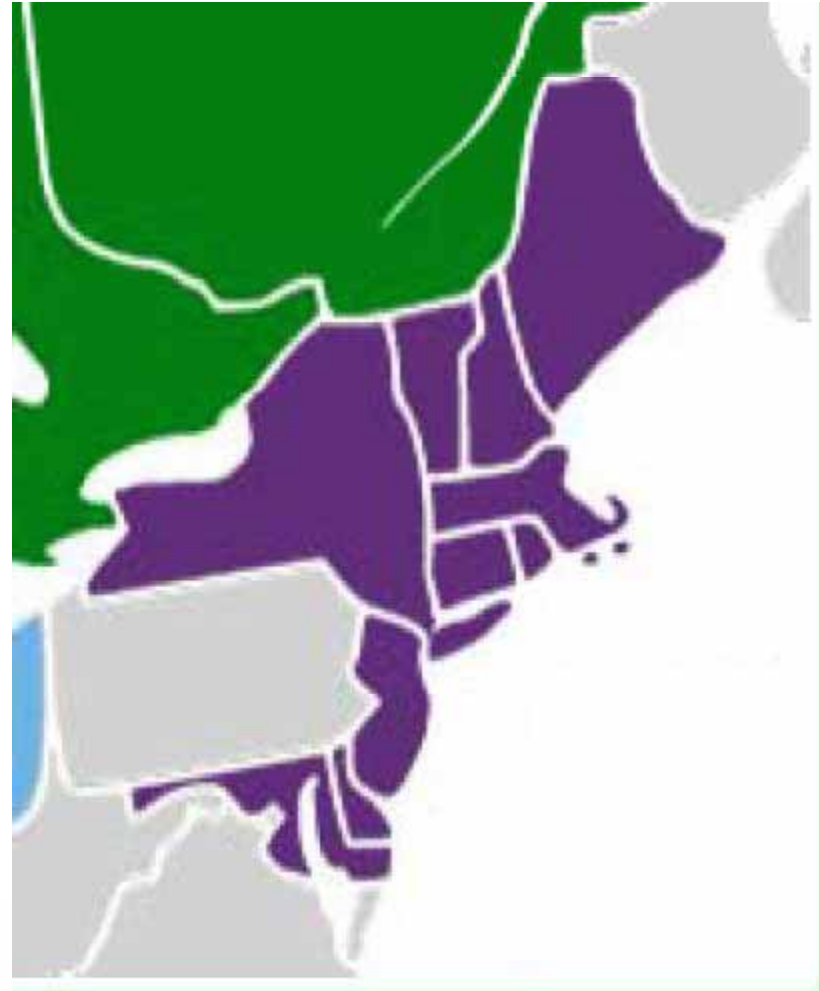
Regional Eastern Greenhouse Gas Initiative

