

A scenic landscape featuring a paved road with white lane markings that recedes into the distance. The road is flanked by green grass and a stone wall on the right. In the background, there are rolling green hills, a few buildings, and power lines under a bright blue sky with large, fluffy white clouds. The clouds are arranged to form a world map, with the continents clearly visible. The overall scene is bright and clear, suggesting a sunny day.

GREEN ICT

DELL, OUR SUPPLIERS AND CUSTOMERS

Victor C. Smith
Senior Strategic Technologist
Dell Corporation Ltd.

GROWTH EVERY SECOND IN THE CONNECTED AGE

2 new blogs created

4 cell phones purchased

7 personal computers are sold

1,200 views on YouTube

11,000 songs are shared

2,000,000 emails are sent



TECHNOLOGY REVOLUTION

A billion laptops in
the next 5 years

11x more 3g modems sold
(by 2011)

6x more storage needed
(2006-2010)

76% more energy consumed
(2005-2010)



OUR CUSTOMERS & GREEN ICT

- 34% already have a **Green IT strategy**
 - 15% plan within 24 months
- Top 3 drivers for Green IT?
 - **Cost** reductions/savings (74% of respondents)
 - Regulatory **compliance** (72% of respondents)
 - Reaching a sustainable level of **energy consumption** (68% of respondents)

TOP 5 Hurdles

1. Lack of **in-house skills**
2. **Other constraints** not compatible with Green IT
3. Insufficient **time** to implement a strategy
4. Lack of **measurements** on the impact of Green IT in the organization
5. Lack of **industry guidance** on Green IT



A glass marble sits on a vibrant green leaf. The marble's surface is perfectly spherical and reflects a detailed landscape scene, including a river, trees, and a bright sky. The background is a close-up of the leaf's texture, showing fine veins and a slight sheen.

