

**Professor Peter A. Appel, JD  
Dr. T. Rick Irvin, PhD, JD  
The University of Georgia, Athens, GA**

# **Sustainable Commerce: Georgia's Next Economy**

# Professor Appel and Dr. Irvin Sustainable Commerce

## Professor Appel:

- ❑ Overarching Observations
- ❑ Realities of Today's Economy
- ❑ Examples from Other Sectors

## Dr. Irvin:

- ❑ New and Emerging Sustainable Commerce Goods/Services
- ❑ Case Study 1: Tradable Carbon Credits, Ringgold, Ga.
- ❑ Case Study 2: Reducing Natural Resource/Energy Use
- ❑ Action Items: Georgia Sustainable Commerce Leadership  
How to Make Georgia the Center for Sustainable Commerce in the South

# Overarching Observations

- ❑ **Green Economies are a global market reality: smart companies know this – even if governments don't**
- ❑ **State, local and private initiatives allow government and industry to construct green economy elements now**
- ❑ **Lawyers Will Lead Green Economy Initiatives: Lawyers must compete in the market of ideas and bring unique talents to generate initiatives creating local/state green economies**
- ❑ **UGA Law is a resource for you**

# Why the Interest and Focus on Sustainable Commerce/Green Technology in Georgia?

*Atlanta Journal-Constitution, 19 March 2009*