Caps imposed January 2009

September 08 – 1st auction

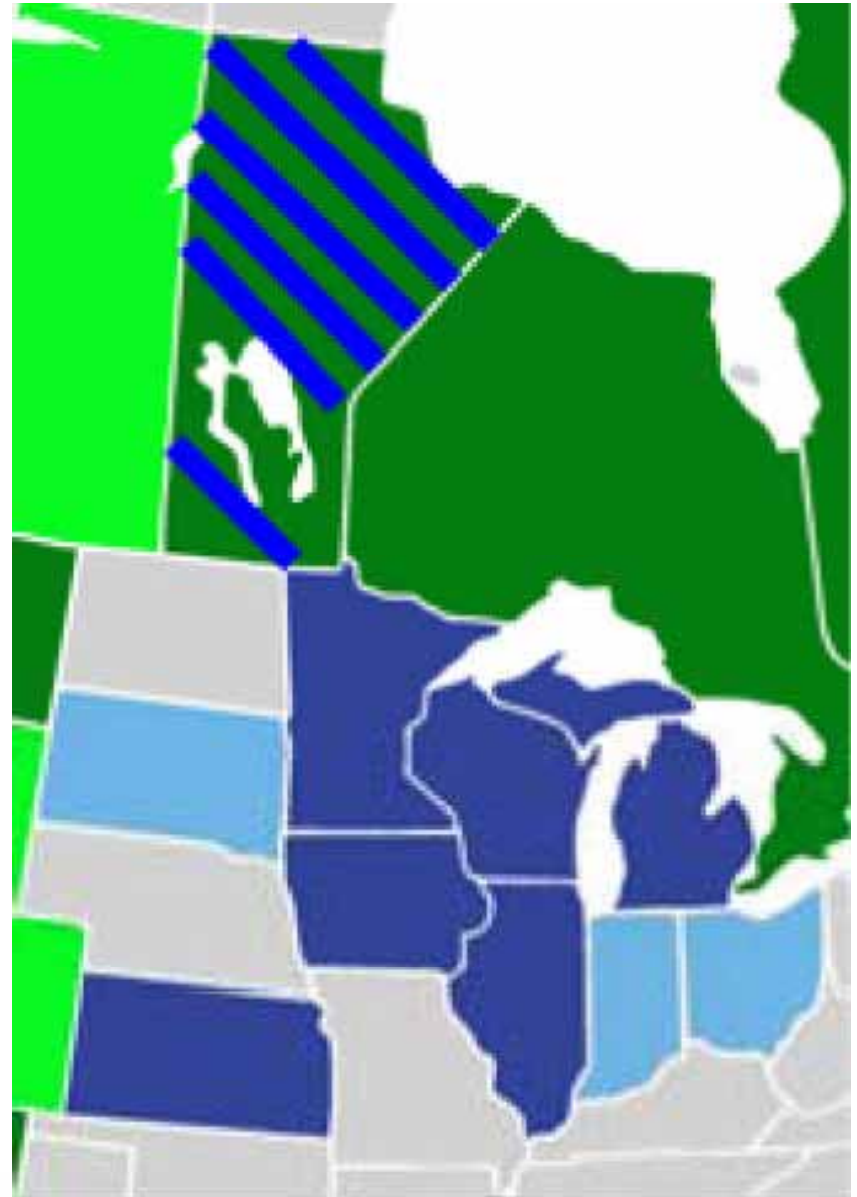
States set own limits

Modest reduction goals



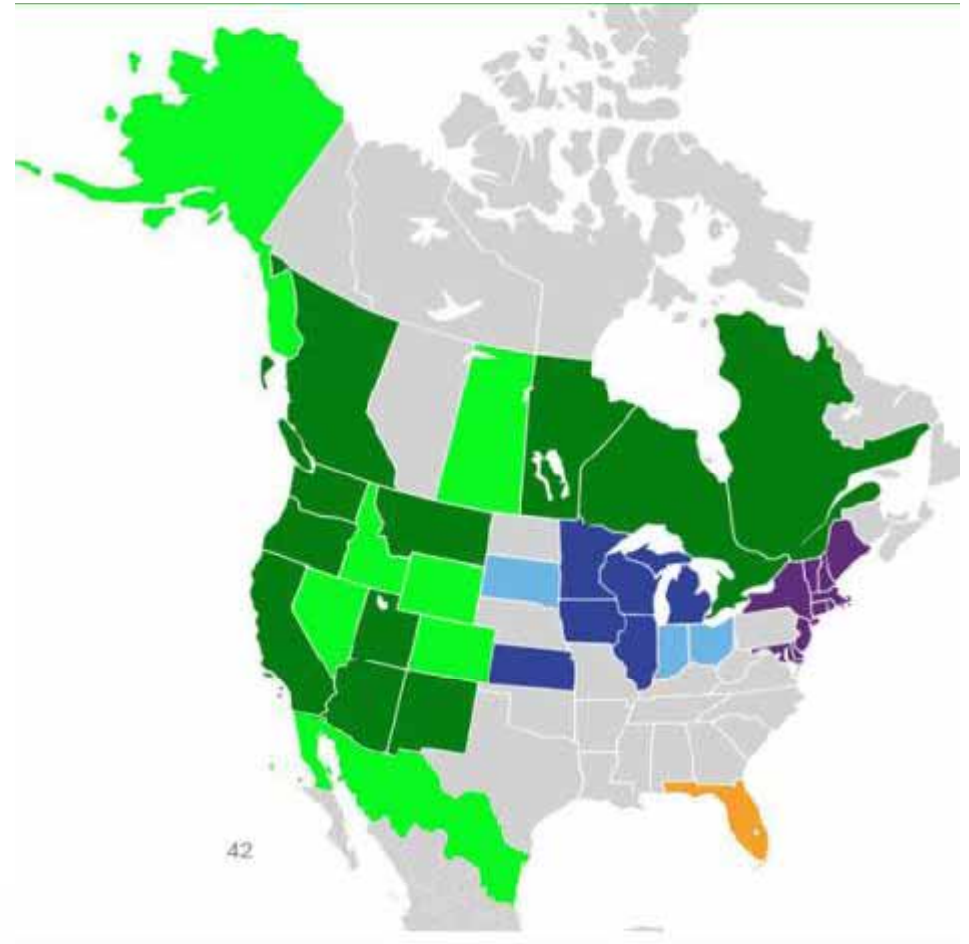
Midwestern Regional Greenhouse Gas Reduction Accord

