

# Company to Customer to Climate Emissions Trading Exchanges: ETRM Tracking the Value of Carbon Credits

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October 2007

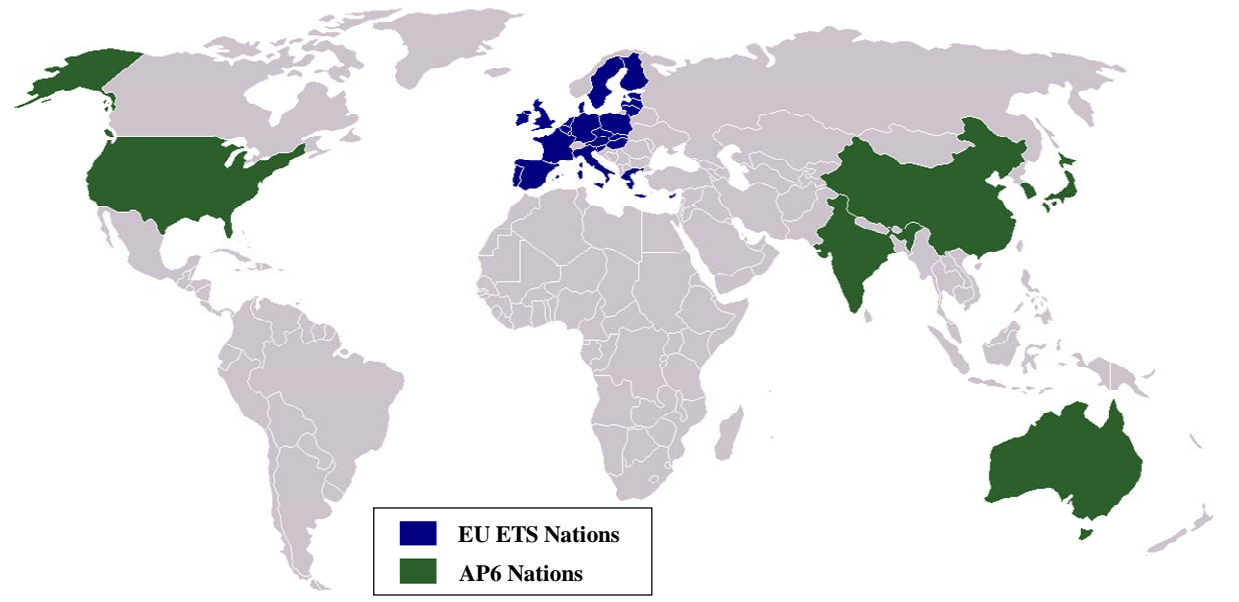


THE  
INSIGHT  
RESEARCH  
CORPORATION

- Rising Global Greenhouse Gas Emissions resulting in Climate Change
- Global Climate Initiatives
- Greenhouse Gas (GHG) Emissions measured in terms of Metric tons of Carbon Dioxide (Mt CO<sub>2</sub>)
- Emissions Trading Markets

- Financial Value attached to GHG Reductions
- Global Carbon Market Valuation
- Investment in Clean-Energy and Carbon Funds
- Green Communications Portfolio
- Potential for Reducing GHG Emissions and Environmental Footprint

