Emissions trading
IT and systems implications

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Climate change - Artic ice free by 2015?

Summer 2001	2001 - 2005	2005 - 2007

- The sea ice minimum extent in late summer 2001 was close to the long-term average.

- By 2007 it had shrunk 39% below average

- 2008 - Northwest Passage now open

- It is now predicted that the artic could be ice free in summer by 2015

Source: www.climateemergencynetwork.org   Climate Code Red

Climate change tipping points - a positive feedback loop

- 5C Artic temperature rise will melt permafrost, releasing millions of tonnes of methane, which is a 22x more potent greenhouse gas than CO2

- Greenland and Antarctic ice shelves are disintegrating and melting

"If we get warming of 2 to 3C, we can expect the West Antarctic ice sheet and parts of Greenland to melt risking sea level rises of 1 meter every 20 years, and 5 metres in a century". James Hansen, 7.30 report 13 March 2007

"Every 1 metre rise in sea level the coastline will retreat 100 metres". Barrie Pittock 7.30 Report March 13 2007

Source: www.climateemergencynetwork.org   Climate Code Red

Climate change impacts in Australia

- **Dramatically reduced rainfall** in Tasmania, NSW, Victoria and Queensland - water supplies greatly diminished for Melbourne, Adelaide, Perth and Sydney

- **The Murray and Darling Rivers** have stopped flowing

- **More frequent severe flood events**; Victoria, NSW, Queensland

- **Coastal areas under threat** - such as Melbourne's bayside suburbs, the Mornington Pennisula and the Gippsland lakes system

- **3C global temperature rise** would mean the loss of the Great Barrier Reef, Kakadu wetlands and snow in Australia.

Reference: www.garnautreview.org.au   Garnaut Draft Report

Some business responses to climate change

News Corporation

In three years **News Limited** will become **carbon neutral**

By **2010 News Limited** will no longer contribute to global warming

Find out how **News Limited** is reducing its carbon footprint at **1degree.net.au** 1°

ANZ

"We partner with our clients to investigate energy efficiency projects, cleaner energy solutions, renewable energy and credible carbon offset and trading schemes that may benefit their business and enhance their transition to a low carbon economy."

bhpbilliton resourcing the future

"BHP Billiton acknowledges the risks of climate change, and the need for accelerated action to stabilise greenhouse gas concentrations at acceptable levels. "

Australia's response to climate change

- **Emissions trading** - the Carbon Pollution Reduction Scheme (CPRS)
- **Mandatory Renewable Energy Target** (MRET) of 20% by 2020
- **Energy Efficiency Opportunities Scheme** (EEO)
- **National Greenhouse and Energy Reporting Scheme** (NGERS)
- **Low Emissions Technology Demonstration Fund** (LETDF) - funds attempts to lower carbon emissions from coal, with no evidence yet that it will work.
- **Feed-in Tariffs** to reward zero emissions energy - but capped net tariffs will be ineffective (e.g. Vic, QLD and SA). ACT is gross.
- **Rebates** for solar panels (now means tested), water tanks and solar hot water
- **Desalination plants** proposed for Melbourne and Sydney will emit high levels of greenhouse gases

Reference: http://www.greenlivingpedia.org/Climate_change

Climate change – recent Australian regulation

- **Regulations mandatory with significant penalties ($220K+) for non-compliance**

- **Meeting regulations will incur costs but also present opportunities**

Reporting

National Greenhouse and Energy Reporting Scheme (NGERS)
- Provides GHG emissions data to
- underpin CPRS
- First reporting year 2008/2009
- Significant financial penalties for
- non-conformance ($220K plus)

Efficiency

Energy Efficiency Opportunities Scheme (EEO)
- First reporting year 2008/09
- Energy efficiency projects
- < 4 years payback period
- Results publicly disclosed
- Very detailed process - eg. proof of
- consultation and detailed reporting

Trading

Carbon Pollution Reduction Scheme (CPRS)
- Market based approach to reducing
- GHG emissions
- Proposed implementation is 2010
- Likely to follow cap and trade model
- with permits for emissions auctioned
- Predictions of $20-$50/tonne CO2-e

