Cisco Systems:
Tools for Data Management
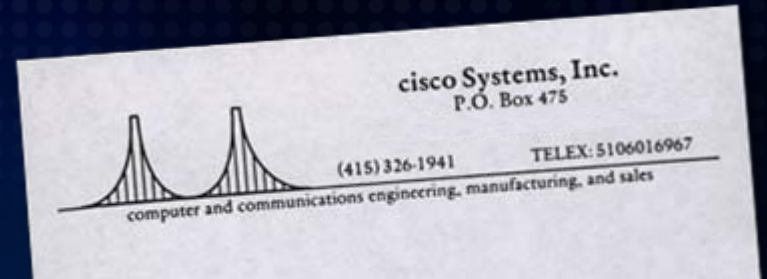
October 6, 2008

John Hailey

Sr. Mgr., Workplace Resources Department

Sustainable Development Group

Outline of Discussion

- **Introduction to Cisco Systems, Inc.**

  - **Rob Rolfsen**, Director, Workplace Resources

  - **John Hailey**, Sr. Mgr., Workplace Resources

  - **Andy Smith**, Director, DOMANI Sustainability Consulting, LLC

- **Green Mission and Governance Model**

- **Measuring Cisco's Carbon Footprint**

  - **Program objectives and approach**

  - **Gathering basic information**

  - **Selecting the basic software tool**

  - **Demonstration of the EDT**

  - **Modeling green choices – the SAS tool**

- **Q & A**

1984

cisco Systems, Inc.
P.O. Box 475

(415) 326-1941   TELEX: 5106016967

computer and communications engineering, manufacturing, and sales

Computer scientists,
Len Bosack and Sandy Lerner
found Cisco Systems

Bosack and Lerner run network
cables between two different
buildings on the
Stanford University campus

A technology has to be invented to deal
with disparate local area protocols;
the multi-protocol router is born

Acquisitions

1993
- CRESCENDO COMMUNICATIONS

1994
- NEWPORT SYSTEMS SOLUTIONS
- LIGHTSTREAM
- Kalpana — The EtherSwitch Company
- COMBINET
- nti
- GRAND JUNCTION

1996
- TGV
- STRATACOM — The Fastpacket Company
- TELEBIT
- NASHOBA NETWORKS
- GRANITE Systems
- NETSYS
- Metaplex

1997
- TELESEND
- SkyStone
- Global Internet
- ARDENT COMMUNICATIONS CORPORATION
- DAGAZ TECHNOLOGIES
- LIGHTSPEED

1998
- WheelGroup corporation
- NetSpeed
- PRECEPT SOFTWARE INC.
- CLASS Data Systems
- summa four
- AMERICAN INTERNET
- Clarity Wireless
- Selsius Systems
- PipeLinks

1999
- fibex systems
- Sentient Networks
- StratumOne
- GeoTel
- @mteva
- TransMedia Communications, Inc.

1999
- Calista
- MaxComm TECHNOLOGIES
- MONTEREY — Intelligence in the Optical Core
- COCOM BROADBAND ACCESS TECHNOLOGY
- webline
- Cerent
- Tazznet
- Aironet
- VBITS
- WORLDWIDE DATA SYSTEMS
- PIRELLI Optical Systems
- IEng ENGINEERING GROUP

2000
- Compatible Systems
- ALTIGA NETWORKS
- GROWTH NETWORKS
- atlantech
- JetCell
- PentaCom
- infoGear
- SIGHTPATH

2000 (Cont)
- Seagull
- ArrowPoint COMMUNICATIONS
- QEYTON SYSTEMS
- HyNEX
- NETIVERSE
- KOMODO technology, inc.
- Radiata
- NuSpeed
- ip MOBILE
- PIXStream Video Networking
- IPCell
- VOVIDA networks
- CAIS SOFTWARE SOLUTIONS
- ACTIVE VOICE
- ExiO Communications, Inc.

2001
- AuroraNetics, Inc.
- Allegro Systems, Inc.