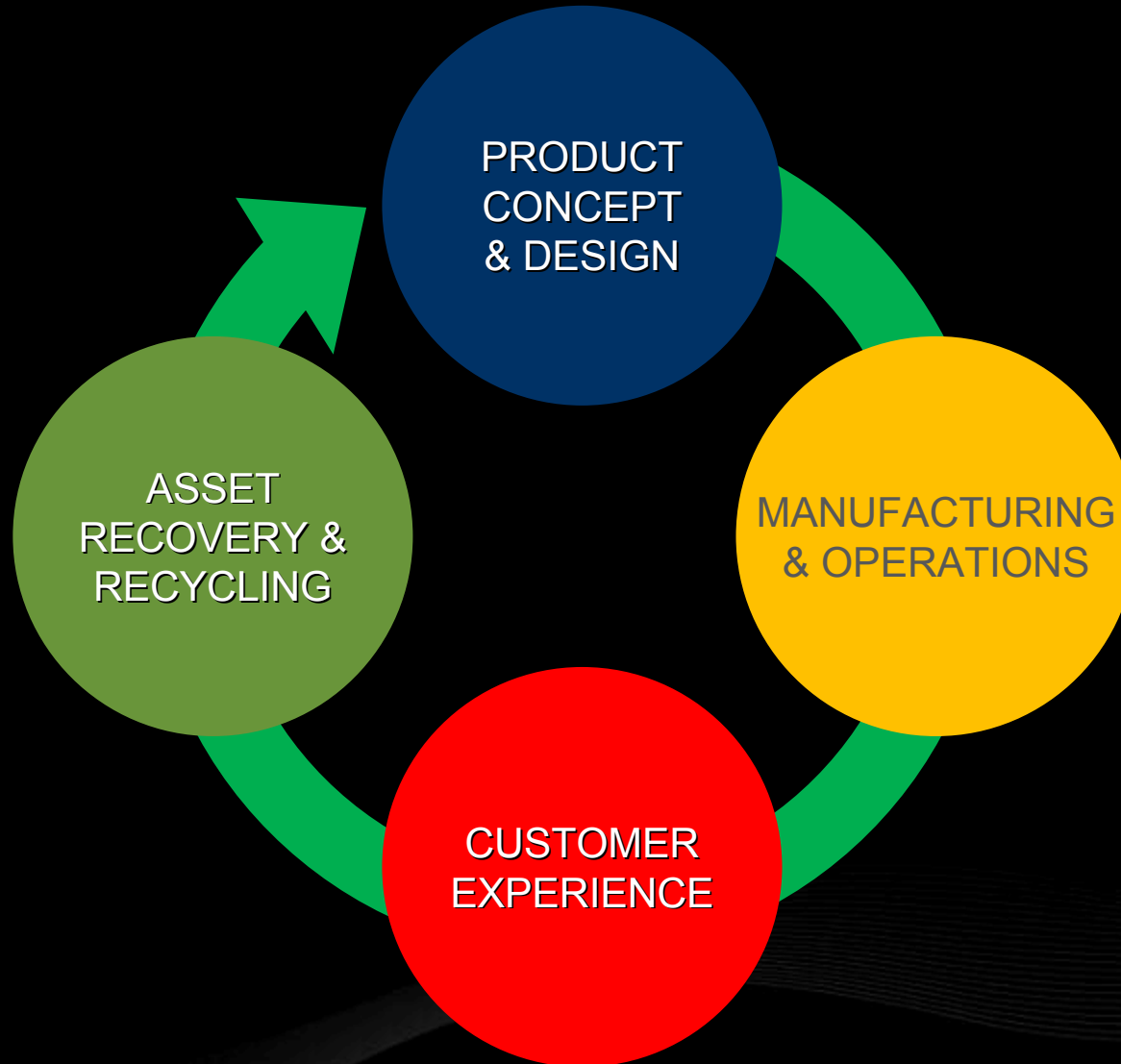
DELL'S VISION FOR A GREENER PLANET

**Become the 'greenest'
technology company
on the planet**

**Help our customers reduce
cost and complexity**

**Manage our supply chain
to ensure ethical behaviour**

DELL'S LIFECYCLE APPROACH TO GREEN





CARBON NEUTRAL IN 2008

**PROVIDING LEADERSHIP IN IT
MANUFACTURING**

STEPS TO ACHIEVING CARBON NEUTRALITY

1. INVEST IN EFFICIENCY

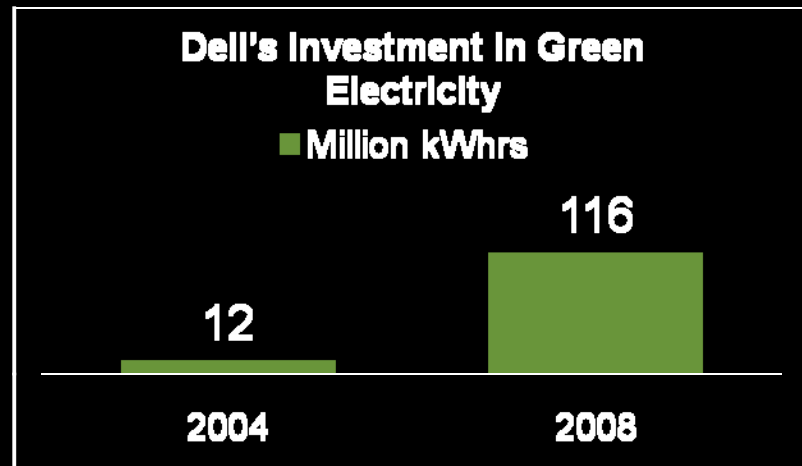
- Measurement of Power usage and Carbon emissions
- Improving efficiency in Data centres, Technology, lighting and air conditioning

