

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

Daniel G. Bauer  
Assistance provided by  
Barry McCullough

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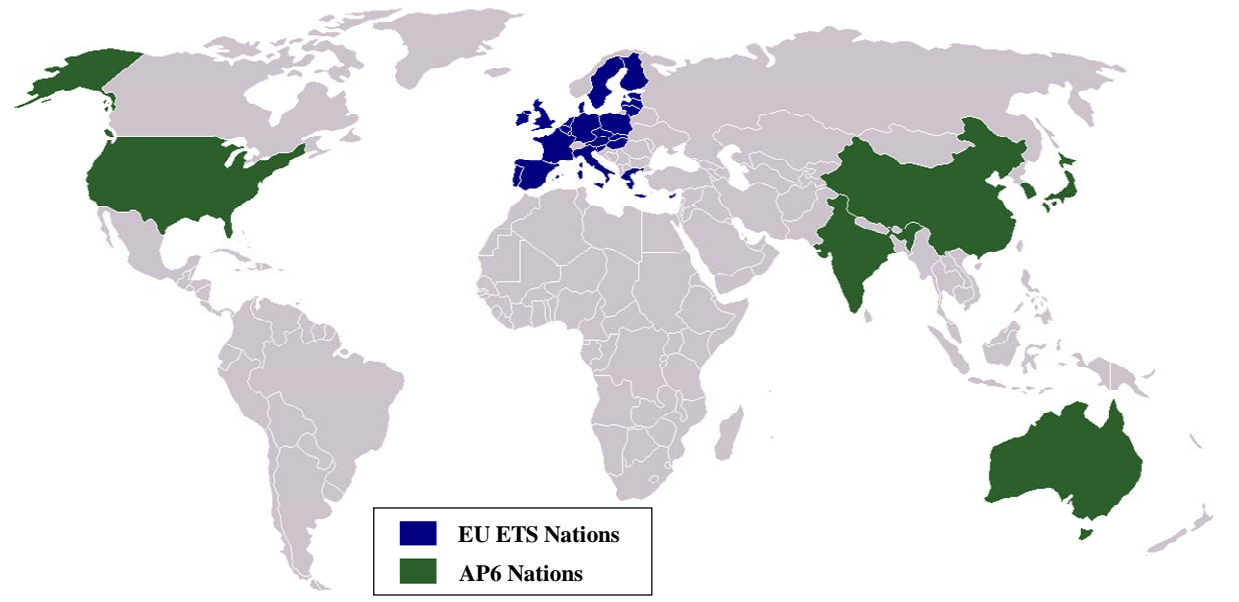