## **State unemployment at record 9.3%**

- Georgia's jobless rate jumped to 9.3 percent in February, up from 8.5 percent the previous month.
- February unemployment rate is Georgia's highest since rate-keeping was standardized by the federal government in 1976.
- February also marked the 16th straight month in which Georgia's rate was above the national jobless rate, currently at 8.1 percent.
- "Times are difficult, but not hopeless," Labor Commissioner Michael Thurmond said in a press release.  
"I encourage all Georgians to keep the faith."

# Georgia's Participation in the Growing Green Technology/Sustainable Commerce Industry

*January 21, 2009*

## Feds to guarantee loan for plant near Soperton, Georgia



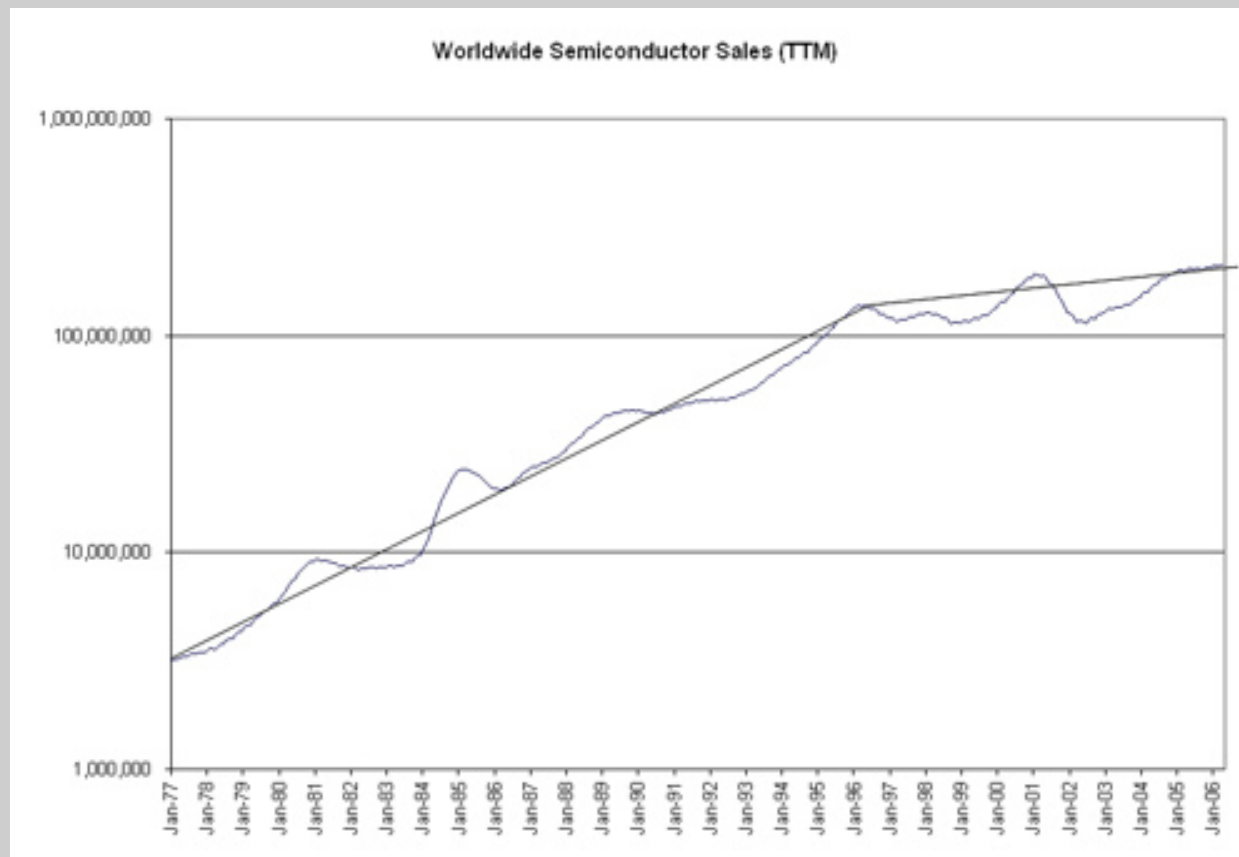
- ❑ The United States government will guarantee .. an \$80 million loan for Range Fuels to build an ethanol production plant near Soperton...
- ❑ The guarantee is one of several government incentives for the plant, which would use new technology to turn wood chips, switch grass and other non-edible biomass into ethanol, which can be used to power vehicles.