2002
- Hammerhead Networks
- NAVARRO NETWORKS
- andiamo systems
- PSIONIC TECHNOLOGIES

2003
- OKENA
- SIGNALWORKS VOICE QUALITY
- LINKSYS
- meetingplace By Latitude

2004
- Twingo Systems
- Riverhead networks
- PROCKET NETWORKS
- BCN Systems, Inc
- PARC TECHNOLOGIES
- ACTONA TECHNOLOGIES
- NETSOLVE
- dynamicsoft.
- P-CUBE
- perfigo
- jahi Networks
- PROTEGO NETWORKS

2005
- airespace
- TOPSPIN
- SIPURA technology, inc.
- VIHANA

2005 (Cont)
- FineGround
- MiSecure
- netsift
- KiSS
- Sheer Networks
- Nemo — The Network Memory Company
- Scientific Atlanta
- IntelliShield

2006
- SyPixx NETWORKS
- audium
- METREOS
- Meetinghouse Network Access Security
- arroyo
- orative call.connect.collaborate.
- Greenfield NETWORKS
- TIVELLA

2007
- IRONPORT
- five across
- Reactivity
- neopath NETWORKS
- webex
- spanslogic
- BroadWare
- cognio
- LATIGENT
- Navini NETWORKS
- securent

2008
- Fast Data Technology
- NuOVA SYSTEMS

Cisco Worldwide Stats

WW Headcount

67,900 employees*

35% Engineering
30% Sales
35% all others

WW Portfolio

19.1 million sf**
(57% owned, 43% leased)

286 metros in 83 countries

456 buildings

Over $6B in Assets

San Jose Headcount

22,435 employees*

46% Engineering
54% all others

San Jose Campus Portfolio

51 buildings

6.6 million sf **
(90% Owned, 10% Leased)

End of April 2008
* Headcount = Persons Housed "PH" (includes Cisco employees and non-Cisco contingent workforce); numbers do NOT include Scientific Atlanta PH
    unless they reside in Cisco buildings, but DO include addition of acquisitions (WebEx & IronPort)

** Net-in-Service SF: Operating (Growth & Occupied) + Potential Excess + Approved for Disposition

Cisco's Green Mission

Operations

Impacting how we **operate** as a **business**

Products

Creating **efficiencies** and **innovations** in our **products**

Solutions

Providing **solutions** to our **customers** to address global environmental issues

Employees & Advocacy

Inspiring our **employees** to get involved and take action

Cisco's Green Governance
Cross-functional, collaborative, innovative

Cisco EcoBoard
- Set long-term vision & global strategy
- Resources allocation and alignment
- Accountability to Operating Committee

Green Task Forces
- Drives execution of vision and strategy through long-term programs & initiatives
- Accountability to EcoBoard

Working Teams
- Executes targeted near-term initiatives
- Accountable to Green Task Force

Cisco Joins EPA's Climate Leaders Program

- Joined April 2007

- Selected three parameters of participation

    - Buildings

    - Fleet travel

    - Airline travel

- First challenge – find best way to complete a thorough baseline inventory for owned <u>and</u> leased facilities

- Objectives of data collection process:

    1. Consistency across geographies

    2. Keep it simple – no expert teams; no expert tools

    3. Involve local Cisco representatives

    4. Automate wherever possible

Where To Begin?

- **Find a process that addressed multiple issues**
  - **Find folks who would eventually gather data ongoing**
  - **Determine what data was crucial and what was not**
    - **Building address, square footage, building ID number**
    - **Fuels used (elec., nat. gas, diesel, propane)**
    - **Provider name, account number, meter number**
  - **Result – a two-step process:**
    - **"Green Questionnaire" and "Env Data Tool"**
- **Two different training programs – one for the Questionnaire and another for the EDT**
- **QC – make sure baseline data is solid**
- **Assist extended team with new work elements, such as contact with landlords**

CISCO

SURVEY

Green Questionnaire

Cisco joined the U.S. Environmental Protection Agency's Climate Leaders program in April of 2007. As a Climate Leaders partner Cisco needs to develop a Greenhouse Gas (GhG) emissions inventory for our global operations, and we need your help to accomplish that. As a first step we need to collect some basic information about our operations at each facility we occupy, both owned and leased, and we need you to fill out this form for each facility for which you are responsible. This information will be loaded into a future online tool that will make tracking and reporting much simpler and more automated.

There is a 30 minute time limit to complete the survey online. As a result, it may be easier to print out or download a copy of the entire questionnaire, collect the data, manually write or type the data into the copy of the questionnaire, and then return to the computer and fill out the online questionnaire.