THE  
INSIGHT  
RESEARCH  
CORPORATION

- 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



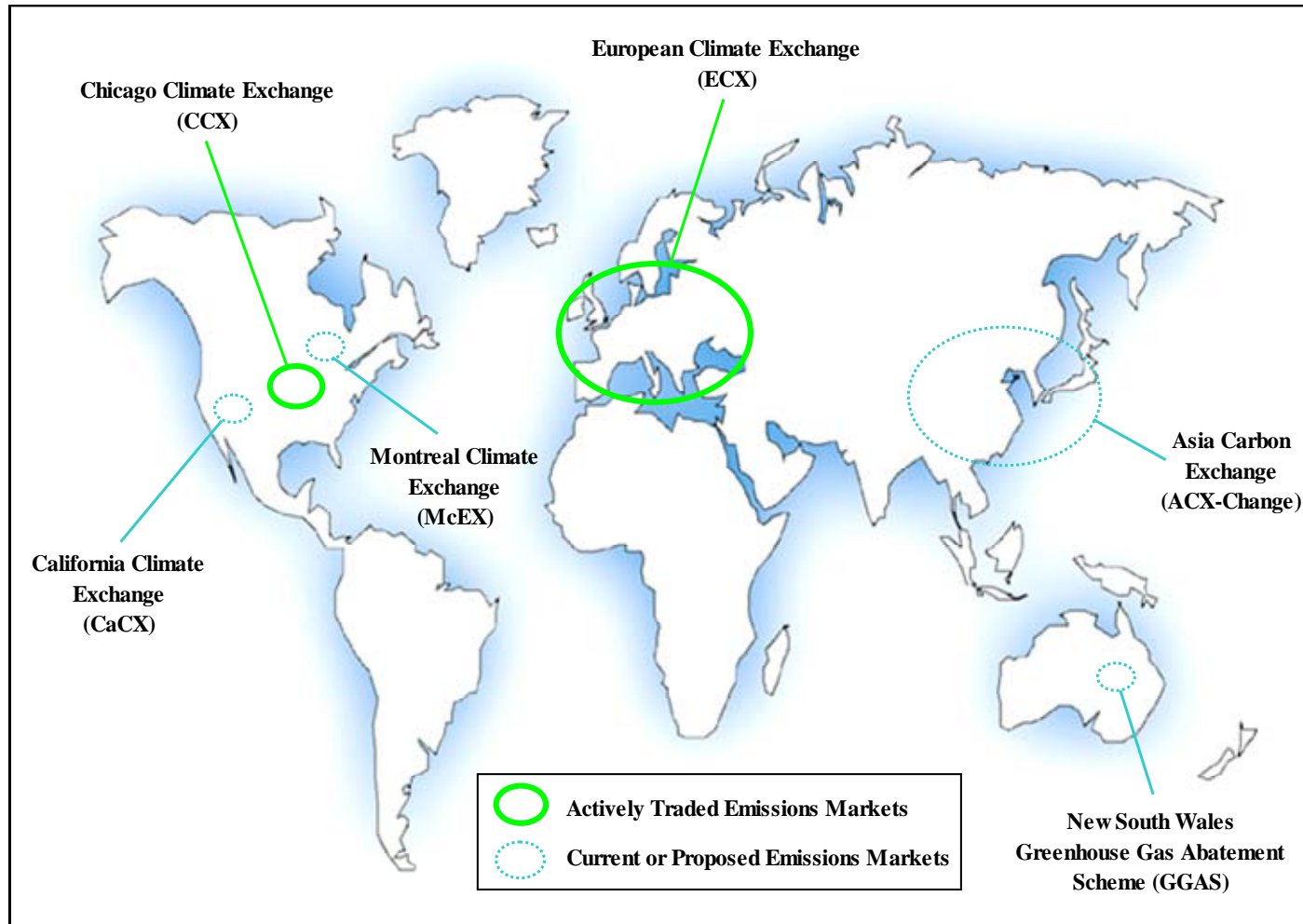
## C40 Summit Cities



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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