# Sustainable Commerce

## “Green Collar Economy”

Following in the Footsteps of the US Semiconductor Industry

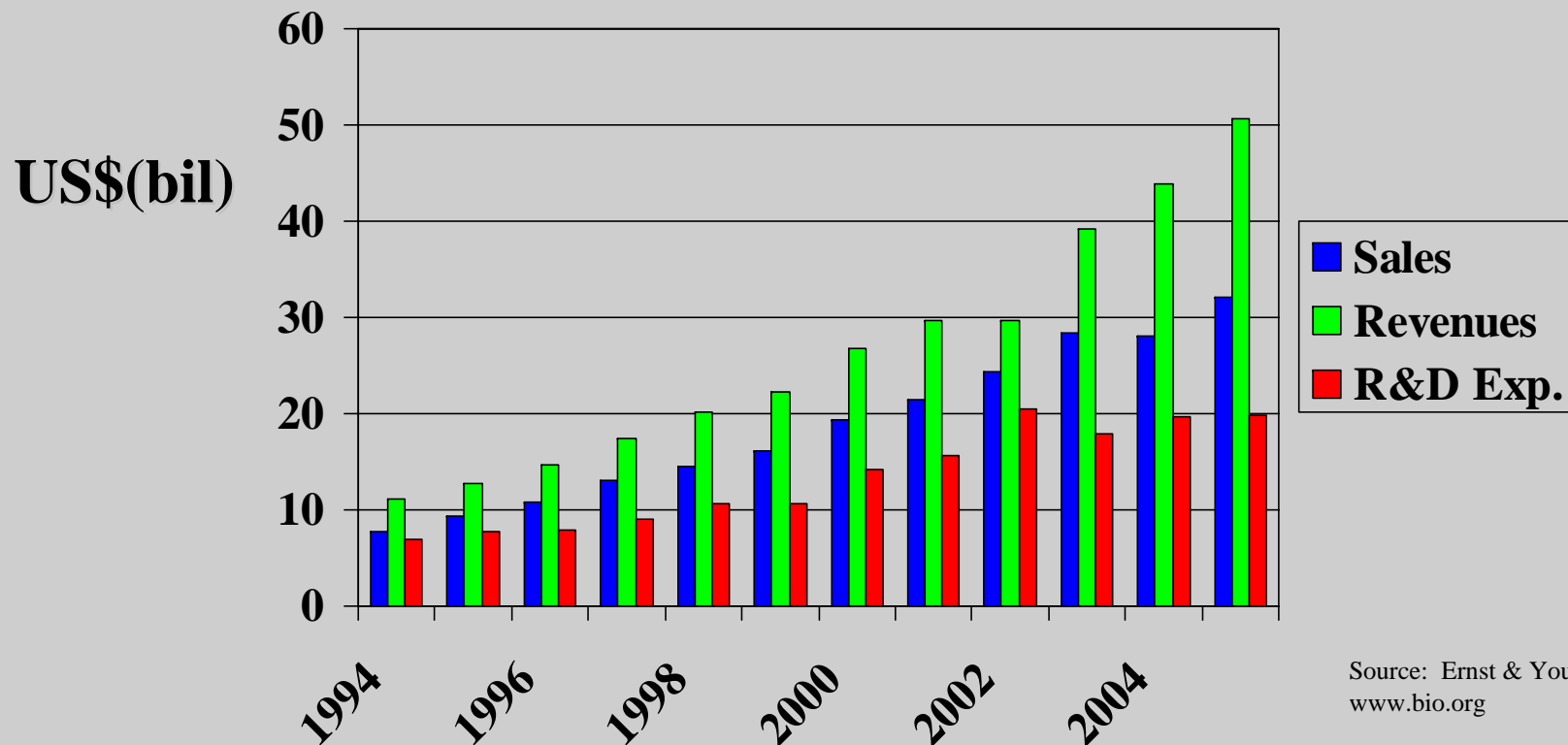
US\$



# Sustainable Commerce

## Following in the Path of Growth of the US Biotechnology Industry

Following in the Footsteps of the US Biotechnology Industry



# Sustainable Commerce Definition/Drivers

## Definition:

products and practices which

1. minimize environmental impacts *and*
2. optimize commercial value *while*
3. realizing public/private environmental benchmarks

## Includes:

- ❑ Low-carbon industrial technology base (less CO<sub>2</sub> emissions)
- ❑ Non-fossil fuel/alternative energy (solar, wind, hydroelectric)
- ❑ Renewable carbon fuels (biofuels)
- ❑ Reduction/recapture of natural resources used in manufacturing (new milk jugs)
- ❑ Green building practices (e.g. LEED®)

## AND.....

Systematic Reduction/Resolution in Environmental Hazards .....  
as we shall see



# Sustainable Commerce: New Opportunities For Existing Industry and Government Sectors

	Economic Element(s)	Traditional	SC-Driven
Group ①	Construction/Civil Engineering	Waste site management, remediation	Renovation/redesign of existing industrial facilities
②	Process/Chemical/Mechanical Engineering	Waste stream generation, management, control, disposal; recycling services	Design/operation of low carbon technology equivalents for existing industrial manufacturing/process equipment
③	Mechanical/Design/Manufacturing Engineering	air/water handling systems; packaging and production design	Life-cycle analysis for product design/development/production
④	Engineering Management/Consulting Services	Process design, permitting, regulatory activities	Management of carbon offset/raw material programs; smart growth planning/implementation