For assistance in filling out the questionnaire, please contact Andy Smith (andysm2@cisco.com) or John Hailey (hailey@cisco.com).

1. Please indicate below the facility for which you are completing this questionnaire? (A separate questionnaire should be used for each facility).

a. Business Entity Occupying

[Choose one]

b. Theater

[Choose one]

c. Country

[Choose one]

d. City

[   ]

e. Building ID

[   ]

NEXT

Done Local intranet

start | 2 Microsoft ... | Green Questio... | 2 Sametime ... | 3 Windows E... | Cisco Systems ... | Microsoft Acce... | 100% 6:14 PM

Green Survey, page 2

Environmental Data Tool (EDT)

- **First step was to gather all building-specific information just <u>one time</u>.**
  - **Building address, square footage, ID**
  - **Types of fuel used (electricity, natural gas, diesel, propane – also refrigerants)**
  - **Provider name, account number, meter number**
- **Tool pre-loaded with all building variables , and designed to automatically calculate GhG emissions**
- **Users are given access privileges and submit energy use data on a monthly basis**
- **Output tables and graphs are generated automatically**
- **Both an educational process as well as data collection tool**

Electrical Tab

Natural Gas Tab

Environmental Data Tool

Environmental Data Tool

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CISCO

CLIMATE
LEADERS
U.S. Environmental Protection Agency

Organization Cisco	**Country** UNITED STATES	**Building ID** SJC10	Clear	**Version**	3.0
Theater US AND CANADA	**City** SAN JOSE	**Address:** 300 East Tasman Drive			

Electrical | **Natural Gas** | Diesel/Light Fuel Oil | Propane | Refrigerant

Meter Number 44267080   Meter Details   Add Meter Number

Account Number: 3855906090

Natural Gas Provider: PG&E

Billing Period	Start Date	End Date	Usage	Units	Cost	Currency
Jul 08	24-Jun-08	24-Jul-08	7287	therms	12562.45	USD
Jun 08	22-May-08	24-Jun-08	9487	therms	13422.24	USD
May 08	23-Apr-08	22-May-08	10120	therms	12926.45	USD
Apr 08	24-Mar-08	23-Apr-08	22745	Therms	26813.22	USD
Mar 08	22-Feb-08	24-Mar-08	9697	Therms	5792.47	USD
Feb 08	23-Jan-08	22-Feb-08	11322	Therms	12479.19	USD
Jan 08	24-Dec-07	23-Jan-08	16180	Therms	17190.4	USD
Dec 07	26-Nov-07	24-Dec-07	13214	Therms	15060.55	USD
Nov 07	25-Oct-07	26-Nov-07	13705	Therms	14979.49	USD
Oct 07	25-Sep-07	25-Oct-07	7046	Therms	7527.73	USD
Sep 07	24-Aug-07	25-Sep-07	6570	Therms	6910.61	USD
Aug 07	27-Jul-07	24-Aug-07	5874	Therms	6476.45	USD
Jul 07	26-Jun-07	27-Jul-07	3291	Therms	4371.16	USD

Click on Row to Select Record

Add
Edit
Delete
Excel Export

Save & Exit

Admin

Unit Master
Report
Bldg Master
Meter Master
Ghg Report
Import Ghg

Welcome: hailey

Diesel / Light Fuel Oil Tab

Environmental Data Tool

Environmental Data Tool

CISCO

CLIMATE LEADERS
U.S. Environmental Protection Agency

Organization Cisco ▼   **Country** UNITED STATES ▼   **Building ID** SJC05 ▼   Clear   **Version** 3.0

Theater US AND CANADA ▼   **City** SAN JOSE ▼   **Address:** 325 East Tasman Drive