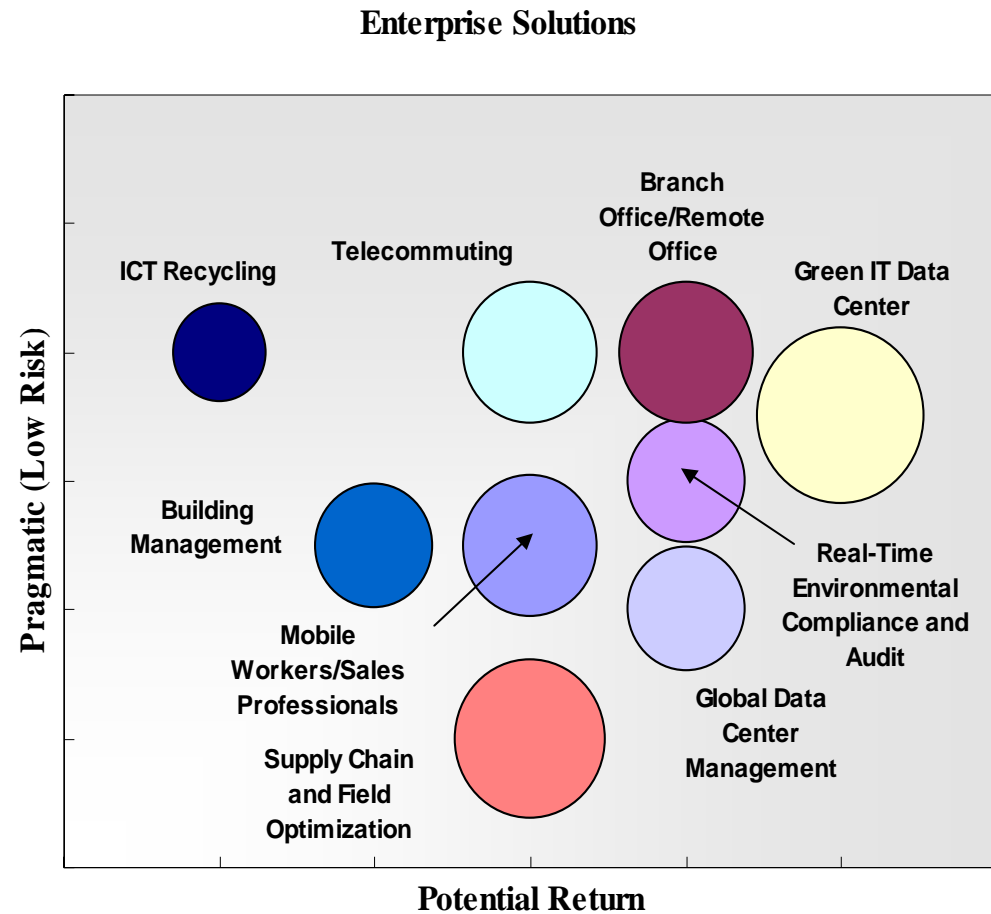
## Base Year, Forecast for Year End 2007

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:

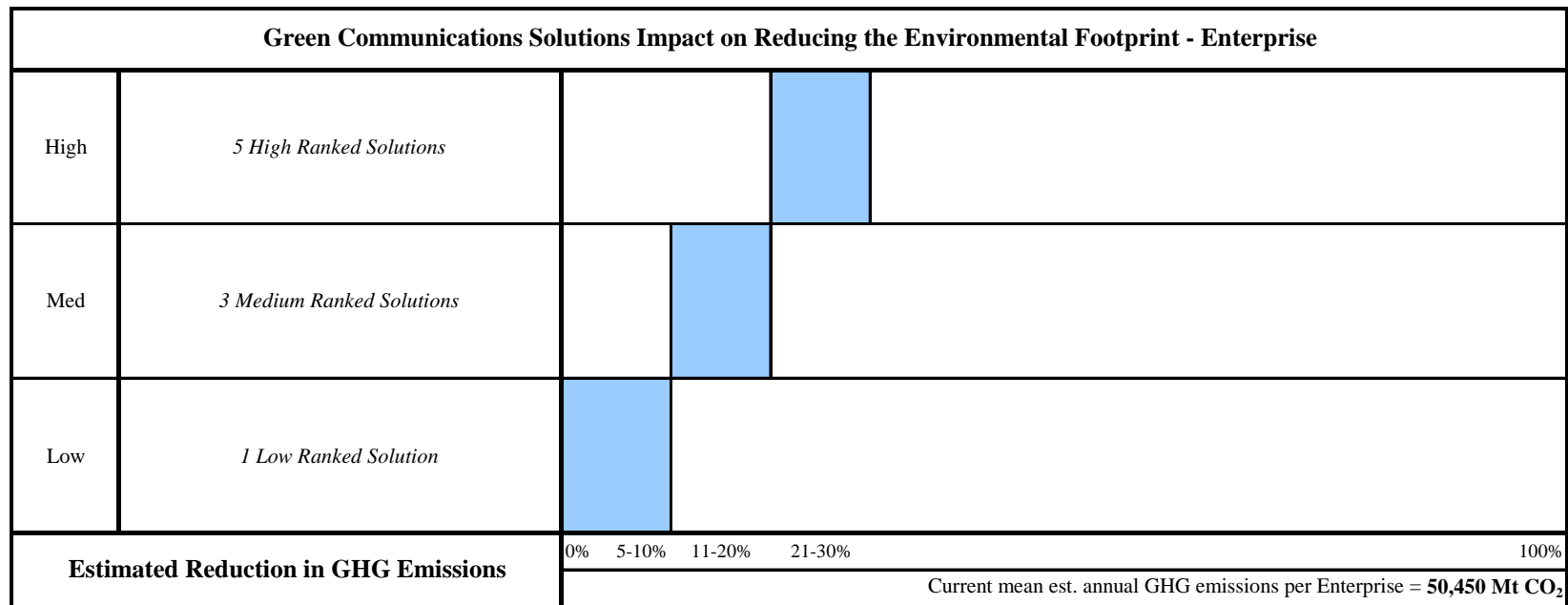
- **Client Server Technology**
  - Evolving into Standard Open Architecture
  - Despite security concerns delivers specific functionality
    - Risk management tools
    - Greenhouse Gas Emissions
    - Power Scheduling and Sourcing
    - Demand Side Management (DSM) enabled
- **Enterprises will adopt 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   |