- Starts in 2010
- 60-80% reduction
- Multi sector
- Auction only



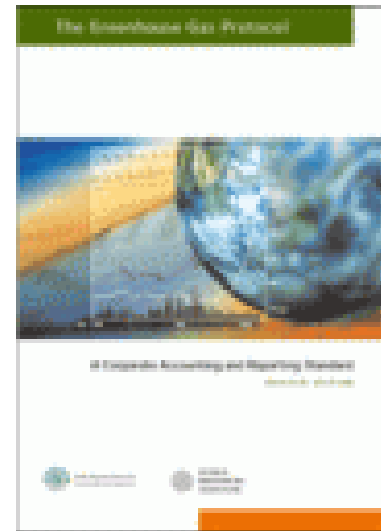
Western Climate Initiative

- 7 states & 3 provinces
- Reduce emissions 15% by 2020
- Multi-sector
- 25% auction
- 2,500 MTCO₂e



GHG protocols

1998: World Business Council for Sustainable Development & World Resource Institute



- establishes internationally accepted accounting and reporting standards for Greenhouse gases
- Give businesses guidance
- Provide transparency
- Compatible with subsequent tools

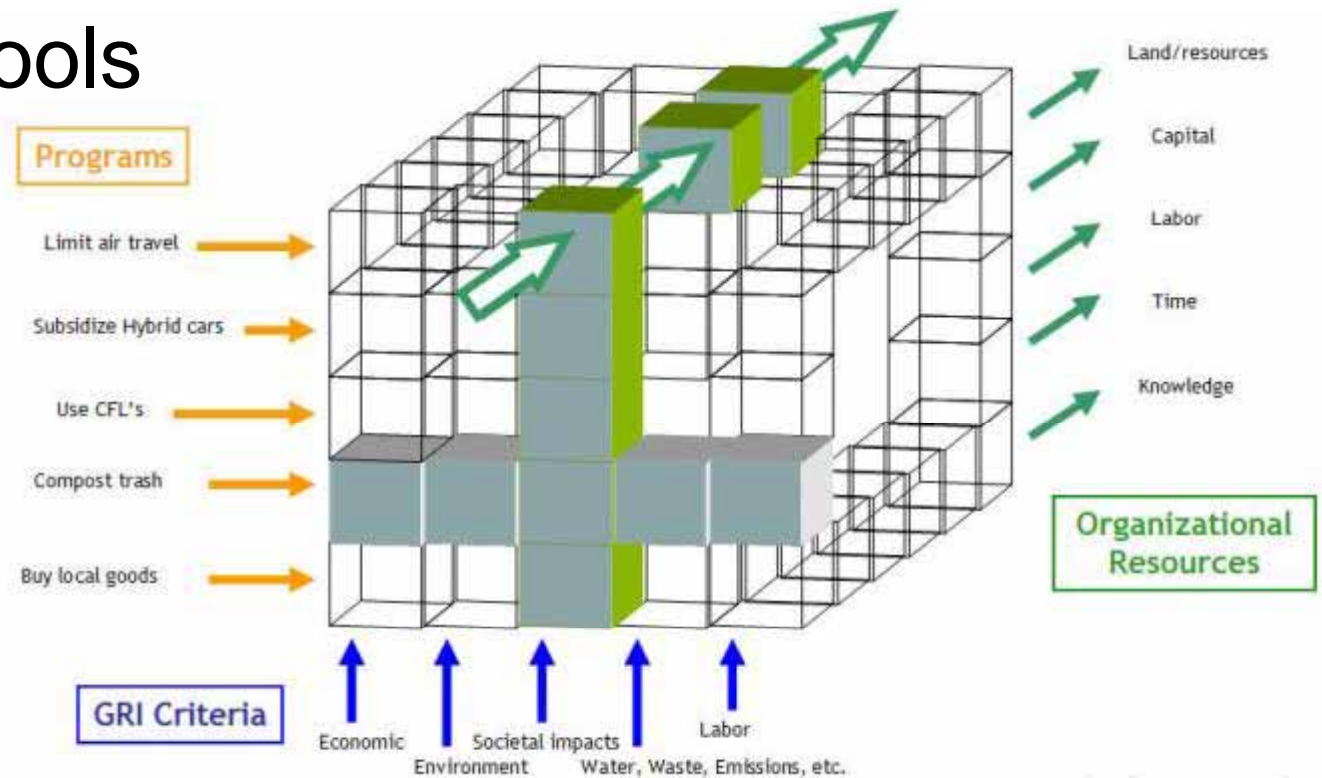
GRI – leading
standard for
Sustainability reporting



- Founded by the CERES and Tellus Institutes, based in Amsterdam
- 2006: G3 Guidelines
- Multi-stakeholder approach
- Not enough quantitative criteria
- No meaningful composite score

CALCULATION TOOLS

- Internet calculators = simplest
- Tools reflect differing approaches
- Tools reflect differing industries
- Review 5 tools



Climate Registry's CRIS tool

- CRIS is web-based reporting tool
- Access to CR verified reports
- Certification for Reporters or Verifiers.
- Objective: Compiling Report
- Not an economic modeling tool
- Little support for data gathering
- Likely to become the model for national reporting programs.