| Electrical | Natural Gas | Diesel/Light Fuel Oil | Propane | Refrigerant |

Fuel Provider Valley Oil ▼   Account Details   Add Fuel Provider

Account Number

Billing Period ▾	Purchase Date ▾	Amount Purchase ▾	Units ▾	Cost ▾	Currency ▾	Fuel Provider ▴
Apr 08	24-Apr-08	976	Gallons	3904	USD	Valley Oil
Apr 08	05-Apr-08	892	Gallons	0	USD	Valley Oil
Nov 07	09-Nov-07	565	Gallons	1991.99	USD	Valley Oil
Jun 07	18-Jun-07	541	Gallons	1578	USD	Valley Oil
Jun 07	16-Jun-07	2023	Gallons	5902	USD	Valley Oil
Jun 07	16-Jun-07	2564	Gallons	7480	USD	Valley Oil
Jun 07	05-Jun-07	567	Gallons	1692.02	USD	Valley Oil
Apr 07	16-Apr-07	1188	Gallons	3391.05	USD	Valley Oil
Jan 07	06-Jan-07	1753	Gallons	4362	USD	Valley Oil
Jan 07	05-Jan-07	2228	Gallons	5545	USD	Valley Oil
Dec 06	12-Dec-06	632	Gallons	1830	USD	Valley Oil
Dec 06	10-Dec-06	385	Gallons	1117	USD	Valley Oil
Dec 06	09-Dec-06	848	Gallons	0	USD	Valley Oil

Click on Row to Select Record

Add
Edit
Delete
Excel Export

Save & Exit

Admin

Unit Master
Report
Bldg Master
Meter Master
Ghg Report
Import Ghg

Welcome: hailey

Andy Smith -X (andysm2)