- Kyoto Protocol Treaty



# Global Climate Initiatives



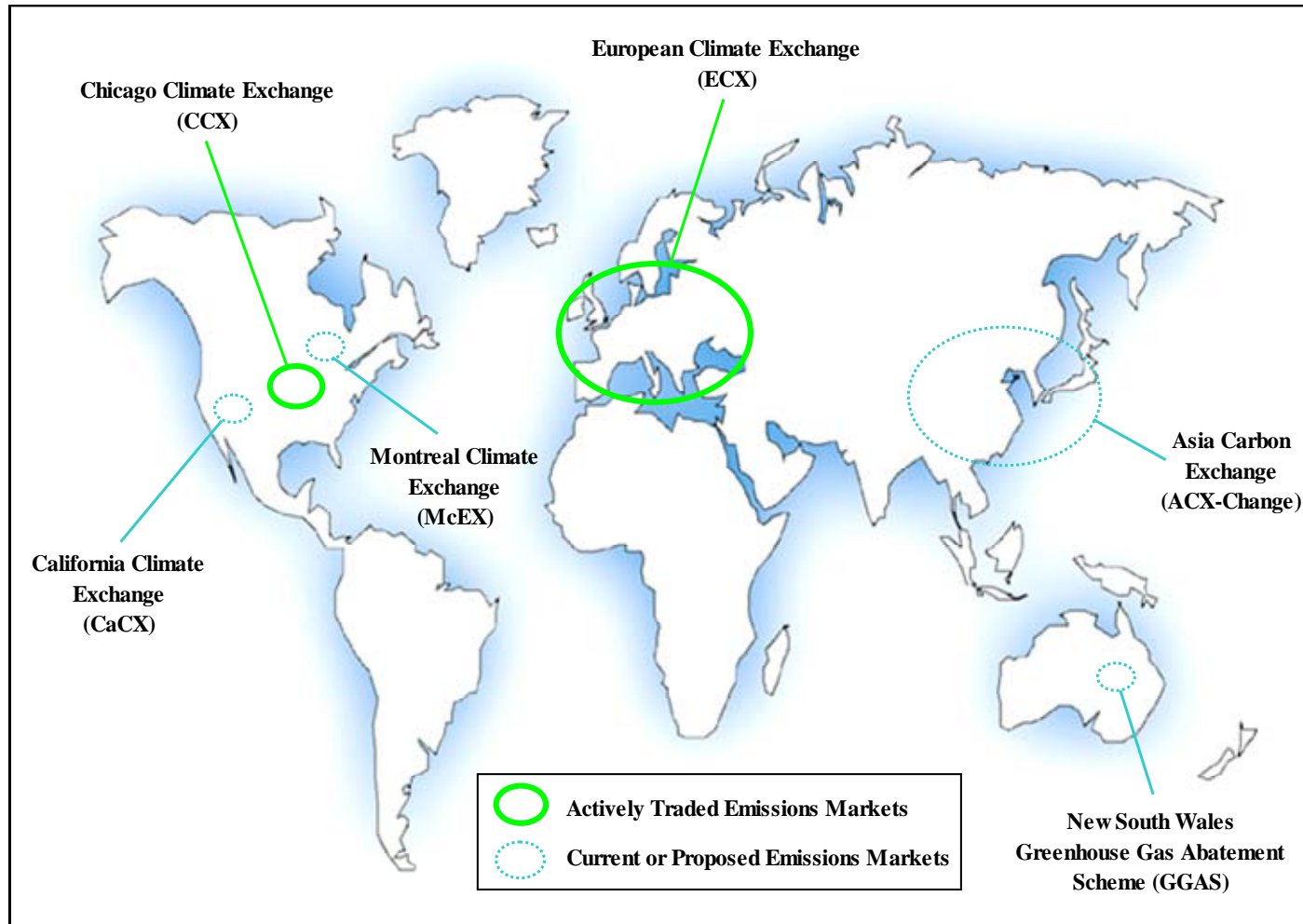
## C40 Summit Cities



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# Emissions Trading Exchanges



## Domains

- **Transportation Demand Management (TDM)**
  - Location-Based Services (LBS)
  - Unified Communication Services (UCS)
- **Demand-Side Management (DSM)**
  - Advanced Metering Infrastructure
  - Home Automation
  - Building/Facilities Management
  - IT Virtualization and Consolidation
- **Machine-to-Machine (M2M)**
  - Sensor Networks and Devices
- **ICT Device Recycling Reclamation**
- **Environmental Compliance and Audit Systems**
  - Energy Trading Transaction and Risk Management (ETRM)
  - Air Quality Monitoring
  - CSR Compliance and Financial Compliance (ENV only)