Genuine Metrics

- Spreadsheet based tool
- Combines GRI & Genuine Savings
- Adjustment to net income
- Monetized result
- Able to compare and contrast
- Benchmark with others
- Decision-making help



SAS Sustainability Management Scorecard

- Built on existing BI software
- Relies on GRI indices
- Complex data analysis
- “What if” capabilities



- 1999 - International Council for Local Environmental Initiatives
- *ecoBUDGET*
- informs how budget decisions impact natural resources capital.
- Public sector needs back-of-napkin solution.

GEMS

- DOE & NASEO
- CA endorsement
- Green initiatives
- Manage W.A.G.E.S.
- Track CO2 emissions
- Report impact of renewable energy

FORESITE
Your Environmental Management Partner

A single solution for your company's environmental concerns

ForeSite Systems, through its Global Environmental Management System (GEMS) software solution, helps multinational companies manage and monitor the environmental footprint of the products they make.

- How do regulations affect the products we make?
- Is there really one solution?
- Can I use GEMS to drive my corporate environmental initiative?

Regulatory Compliance Sustainability Corporate Initiatives Customers

GEMS helps you of the regulations which affect your product. It enables you to meet your present and future obligations and manage environmental product risk.

- REACH
- Packaging
- MSDS / Safety

GEMS is a total environmental software solution which helps you track and manage your product against a variety of metrics.

- Carbon Footprinting
- Design for the Environment

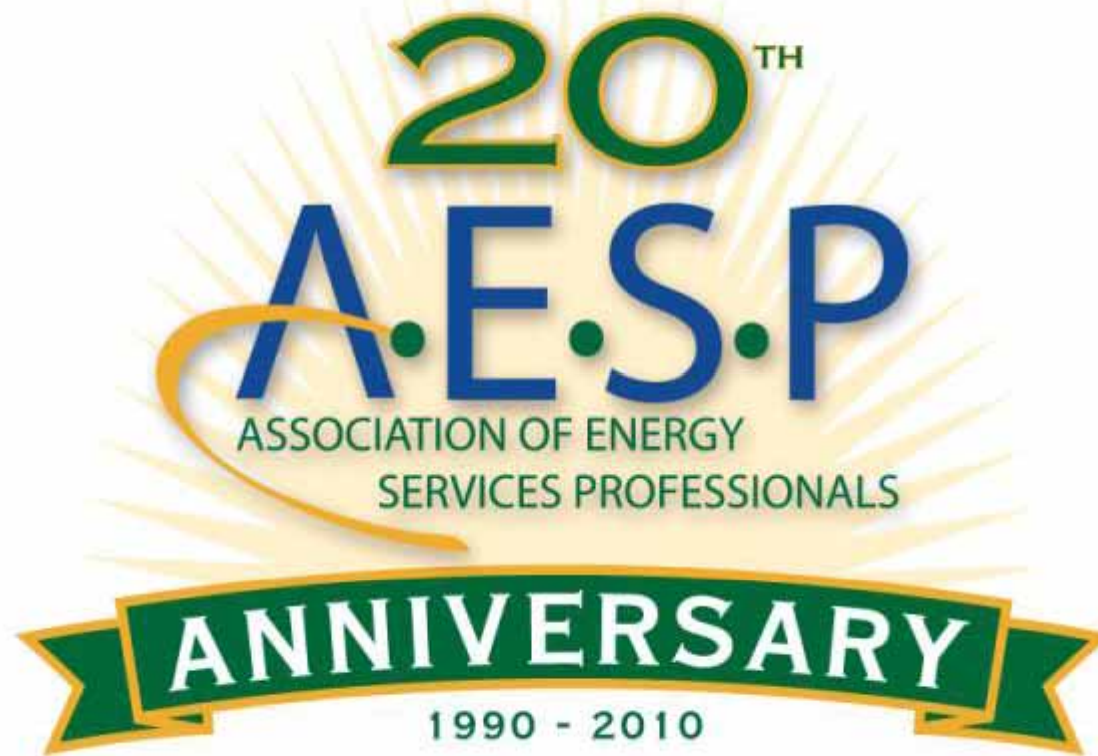
Many companies use GEMS to drive their environmental goals throughout their organization, and supply chain.

- Corporate Initiatives
- Industry Standards

Bausch + Lomb



- allows us to document the impacts of energy efficiency and demand response programs and different supply side options at market based values rather than at a constant value.
- more accurate Cost Effectiveness test.
- able to add numerous non-energy benefits.
- Not oriented at regulatory reporting, but at operational efficiency.



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