Propane Tab

Refrigerant Tab
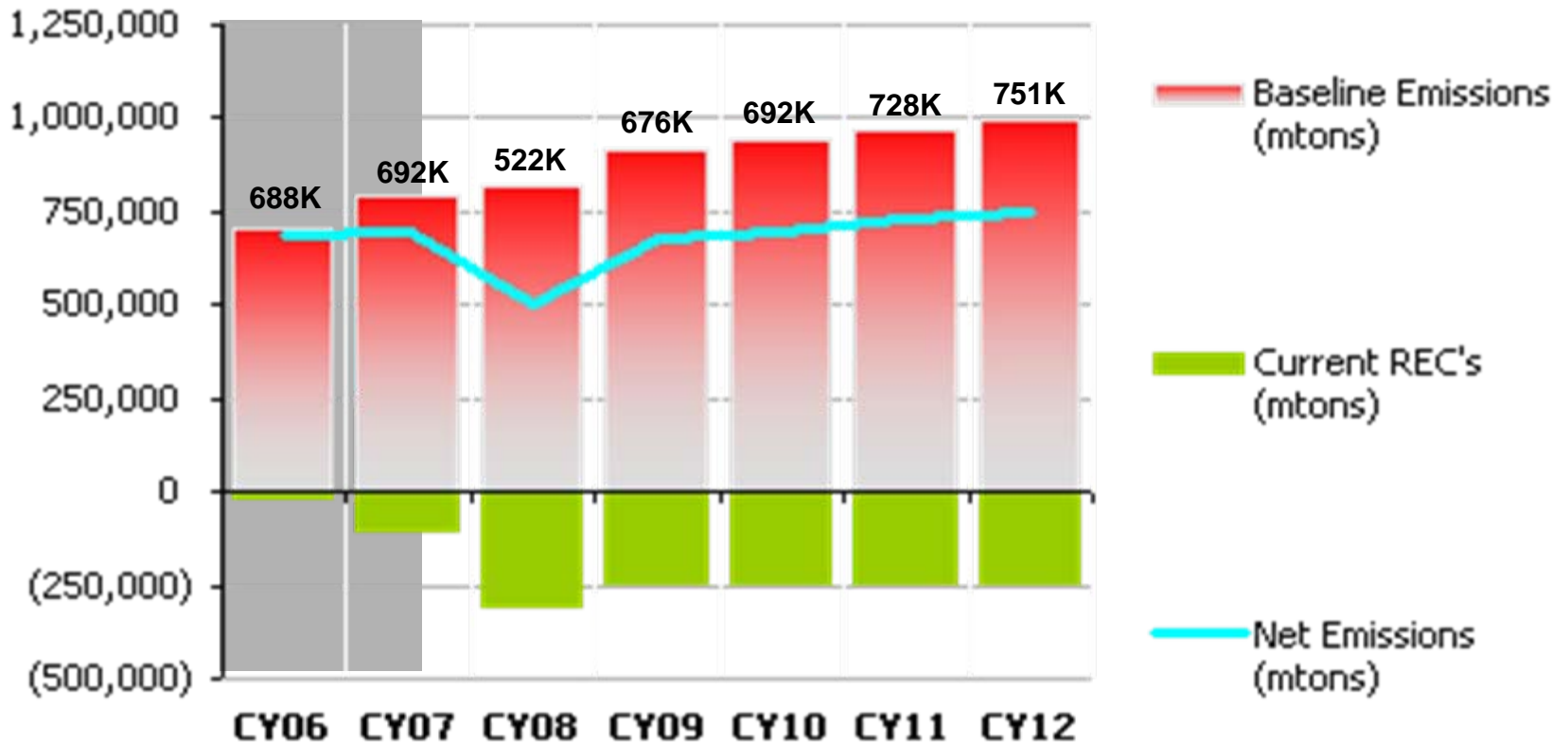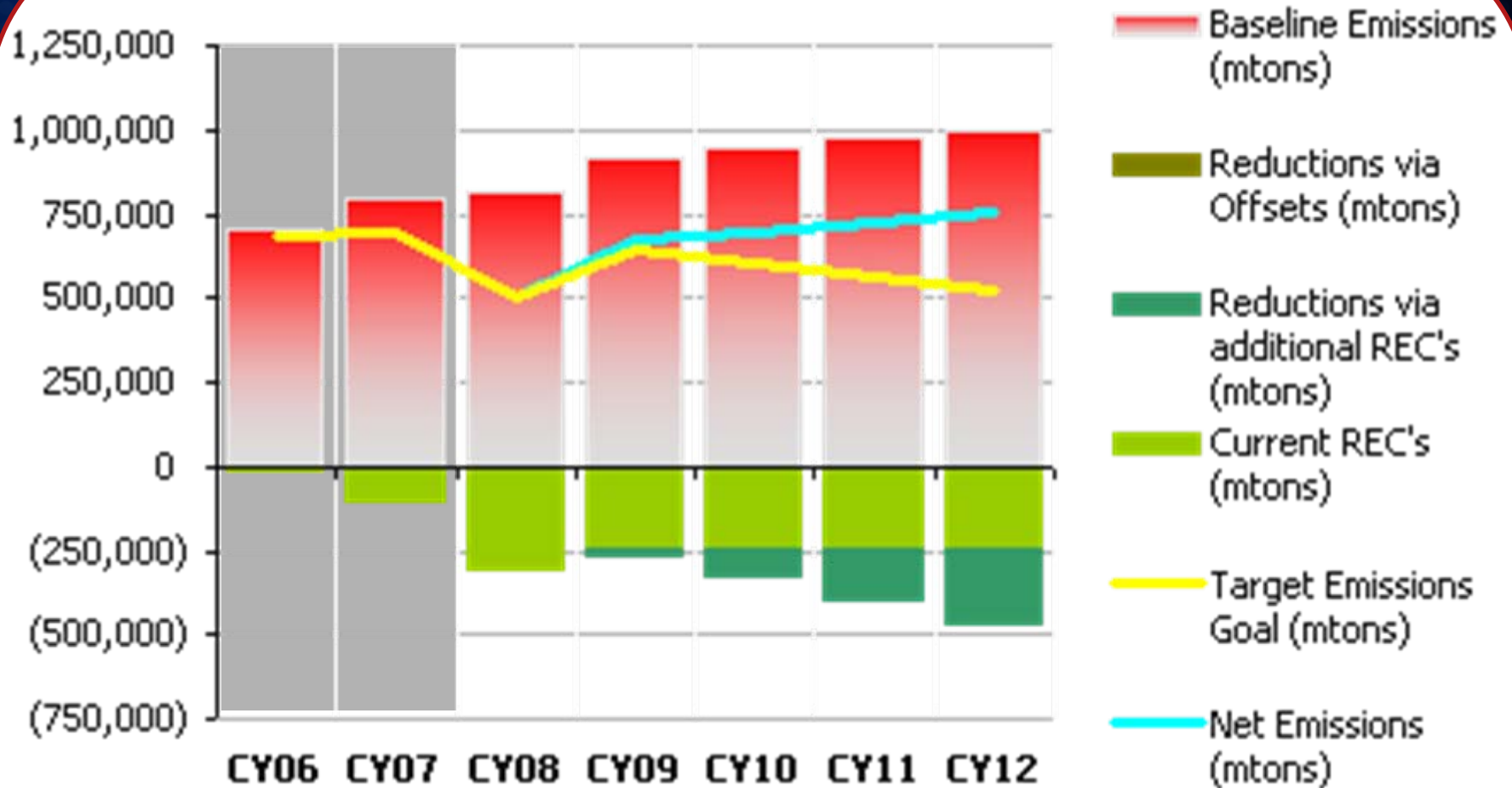
The EDT Led To Cisco's Goal Selection

