







Hertfordshire Branch



Climate Change Is it all Doom & Gloom?

Can Information Technology Save the World?



Stephen Browne, Director, Ceradon Graham Hygate, Director, Sustayn Siva Niranjan, Programme Director, Steria 20th October 2009 v1.3



Climate Change Challenge

Impact on businesses

So, you have a problem ...

Discussion, Q&A

sustayn

→www.steria.com →www.ceradon.com →www.sustayn.com

2



Climate Change Challenge

Impact on businesses

So, you have a problem ...

Discussion, Q&A



→www.steria.com
 →www.ceradon.com
 →www.sustayn.com

3

Challenges Facing the Modern World!



Factories, Power Stations, Transport, **Computers**, **Offices**, Shops, Homes... Sea level up 20cm in 100 years and 85cm in the next 100 years... Sea level warming, rising & more acidic, heavier rainfall & frequent hurricanes, heat waves, higher temp with Human impact....



→www.steria.com →www.ceradon.com →www.sustayn.com

The highest CO₂e levels in 650,000 years.



www.ceradon.com →www.sustayn.com

Findings of Copenhagen Climate Summit 2009

Humanity is releasing 50 Billion Metric Tonnes of CO₂e per year & rising by 2 to 3% per year

- 1. 40% of CO₂e absorbed by the Sea, and acidifying and damaging marine life
- Global temperature rise by 2°C by 2050, with wide spread water shortage & famine
- 3. Developing countries will be least able to cope with floods, famine & diseases
- 4. Delays in tackling the problem raises the risk of crossing tipping points changes in Earth's dynamics that accelerate the warming effects
- 5. Cutting emissions will lead to new jobs, improved health and preservation of wildlife
- 6. The world has the Technology and Tools to tackle Greenhouse Gas emissions and rising temperatures



→www.steria.com →www.ceradon.com →www.sustayn.com

The Future.....scenario with no Action

+2°C	Northern Europe: Warmth improves crops
•	Equatorial regions: Desertification of land & crops fail
	Australia: Crops & livestock fails
+3°C	Alps: End of ski industry
	Wildlife : widespread extinctions across Africa, South America and Asia
+4 ℃	Northern Europe: Suffers Summer heat waves
	Amazon: Rainforests die
	Greenland: Icecap melting accelerates
+5°C	Global: Crop failure, billions of people suffer starvation,
	and drought, rising seas threaten many cities

"Need to cut fm 50B metric Tonnes to 20B metric Tonnes to limit temperature rise to +2°C"

sustayn

→www.steria.com
 →www.ceradon.com
 →www.sustayn.com

7



"Need to cut fm 50B metric Tonnes to 20B metric Tonnes to limit temperature rise to +2°C"

Today: Europeans generate 11 to 14 mT/year; Americans ~22 mT/year Africans 1 to 2 mT/year

> **2050** with world population estimated to be 9 to 10 billion We have to limit our output to ~2 mT/year

> > 5.5kg of CO2 per person per day

- = 25 mile/40 km car drive **OR**
- = a day of air conditioning **OR**
- = eating only 2 meals per day

Source: McKinsey

"We have to find ways to cut the Carbon Footprint"



→www.steria.com →www.ceradon.com →www.sustayn.com

Response from Leading Governments

Kyoto protocol 1997 [EU + 181 countries] cut Greenhouse Gases 5%* by 2008-12 EU commits to cut 8%* by 2008-2012 UK to cut 12.5%* by 2008-2012 UK to cut 34%* by 2020 and first to commit to 80%* (revised from 60%) by 2050 G8 Commitment (July 2009 summit in Italy) cut Greenhouse Gases 80%* by 2050 G8 demands on China & India to cut 50%* by 2050

Copenhagen Climate Summit (COP15) for Governments in 7-18 December 2009

* Baseline against 1990 figures {CO2, CH4, N2O, HFCs, PFCs, SF6}

"UK to invest £100B for 15% Renewable Energy by 2020"



→www.steria.com
 →www.ceradon.com
 →www.sustayn.com

Climate Change: G8 Key Driver

G8 agreement in July 2009 Summit to cut by 80%* by 2050

Commercial Sector

Public Sector

Individual / Household

Contributions

→www.steria.com
 →www.ceradon.com
 10 →www.sustayn.com

* From 1990 levels sustayn

Expectations on Environment

Regulatory

 Adherence to Standards such as ISO14001, GHG, GRI, UN GCompact.

Practice • Der



- Demonstration of sustainability
 - Carbon Footprint
 - Employee Behaviour
 - Partners & Suppliers



Solutions

Propositions that include clear

Business

- environmental assessment
- and optimisation
- Propositions that reduces Client Carbon Footprint



Information & Communications Technology (ICT)



IT Data Centre energy consumption is only between 2 to 4% (but to double in the next 5 years), and relatively low emissions. High emission comes from Manufacturing (25%), Transport (24%) & Power sectors (24%)

→www.steria.com
 →www.ceradon.com
 12 →www.sustayn.com



ICT, Adding Value



Improvements to ICT Products & Services

Chip Technologies, PCs, Data Centres, Standby & Power Manufacturing & process efficiencies, Eco-designs, ...