# Financial Value of Greenhouse Gas Emissions – Carbon Offsets/Credits

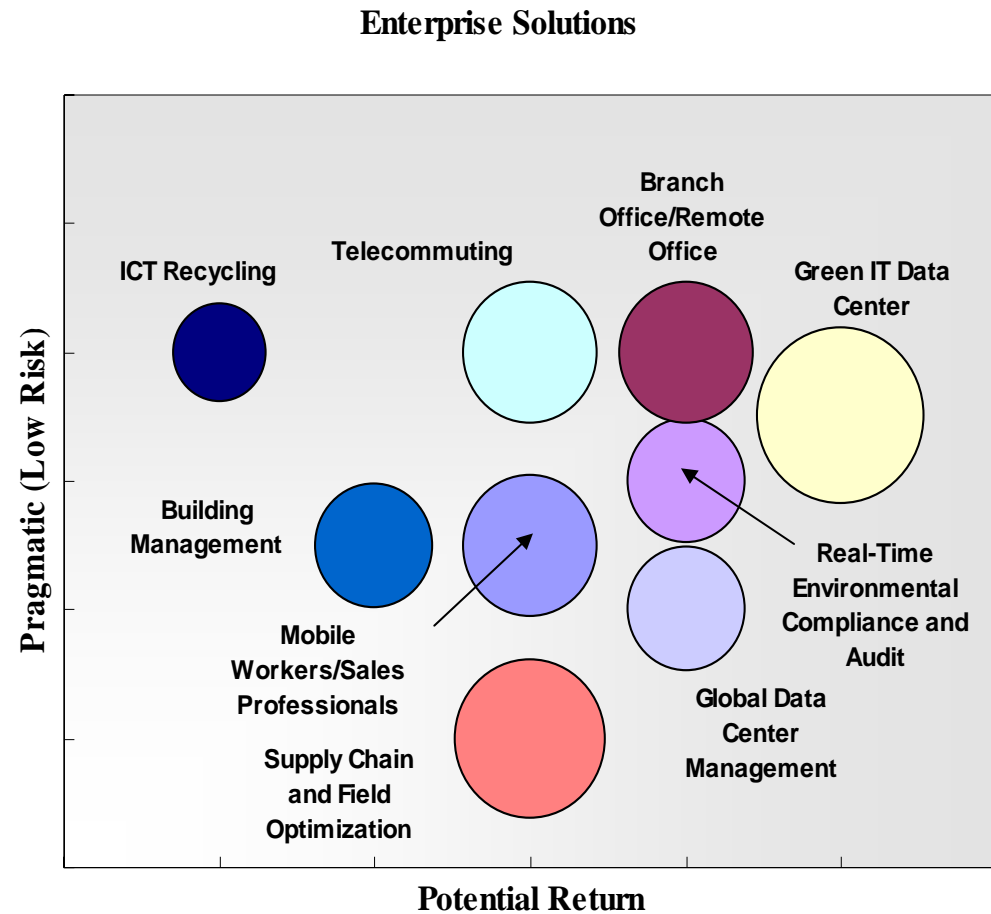
## Base Year, Forecast for Year End 2007

Note: Power Consumption increases and additional 1 Billion tons MtCO<sub>2</sub> from 28.5B to 29.5B MtCO<sub>2</sub>

Regional Value of Carbon Emissions (2007)					
	Population (millions)	Projected Electricity Consumption (million kWh)	Projected per Capita Electricity Consumption (kWh)	Projected Carbon Dioxide Emissions (million Mt CO <sub>2</sub> )	Est. Market Value of Carbon Emissions (US\$ million)
North America	431	4,575	10,625	7,117	\$153,008
Central and South America	443	852	1,923	1,112	\$23,902
Europe	585	3,301	5,645	7,014	\$150,799
Middle East	182	566	3,107	1,413	\$30,377
Africa	872	487	559	1,059	\$22,775
Asia & Oceania	3,572	4,981	1,394	10,843	\$233,128
<b>Total</b>	~6 billion	16 billion	---	29.5 billion tons	\$613 billion

## Major ICT-Based Green Initiatives graphed by:

- Potential (Return)
  - From Case studies
- Pragmatism (Implementation Risk)
  - Relative difficulty implementing change into enterprise
- Size of Bubble – ‘Buzz’
  - Indicates our impression of the Buzz or Hype in the media



## Major ICT-Based Green Solutions

- Data Center
- Global Data Center Management
- Telecommuting
- Mobile Workers and Sales Professionals
- Supply Chain & Field Services
- Branch Office/Remote Offices
- ICT Device Recycling
- Building Management
- Real Time Environmental Compliance and Audit
  - ETRM