Current and Projected GhG Emissions

Assumption: PH growth of 4-5%, planned
expansions and level REC purchases

GhG Emissions with 25% Absolute Goal*

*Will Mean a reduction of 232,000 MT from CY 2007

Potential Energy Reduction Projects

Buildings:
- Data Center Optimization
- Connected Workspace
- Leasing Terms
- General Efficiency Improvements
- Education and Outreach
- LEED / Energy Star Certifications
- Onsite Generation
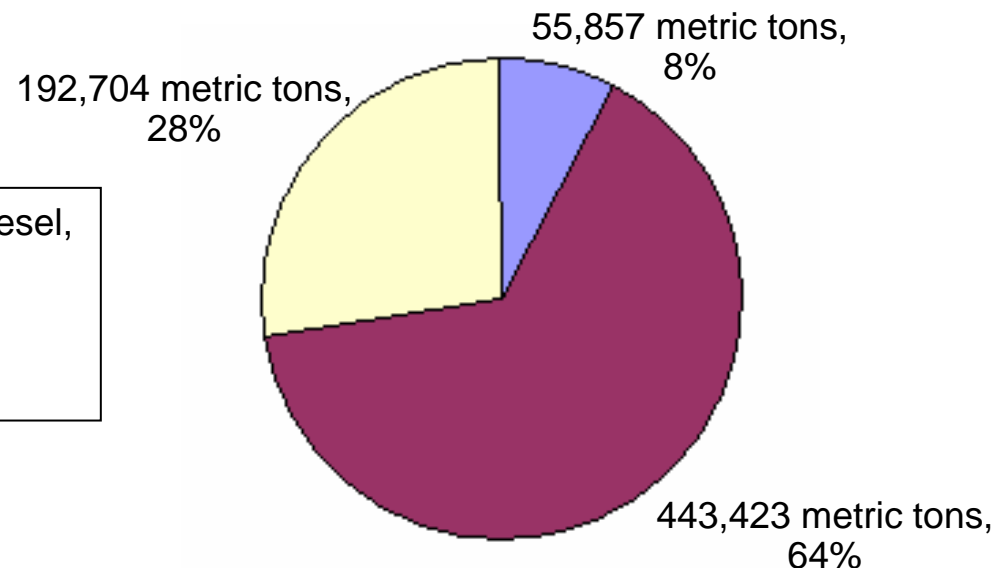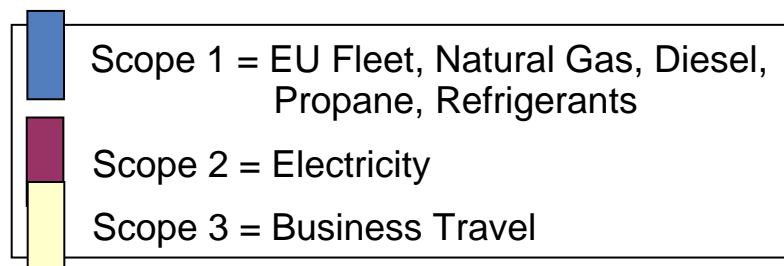- REC purchases
- Carbon Offsets

EU Fleet
- Alternative fuel vehicles

Business Travel
- Reduction via conferencing (e.g. Unified Communications and TelePresence)

Scope 1 = EU Fleet, Natural Gas, Diesel, Propane, Refrigerants

Scope 2 = Electricity

Scope 3 = Business Travel

Cisco's 2007 GhG Inventory

55,857 metric tons, 8%

192,704 metric tons, 28%

443,423 metric tons, 64%

EDT Availability

- **Cisco intends to share the EDT model with companies interested in using it**

- **Disclaimer will need to be signed. It will state that any company wishing to use the EDT's MS Access database framework acknowledges responsibility for customizing the tool for their use. (Cisco will not be able to offer technical support)**

- **Tool will be available online on Cisco's website www.cisco.com by mid October**

- **For reminder, please send email to John Hailey at hailey@cisco.com**