Improvements to Other Sectors by ICT

a) <u>Enhancing Technologies</u>
Energy Management, Monitoring, Improving efficiencies in
Office processes, Transport, Logistics, Smart building, ...
b) <u>Enabling Technologies</u>

Paperless working, Energy reduction, Virtualisation, ...

c) <u>Transforming Technologies</u>

Tele-working, Videoconferencing, Remote working, Remote Management, ...





Climate Change Challenge

Impact on businesses

So, you have a problem ...

Discussion, Q&A

sustayn

→www.steria.com
 →www.ceradon.com
 14 →www.sustayn.com

Role of ICT suppliers and leaders

- Mitigation: helping companies reduce their carbon footprints. Driven by
 - regulation
 - customer pressure
 - employee pressure
- Adaptation: helping companies exploit the opportunities and mitigate the risks of climate change
 - choice editing
 - supply chain diversification





Adapt to market change driven by global resource constraints

Mitigate your business's impact on global resource depletion

-ve impact on P&L+ve impact on P&L

ceradon

steria

Mitigation

→www.steria.com →www.ceradon.com →www.sustayn.com







→www.sustayn.com 18





→www.ceradon.com





→www.ceradon.com
20 →www.sustayn.com



Manage the risks global resource constraints pose to your business

Re-position your business to address new opportunities arising from market changes driven by global resource constraints

Cost

Reduce the environmental impact of your operations in ways that generate payback

Mitigation

→www.steria.com
 →www.ceradon.com
 →www.sustayn.com





Manage the risks global resource constraints pose to your business

Re-position your business to address new opportunities arising from market changes driven by global resource constraints

Minimise the cost of mitigation measures which don't pay back Reduce the environmental impact of your operations in ways that generate payback

Mitigation

→www.steria.com →www.ceradon.com →www.sustayn.com -ve impact on P&L +ve impact on P&L sustain



→www.steria.com
→www.ceradon.com
23 →www.sustayn.com





Climate Change Challenge

Impact on businesses

So, you have a problem ...

Discussion, Q&A

sustayn

→www.steria.com
 →www.ceradon.com
 24 →www.sustayn.com

So, you have an Energy Problem

- → What can ICT do about it ?
 - Improve efficiency of hardware, software and services
 - Enable others to reduce their emissions
 - Manage resources depletion
- How do I know where the problem lies?
 - Monitor and measure
 - Communicate



→

Monitoring example: electricity . (where is it all going?)





→www.steria.com
 →www.ceradon.com
 26 →www.sustayn.com



Buildings management systems

Environmental management systems

- → Standards:
 - ISO 14001
 - **—** BS 8555
 - EMAS
- Incentives:
 - Global Reporting Initiative
 - Business in the Community annual awards
 - Eco Schools
 - Sector schemes



27







→www.steria.com →www.ceradon.com 28 →www.sustayn.com

How – Select Appropriate Technologies

- Hardware reduce demand for energy and natural resources; data centres ; thin clients
- → Software more efficient code; virtualisation
- Services on-line training; minimum impact configurations (e.g., ERP); congruent targets
- → Communication influence suppliers, customers, colleagues

→But ...

- Remember the Biggest Picture
 - Resources depletion
 - Environmental degradation
 - Life-cycle management (PAS 2050)





- → ICT get our own house in order
- Enable others to reduce their emissions



- → Influence legislation & standards
 - WEEE
 - Emissions trading
 - Carbon Reduction Commitment (> 6MWh/yr)
 - European Code of Conduct for Data Centres
 - Data Centre Simulator
- → Become recognised as a purveyor of Best Practices
- → Foundation Certificate in Green IT Strategy
- Forum for debate
- → Green IT Specialist Group



→www.steria.com →www.ceradon.com →www.sustayn.com

ICT Role in Wider Solution; An Example





- Audit & Monitoring of Carbon Footprint
- Automation Technologies
- Remote Management
- Supply Chain Systems with Green Focus
- Applications & Systems
- 4.1M m tonnes Carbon Footprint, but IT is only 4%
- IT 4% : Wintel 29% (utilisation 6%), M/F 3%, Storage 18%

Solution

• IT:

- Virtualise to increase utilisation to 60% Virtual desktops, printing, hibernate devices
- IT enabled: Automated Building Management (8-16%) Logistics 'Green' Management (1-2%)

Teleconferencing, Home working (1-2%)

ceradon

steria





in carbon footprint of all new stores

50% cut in CO2 created per case of goods delivered by 2012

→www.steria.com →www.ceradon.com →www.sustayn.com 31

£100M

nvestmen



Climate Change Challenge

Impact on businesses

So, you have a problem ...

Discussion, Q&A



→www.steria.com →www.ceradon.com 32 →www.sustayn.com

Green is the new Red, White and Blue

'Green is no longer a fad, green is no longer a boutique statement, green is no longer something you do to be Good, and hope it pays off in ten years. Green is the way you grow, build, design, manufacture, work and live, because it is just better!!'**.

Green becomes the smartest, most efficient, lowest-cost waywhen all the true costs are included – to do things. That is the huge transition we are just beginning to see. Green is going from boutique to better, from a choice to a necessity, from a fad to a strategy to win, from an insoluble problem to a great Opportunity**.

> *Taken from book 'Hot, Flat and Crowded' Thomas L Friedman ** Quote from Andrew Shapiro, CEO of GreenOrder, a strategy firm



→www.steria.com →www.ceradon.com →www.sustayn.com