# ETRM Historical Timeline

- 1992
  - Conceived in United States Federal Energy Regulatory Commission Order 636. Commencement of Deregulation Wholesale Gas Markets.
- 1996
  - US FERC Order 888. Commencement of Deregulation Wholesale Power Markets
  - US Federal Communications Commission (FCC). Commencement of deregulation of local loop voice telecommunications (local exchange service)
  - World Wide Web. Commences accelerated exponential growth.
- 1996-2006
  - ETRM evolves into custom built applications mainly confined to Energy. (BPO-driven)
  - Deregulated power markets, deregulated telecoms markets, accelerated Internet (data) growth lead to “new millennium/new energy environment
  - Derivatives market, International Swap Dealers Association (ISDA) explosive growth multiple commodities; including bandwidth, foreign exchange, interest rates, equity.

# ETRM Present Timeline and Forecast Period

- 2007
  - Evolving into business risk management including deregulated power, bandwidth, regulatory compliance cross-border and regional
  - No longer purview of energy companies, and financial institutions (hedge funds, commodities dealers, investment and merchant bankers, broker-dealers)
  - 2 distinct factions: specialty energy niche and CSR (business risk management)
- 2008-2013
  - Increasingly driven by Corporate Social Responsibility (CSR) shareholder initiatives. Environmental considerations.
  - Evolving into a Risk Management bidirectional communications solution
  - Twenty percent “financial trade driven”
  - Thirty five percent “power driven”
  - Requiring Real Time (RT) environmental audit and compliance processing
  - Integrated seamlessly with User Interface on front end and invoicing and accounting on back office end.
  - Interface with regulatory applications
    - Sarbanes Oxley
    - FCRP
    - US FAS 133, Rules for accounting treatment of Hedge contracts
    - Burgeoning Greenhouse Gas Emissions
    - Other
  - Offered by Service Providers as Software as a Service (SaaS) or on a Managed Network basis

## SO, Going Forward:

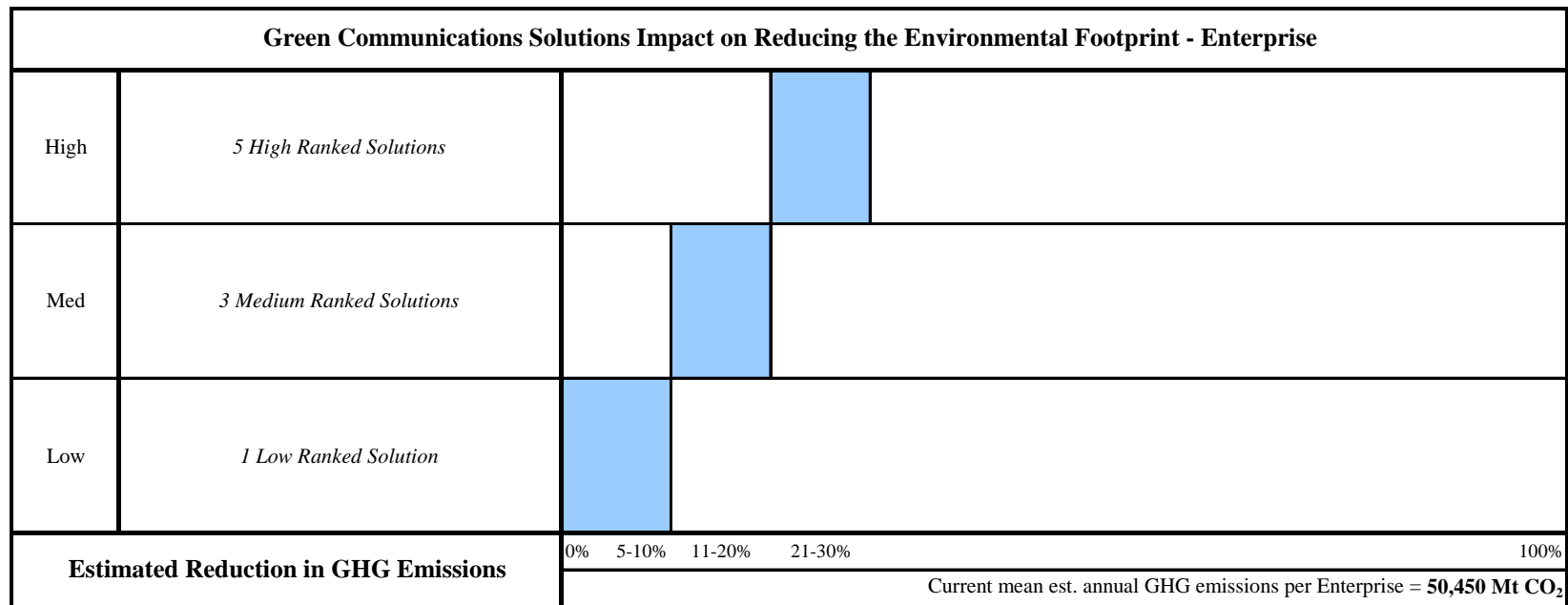
- **Client Server Technology**
  - Evolving into Standard Open Architecture
  - Despite security concerns delivers specific functionality
    - Risk management tools
    - Greenhouse Gas Emissions
    - Power Scheduling and Sourcing
    - Demand Side Management (DSM) enabled
- **Enterprises will adopt quicker Worldwide**
- **Small Medium sized Businesses (SMBs)**
  - Very accepting of the SaaS ETRM model either directly or via MNS offering from a Service Provider Data Center
  - Allows SMBs to acquire enterprise sophistication functionality at a lower initial cost
  - **SETS THE STAGE** for
  