Targets
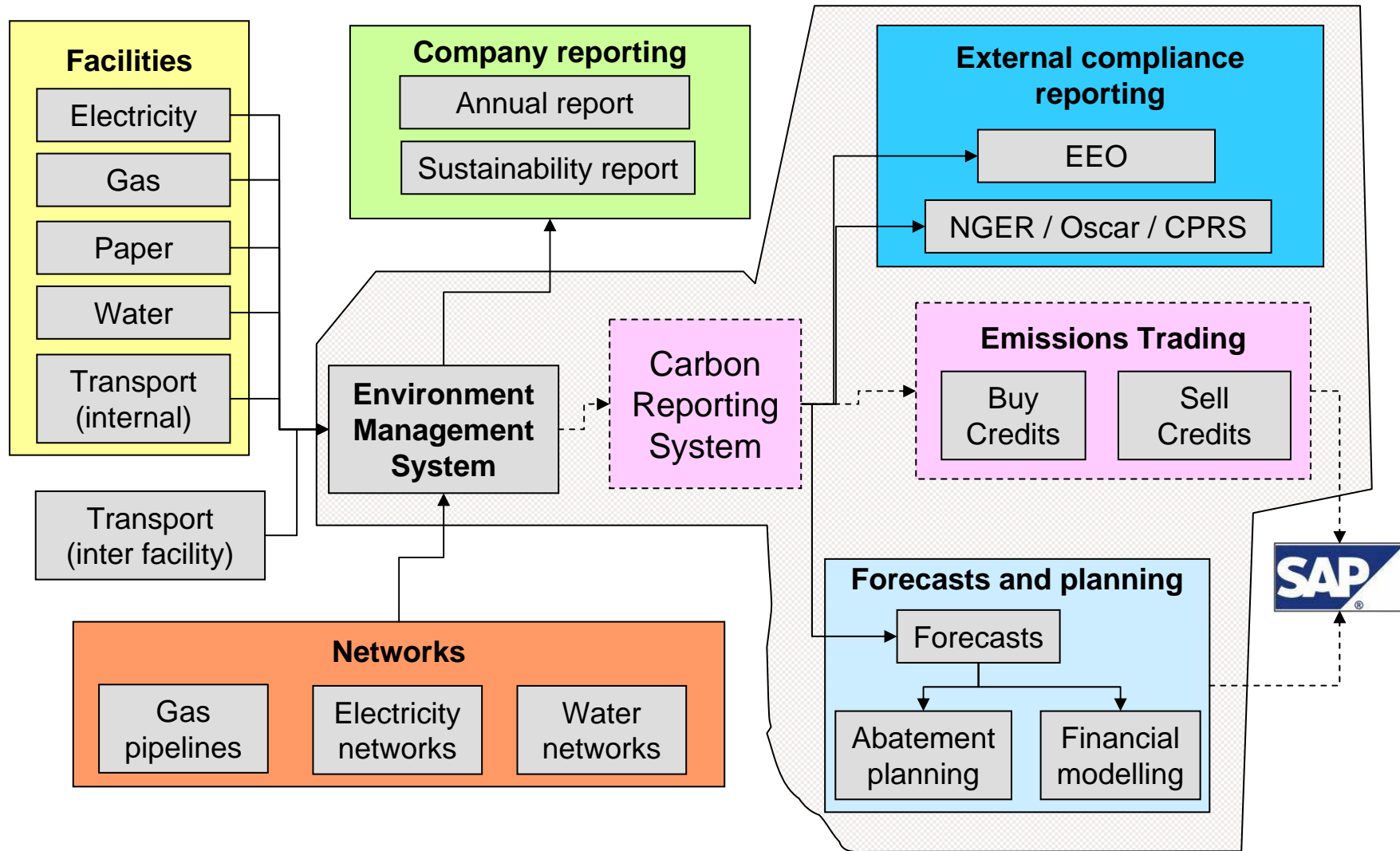
Mandatory Renewable Energy Target (MRET)
- Introduced to give government
- support to renewable energy sector
- 20% renewable energy target by 2020

Green IT - reducing carbon emissions

- **Reduce data centre power consumption and carbon emissions**
  - Power efficient multi core CPU architecture
  - Blade servers
  - Reduced air conditioning
  - Reduce physical servers using virtualisation
- **Reduce desktop power consumption**
  - Low power laptops and desktops 30 to 50W
  - Thin clients 5 to 30W
  - Virtual desktops
- **Reduce printer power and paper consumption**
  - Low power printers and power save mode
  - Software to track and advise users of their paper usage
- ***Extend hardware service life to 5+ years**
  - Reduce raw materials consumption by 40% compared to 3 years

Reference: http://www.greenlivingpedia.org/Green_computing

Carbon reporting and emissions trading systems architecture and integration

Facilities
- Electricity
- Gas
- Paper
- Water
- Transport (internal)

Transport (inter facility)

Company reporting
- Annual report
- Sustainability report

External compliance reporting
- EEO
- NGER / Oscar / CPRS

Environment Management System

Carbon Reporting System

Emissions Trading
- Buy Credits
- Sell Credits

Networks
- Gas pipelines
- Electricity networks
- Water networks

Forecasts and planning
- Forecasts
- Abatement planning
- Financial modelling

SAP

Conclusions

- Looming climate change emergency requires immediate action

- If you can't measure it you can't manage it

- Systems integration will be a key enabler

- Competitive advantage for those who do ETS well

- Get the architecture right – don't just bolt on ETS or use a spreadsheet

- Green IT energy efficiency measures can complement ETS by reducing carbon emissions

- Get working on it now if you haven't already started

References

- **Carbon Pollution Reduction Scheme**
  - http://www.climatechange.gov.au/emissionstrading/index.html

- **Green computing**
  - http://www.greenlivingpedia.org/Green_computing

- **Climate Code Red**
  - http://www.climatecodered.net

- **Garnaut Review**
  - http:// www.garnautreview.org.au

- **Tech firms urged to apply for $75m Climate Ready fund**
  - http://www.australianit.news.com.au/story/0,24897,24097151-15319,00.html

- **Environmental Management Systems (EMS)**
  - http://www.environment.gov.au/settlements/industry/corporate/ems.html