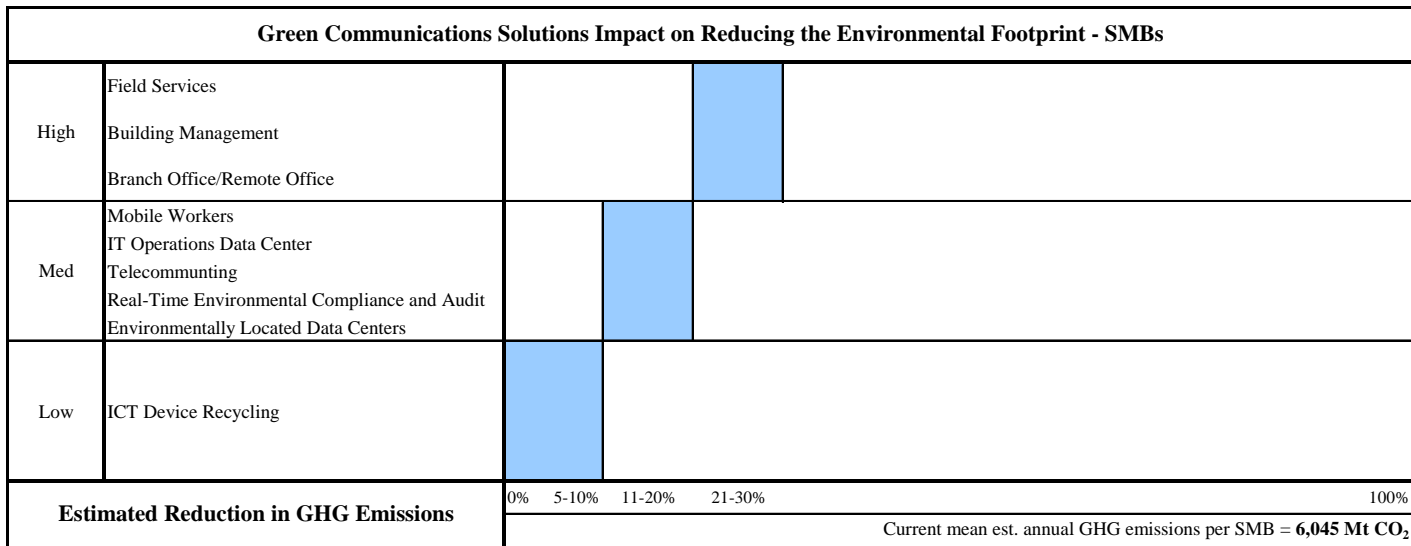
# Sample Enterprise Environmental Footprint Reduction



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.
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