2. INVEST IN RENEWABLE ENERGY SOURCES

- Switching to renewable energy suppliers.
- 870% increase – Austin is 100%

3. OFFSET REMAINING EMISSIONS

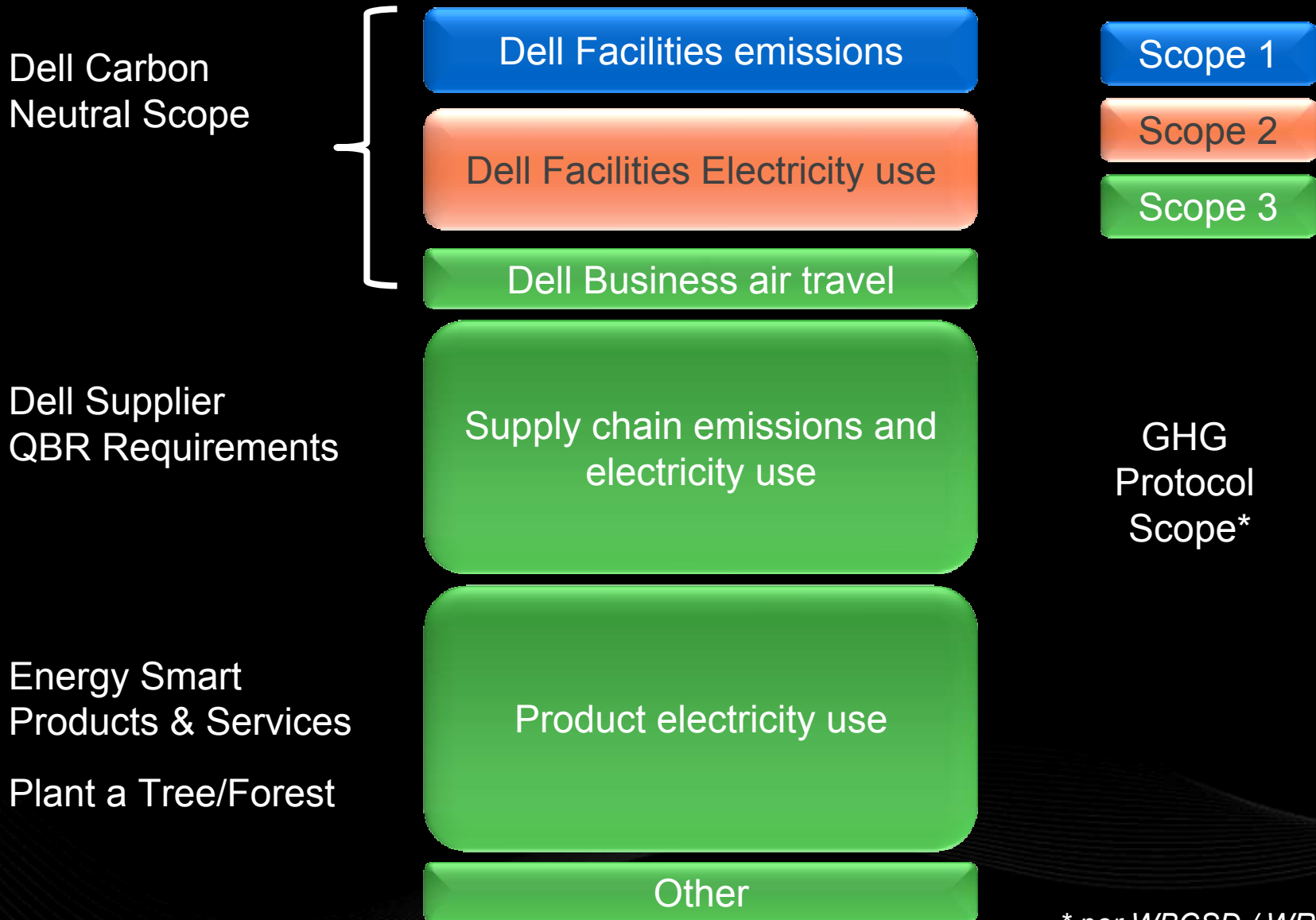
\$3+ MILLION IN 2008



RENEWABLE ENERGY CREDITS & REFORESTATION



SCOPE OF DELL'S CLIMATE COMMITMENT



* per WBCSD / WRI



ENABLING OUR CUSTOMERS

Dell is committed to driving customer savings through the world's most **energy-efficient** computers

Dell is the first computer manufacturer to transition all of its new laptop displays to **energy-efficient LED**

Dell's packaging reduction plan will result in estimated **savings** of more than **\$8 million**, and **eliminate approximately 20 million pounds of packaging material**

In 2007, Dell recovered **102 million pounds** of IT equipment from customers, a **20% increase** over 2006



RECYCLE: FLEXIBLE, THOROUGH, DEPENDABLE

1 ASSET REMOVAL & LOGISTICS



- Plan
- Pack
- Transport

2 AUDIT, SORT, & DATA DESTRUCTION



- Data Security
- Audit and Assess
- Asset tag removal
- Detailed Reporting

3 DISPOSITION OPTIONS*

- ✓ Resell
- ✓ Recycle
- ✓ Return to Lease
- ✓ Redeploy
- ✓ Donate

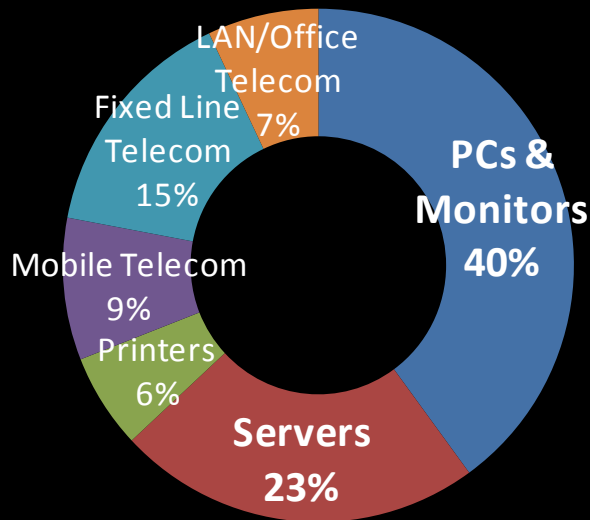
*some geographical limitations may apply