# Legal Tools to Construct Sustainable Commerce Initiatives:

## Case Study 1: Tradable Carbon Credits, Ringgold, Ga. (1)

### Ringgold/Catoosa County, GA:

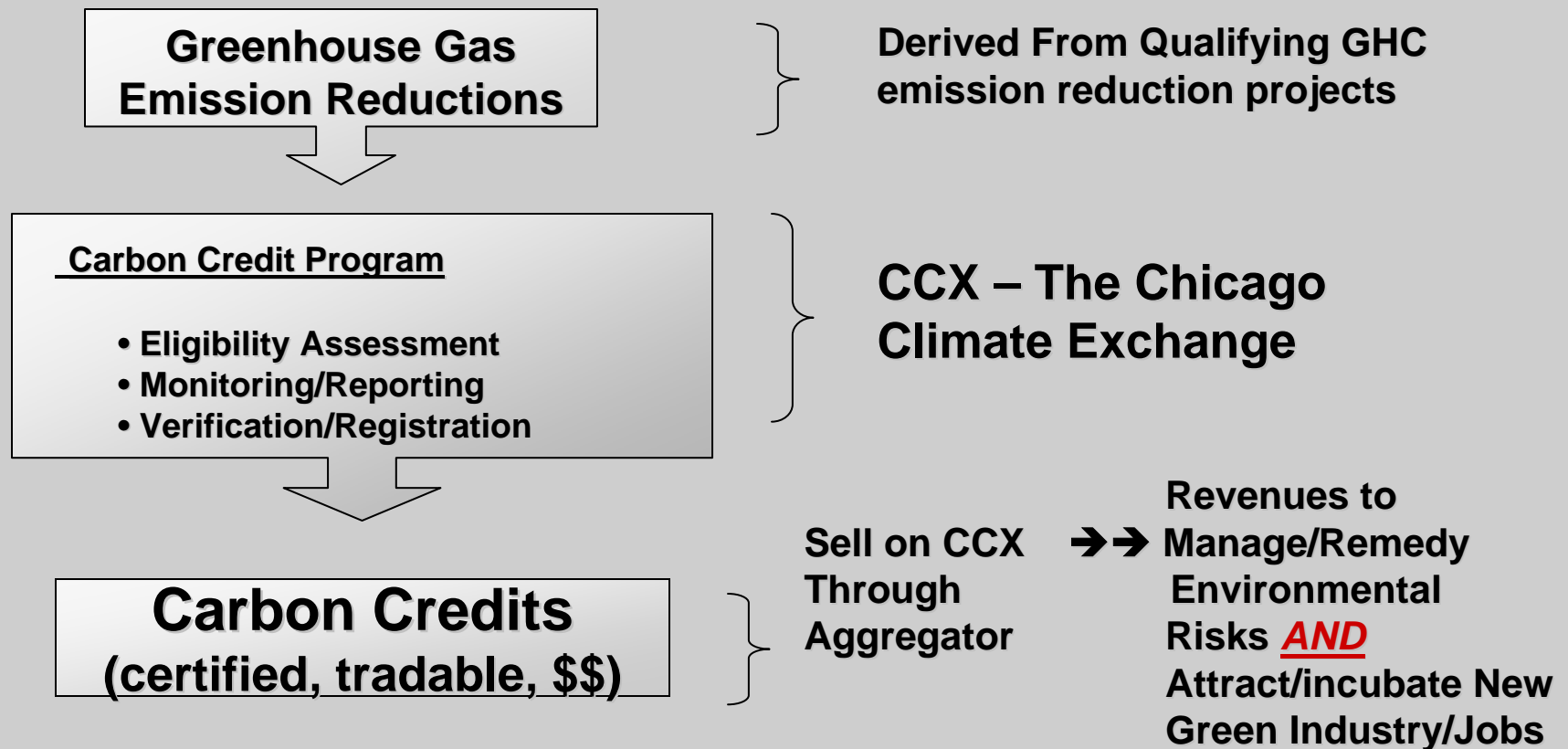
- ❑ Small town in NW Georgia (Cty population = 60,000)
- ❑ Owned inactive landfill: required to manage landfill methane (CH<sub>4</sub>)
- ❑ Negotiated to sell credits on the CCX or EU ETS
- ❑ Net Effect: Landfill has Methane Capture System  
City/County Can Net Thousands of Dollars Each Year