  - **Consumer Adoption**

Revenue	YE2007	YE2013	Greenhouse Gas Emissions Reductions		
Americas	US\$415M	US\$2B		YE2007	YE2013
EMEA	\$381M	\$2.8B	Americas	367K	2.08M
Asia-Pacific	\$208M	\$1.9B	EMEA	245K	2.05M
Total	\$1.04B	\$6.7B	Asia-Pacific	37K	400K
Subscribers			Total	649K	4.53M
Americas	5.9M	33.6M	10% GHG Emissions Reduction		
EMEA	5.4M	46.0M			
Asia-Pacific	3.0M	32.5M			
Total	14.3M	112.1M			
CAGR, 2008-2013 39%					
CAGR, 2010-2013 44%					

## Value of Green Communications by Economic Sector

<b>Value of Green Communication Solutions by Economic Sector</b>			
<b>Economic Sector</b>	<b>Carbon Dioxide Emissions (Mt CO<sub>2</sub>)</b>	<b>Est. Market Value of Carbon Emissions (\$US)</b>	<b>Est. Value of Reductions from 'Green' Communications Solutions</b>
<b>Enterprise</b>	50,450	\$1,084,675	\$542,338
<b>Commercial Real Estate</b>	79,800	\$1,715,700	\$772,065
<b>SMBs</b>	6,045	\$129,968	\$51,987
<b>SOHO / Prosumer</b>	70.60	\$1,518	\$531
<b>Consumer</b>	20.20	\$434	\$130

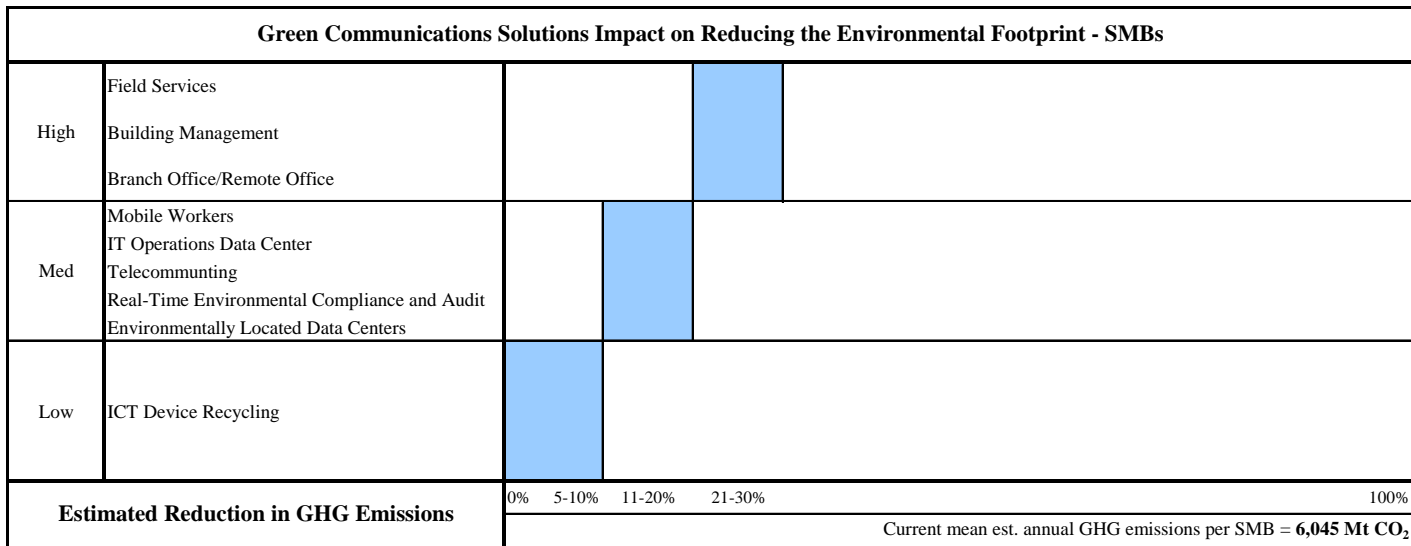
# Sample Enterprise Environmental Footprint Reduction