- Global compliance with environmental laws & regulations for recycling
- Stringent controls over data security
- Detailed audits of environmental partners and downstream channels
- Flexible disposition options

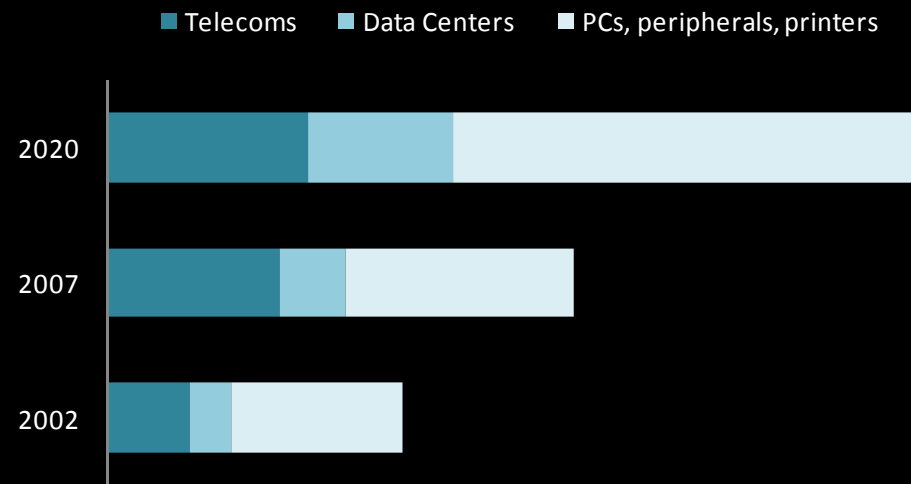


PCS / MONITORS AND SERVERS DOMINATE IT CO₂ EMISSIONS

ICT Related Carbon Footprint



Global Footprint by ICT Subsector



Sources: Gartner, Green IT – A New Industry Shockwave, December 2007

“Smart 2020: Enabling the low carbon economy in the Information Age”, The Climate Group / GESI, June 2008

ICT = Information and Communications Technology



REDUCE CLIENT DEVICES ENERGY CONSUMPTION

“We thought that if we were going to be the leader in the industry in energy-saving programs, we should evaluate promising technology by testing it on ourselves first. We could then offer the lessons we learned with our experiences to benefit customers, enabling their energy efficiency through system improvements, tools, and best practices.”

Jay Taylor, Senior Engineer Global Strategist, Dell

CHALLENGE

Conserve energy and cut expenses at Dell by reducing the power used by approximately 50,000 of its computers during non-business hours

SOLUTION

Dell installed 1E NightWatchman and 1EWakeUp software on its desktop and notebook computers. NightWatchman helps reduce energy waste by turning off computers overnight, and 1EWakeUp repowers machines from a centralized command

BENEFITS

Dell expects up to a 40 percent reduction in energy costs for desktop and notebook computers, leading to an estimated savings of US \$1.8 million annually



REVEALING DELL'S HIDDEN DATA CENTERS . . .



**GET MORE
OUT OF WHAT
WE HAVE**

**BUILD NEW
DATA
CENTERS**



DELL ON DELL: DATA CENTER ENERGY & PERFORMANCE

Hardware

- ~ 98,000+ Client Systems
- ~ 26,000+ Dell Servers

Networks

- 126 Dell Global WAN Sites
- 307 WAN Links
- 420 Metro Dell-managed Fiber Paths
- 3,000 Wireless Access Points
- 248 Dedicated Extranet Partner Links

Total SAN Storage

- 15.8+ Petabytes
- 350+ SAN Switches
- 2nd Largest Storage Area Network in US, Top 5 Globally*