### Candidate Uses of New Revenues from Carbon Credits:

- Accumulated Environmental Risks (Inactive/Abandoned Waste Sites)
- Job-Training Programs to Attract New Green Economy Companies
- Recruit Companies Seeking to be Carbon-Neutral
- Mass Transport Programs Reducing Air Pollution (ground-level ozone)
- Improved Commercial/Residential Energy Savings
- Bank Carbon Credits to Recruit New Industry
- Create Low Carbon Infrastructure to Attract Industrial Relocation

# Legal Tools to Construct Sustainable Commerce Initiatives:

## Case Study 1: Tradable Carbon Credits, Ringgold, Ga. (2)



# Sustainable Commerce: New Opportunities For Existing Industry and Government Sectors

	Economic Element(s)	Traditional	SC-Driven
Group ①	Construction/Civil Engineering	Waste site management, remediation	Renovation/redesign of existing industrial facilities
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# Legal Tools to Construct Sustainable Commerce Initiatives:

## Case Study 2: Reducing Natural Resource/Energy Use (1)

**B&Q: UK-based home improvement retailer/EU importer**

- **Since 1990: insists all suppliers:**
  - itemize cradle-to-grave environmental impacts derived from their products
  - craft corporate policies and action plans to address these impacts
  - submit to internal/external/3<sup>rd</sup> party monitoring against B&Q’s standards
  - address environmental issues associated with the life-cycles of the products they supply to B&Q
  
- **B&Q Standards: “Sustainable Environment Principles” for all approved vendors/suppliers**
  - yearly (increasing) targets for renewable energy
  - remove listed toxic substances from all inputs
  - yearly (increasing) targets for % by weight recycle components/parts

# Legal Tools to Construct Private Sustainable Commerce Initiatives:

## Case Study 2: Reducing Natural Resource/Energy Use (2)

### Murray, Lawrenceburg, TN:

- ❑ >1 million sq foot plant, large percentage of local workforce
- ❑ Major Local Employer Beginning in 1953.
- ❑ Manufacture Outdoor Power Equipment (Mowers, Tractors)
- ❑ **Needed to Qualify as B&Q Vendor**
- ❑ **If not: Murray could lose significant potential annual sales + access to Major EU markets**