Throughout the course of the year, the average Enterprise environmental footprint is 50,450 Mt CO<sub>2</sub>. Implementing a subset of these nine solutions can positively impact the overall footprint by a range of 40% - 60% (20,180 – 30,270 Mt CO<sub>2</sub>). Applying the global valuation of US\$21.50 per Mt CO<sub>2</sub>, the financial benefit accruing to the Enterprise end-user is estimated to be US\$542,337.50 per annum.

Throughout the course of the year, the average Real Estate Management Company's environmental emissions footprint is 79,800 Mt CO<sub>2</sub>. Implementing several of these six solutions can positively impact the overall footprint by a range of 35% - 55% (27,930 – 43,890 Mt CO<sub>2</sub>). Applying the global valuation of US\$21.50 per Mt CO<sub>2</sub>, the financial benefit accruing to the Commercial Real Estate Management Company is estimated to be US\$772,065 per annum..

# Green Communications Portfolio



Throughout the course of the year, the average SMB environmental emissions footprint is 6,045 Mt CO<sub>2</sub>. Implementing an assortment of these nine offerings can positively impact the overall footprint by a range of 30% - 50% (1,813 – 2,417 Mt CO<sub>2</sub>). Applying the global valuation of US\$21.50 per Mt CO<sub>2</sub>, the financial benefit accruing to the SMB, on an annualized basis, is estimated to be US\$45,472.50.

Throughout the course of the year, the average SOHO Prosumer GHG emissions footprint is 70.6 Mt CO<sub>2</sub>. Cumulatively, implementing a variety of the six offerings can positively impact the overall footprint by a range of 30% - 40% (21-28 Mt CO<sub>2</sub>). Applying the global valuation of US\$21.50 per Mt CO<sub>2</sub>, the financial benefit accruing to the SOHO Prosumer from adopting the Green Communications solution subset is estimated to be US\$521.75 per annum.

Throughout the course of the year, the average GHG emissions per consumer are 20.2 Mt CO<sub>2</sub>. Easily implementing a set of three solutions can positively impact the overall footprint by a range of 20% - 40% (4-8 Mt CO<sub>2</sub>). Applying the global valuation of US\$21.50 per Mt CO<sub>2</sub>, the financial benefit accruing to the consumer from adopting the Green Communications solution subset is estimated to be US\$129 per annum.

## Climate Savers Computing Initiative

<http://www.climatesaverscomputing.org>

- Initiative comprised of 25 ICT companies including HP, Intel, Google, Microsoft, World Wildlife Fund, and US EPA.
- Goal is to increase energy efficiency computing; reducing energy costs by US\$5.5 billion and GHG emissions by 54 million tons by 2010.

## The Green Grid

<http://thegreengrid.org>

- Consortium of ICT companies seeking to lower overall power consumption and improve efficiency in global data centers.

## The Telework Coalition

<http://www.telcoa.org>

- Consortium of diverse companies seeking to enable virtual, mobile and distributed work.

# The Insight Research Web Site

- Please visit the Insight Research Web Site at <http://www.insight-corp.com> for more information about Insight.
- Visit “Custom Research Services” to learn more about our custom research capabilities.
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