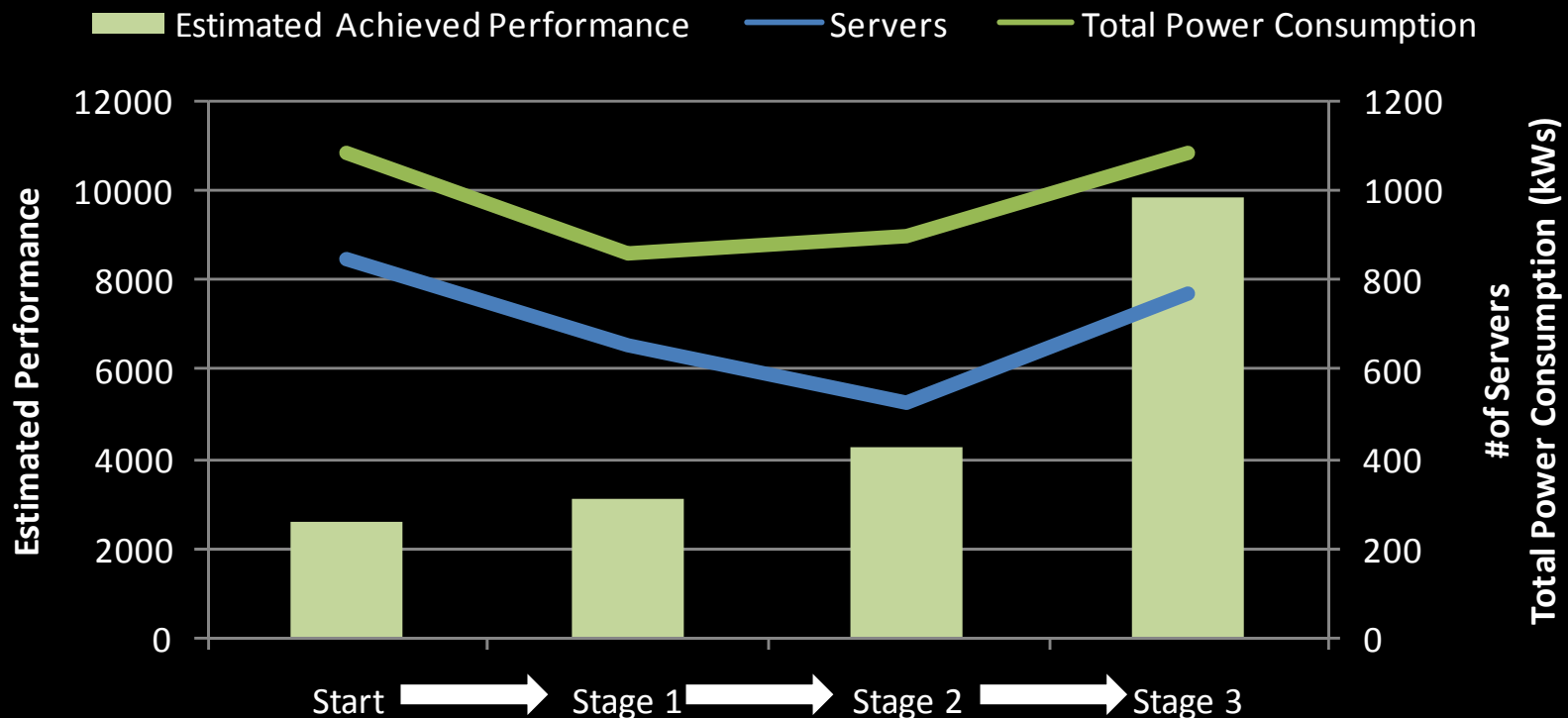


* Source: Brocade Communications Systems Inc

COMPUTE CAPACITY

Increased 270% with less servers & same power consumption

Revealing Your Hidden Data Center



- Decommission Out-of-Use Systems
- Virtualize / Consolidate
- Raise Temperature
- Utilize Containment
- Move Cooling Closer to IT

- Refresh Legacy Systems

- Fill Empty Space with New Systems



RESULTS:
**PLANS FOR NEW
DATA CENTER ON
HOLD INDEFINITELY**

**> \$50M EXPECTED
OPERATIONAL
SAVINGS**



THE GREEN GRID

- The Green Grid is a global consortium dedicated to developing and promoting energy efficiency for data centers and information service delivery by:
 - Defining meaningful, user-centric models and metrics
 - Promoting the adoption of energy efficient standards, processes, measurement methods and technologies
 - Developing standards, measurement methods, processes and new technologies to improve performance against the defined metrics