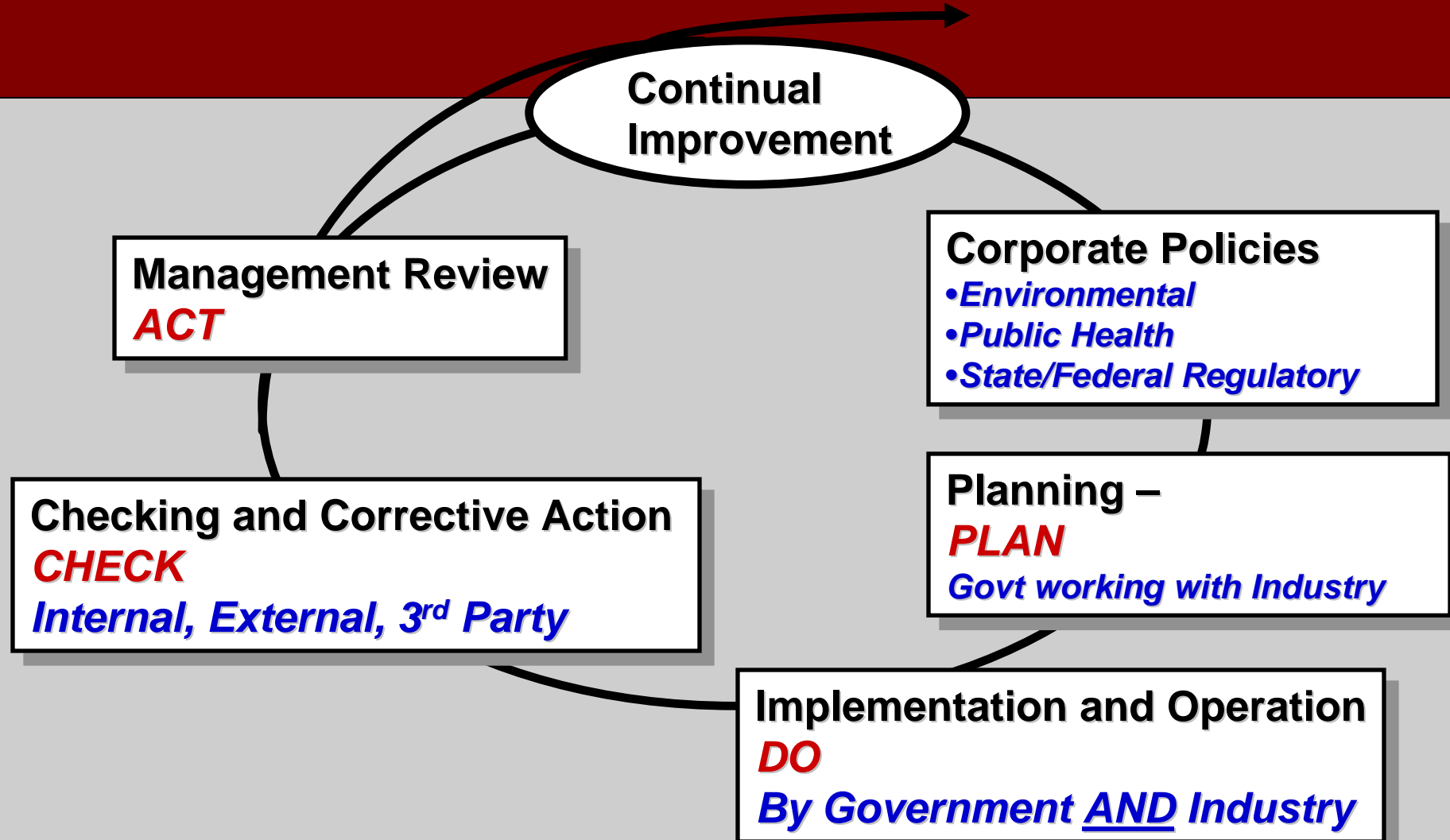
### Murray Created Integrated Quality and Environmental Regulatory Management System

- ❑ connected product design, procurement, environmental management departments
- ❑ ranked system to prioritize candidate paints, parts, inputs which met detailed environmental metrics
- ❑ scheduled twice - yearly third-party review of all facility operations to meet B&Q operations metrics
- ❑ required environmental dept sign-off for all pre-production product designs
- ❑ ongoing program identifying options for recyclable parts into design

**OUTCOME: Qualified as B&Q – Approved Vendor/Supplier**

# Legal and Regulatory Interface with Management Systems (1)

Plan – Do – Check – Act



# Action Items: Georgia Sustainable Commerce Leadership

## Item 1: Enhance Corporate R&D Tax Credits

Each **dollar** of State R&D Tax Credits



Up to **3 dollars** in net new R&D/Commercialization

Combination of:

1. New net R&D of existing organizations
2. Major source of attracting out of state firms to relocate/shift R&D and subsequent commercialization to states with most generous R&D tax credits

(Source: Federal Reserve, San Francisco, 2007).



# Action Items: Georgia Sustainable Commerce Leadership

## Item 2: Start-Up Tax Rates/Regulatory Approvals

Target lower taxes on new/relocated startup firms

Plus

Accelerate state agency regulatory approvals

khosla ventures

### Bay Area cleantech leadership at risk, says Khosla

- ❑ .. some of his portfolio companies quietly considering moving out of the state.
- ❑ “Because of the cost, they’re actually wondering whether they should be leaving California or not.”
- ❑ Local permitting cycles are so arduous that California solar companies like Khosla investment Ausra (solar cells) have started looking for new contracts and facilities outside the state because of the long permitting cycles.

# Action Items: Georgia Sustainable Commerce Leadership

## Item 3: Create Incubator Markets for New Products (1) Funding Green Infrastructure As Municipal Utility

### State/County/Municipal Financing of Sustainable Commerce Technologies as Utilities

Change local laws so that solar power systems/biofuels systems could be financed like gas lines or water lines, covered by a loan from the city and secured by property taxes.

Example:

1. Homeowner Installs Solar Power System: Cost \$50,000
2. Local government(s) lend homeowner this amount and allows them to pay it back with interest over 20 years as part of their property taxes.

States changing laws to implement:

California	Colorado	Arizona
Texas	Virginia	

# Action Items: Georgia Sustainable Commerce Leadership

## Item 3: Create Incubator Markets for New Products (1) Funding Green Infrastructure As Municipal Utility

### Advantages of Municipal Utility Funding Structure for Sustainable Commerce Infrastructure (vs. Traditional Commercial Paper):

1. Eliminates large initial costs of sustainable commerce investments by business/residents
  2. Removes business/residents worry they will not stay in one building/home long enough to recoup personal, up-front investment
  3. All business/residents eligible (not just those with good credit or cash reserves)
  4. obligation to pay loans attaches to building/house → passes to future buyers
  5. Creates local market for vendors of new sustainable commerce products
  6. Local governments, charging up to 7% for guaranteed loans, do not have same financial risk for lending as individual businesses/residents
- ➡ easier to access capital (e.g. bonds).

# Action Items: Georgia Sustainable Commerce Leadership

## Action Item 4: Target Intellectual Property (IP) Development, Relocation, Commercialization

### 4a. Target Private-Public Partnerships/Joint Ventures Goals: target, commercialize, capture early stage IP

Example: SEMATECH, "Silicon Prairie", Austin, TX

- Purpose: Ensure US Regained/Maintained Lead in Semiconductor Development vs. Japan
- 1986 – \$100 Million Dollar Budget Commitment From Gov't + Industry
- Results Today: 100,000 employees working for 3100 Tech firms

### 4b. Aggressive Use of State-Leveraged Investment Funds to Attract and Secure New IP Developed for Sustainable Commerce Goods/Services

- Marketing State-Funded R&D Facilities and Industry/Commercial Facilities
- Providing State Investment Funds to Attract/Take Ownership in New IP
- Underwrite cost of employee training/development
- Create entities to take ownership interests in new Sustainable Commerce IP

**Potential New Significant Revenue Base for Corporate/Environmental Law Firms**

# **Action Items: Georgia Sustainable Commerce Leadership**

## **Action Item 4: Target Intellectual Property (IP) Development, Relocation, Commercialization**

### **Other Potential New Significant Revenue Base for Corporate/Environmental Law Firms**

**4c. Better, More Aggressive Use of Existing Intellectual Property Law by Corporate/Environmental Attorneys to Capture Unrealized Value in Sustainable Commerce:**

- Products
- Processes
- Services

as has been done in the Biotechnology and Semiconductor Industry.

**4d. Better Use of Sustainable Commerce IP as securitization for both institutional and venture capital investments.**

**4e. Better, More Aggressive Use of EU IP Law**

Example: EU Law Governing Design Patents

# Conclusion: Eye on the Prize World Venture Capital Markets

**Clean technology venture investment: \$8.4 billion in 2008  
despite credit crisis and broadening recession**

**Even with diminished 4Q08 results, sustainable commerce/clean technology  
investment fundamentals remain strong**

Historical Clean Technology VC Investment By Year  
North America, Europe & Israel, China, India (US = 68% Total)

2001	\$506,780,774
2002	\$883,269,409
2003	\$1,258,565,762
2004	\$1,398,256,823
2005	\$2,077,524,074
<b>2006</b>	<b>\$4,520,208,949</b>
2007	\$6,087,179,844
<b>2008</b>	<b>\$8,414,259,610</b>

Source: Cleantech Group ([cleantech.com](http://cleantech.com))