World Environment Day
Bundaberg, QLD 2008

Towards a low carbon, cleantech economy

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Overview

- Issue you a challenge
- Paint you a vision
- Put world environment day 2008 into context
- Show you how Bundaberg is making its mark

Issue you a challenge

- "be the change you want to see in the world" - Mahatma Gandhi
- Cleantech defined:
  - *Cleantech encompasses the technologies, processes, skills, knowledge, products and services that provide financially viable solutions to the new economic challenges faced in overcoming carbon and resource constraints*
- What are you doing to encourage the transition to a low carbon, cleantech economy?

What we did to create a low carbon, cleantech economy

PAINT YOU A VISION

Picture courtesy of http://www.climatecounts.org/

What the people did...

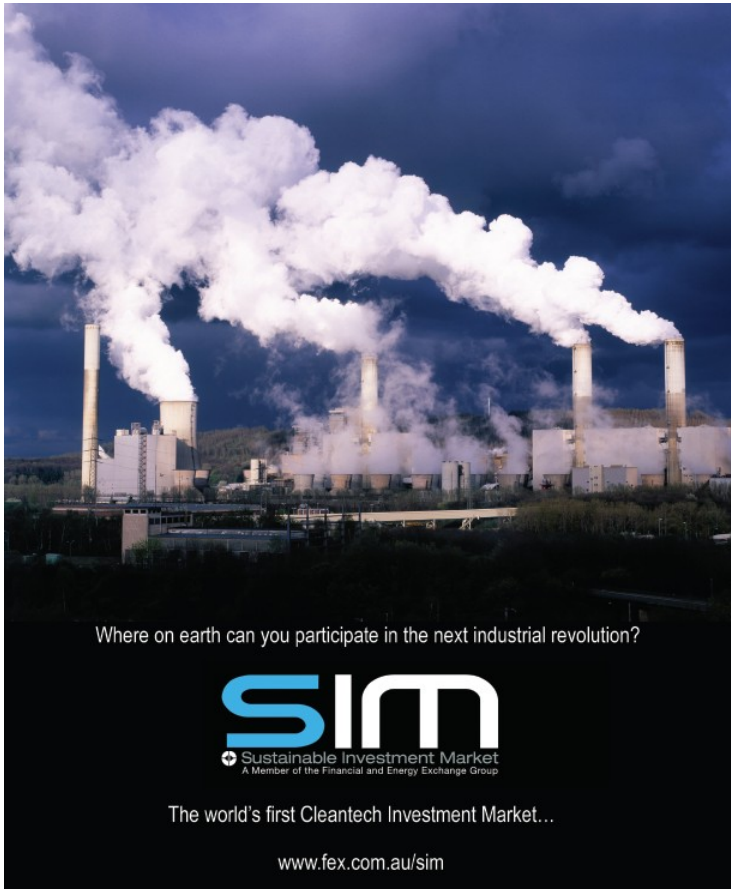
- Became actively engaged
- Spoke up and demanded action
- Aligned money and mouth
- Lead a drive for debt free living
- LOHAS movement
- Built their cleantech capabilities
- Pursed new micro-business opportunities
- Got educated and kept informed
- Collaborated
- Gave politicians ideas & the courage to act

What government did… .

- Heard the people and had the courage to lead, regulate and enforce
- Implemented key policies – ETS, MRET, EET, Gross Feed-in Tariff
- Actioned the vision for Australia to be global cleantech hub
- Recognised and incentivised cleantech infrastructure projects
- Supported projects through joint funds
- Consolidated resources across jurisdictions to support projects with necessary soft infrastructure
- Annual Cleantech innovation prize to solve specific problems

What industry did… .

- Heard the people and government and embraced Cleantech as the next evolution of the economy
- Rapid drive to build their Cleantech capabilities
- Environmental cost centres became Cleantech profit centres
- Risk profile of investments shifted to include Cleantech capabilities and sustainability performance
- Ideas were converted to products, services, businesses and sustainable jobs quicker than ever before



World Env. Day 2008 in context

- Global economy undergoing an evolution
  - unprecedented resource constraints
  - growing community expectations for businesses to lighten their footprint on the climate and environment.
- Growing understanding that our future prosperity and access to capital will increasingly be tied to:
  - the ability to overcome carbon and other resource constraints
  - environmental performance and
  - adaption to climate change
- Australia stands at cross roads, faced both with profound challenges and significant opportunities.
  - We don't compare well with countries like Germany, Spain, Japan, Korea and Singapore
  - Opportunity to leverage success in the current economy to create the next wave of future prosperity
- Building globally significant capability in clean technologies is one of these opportunities.

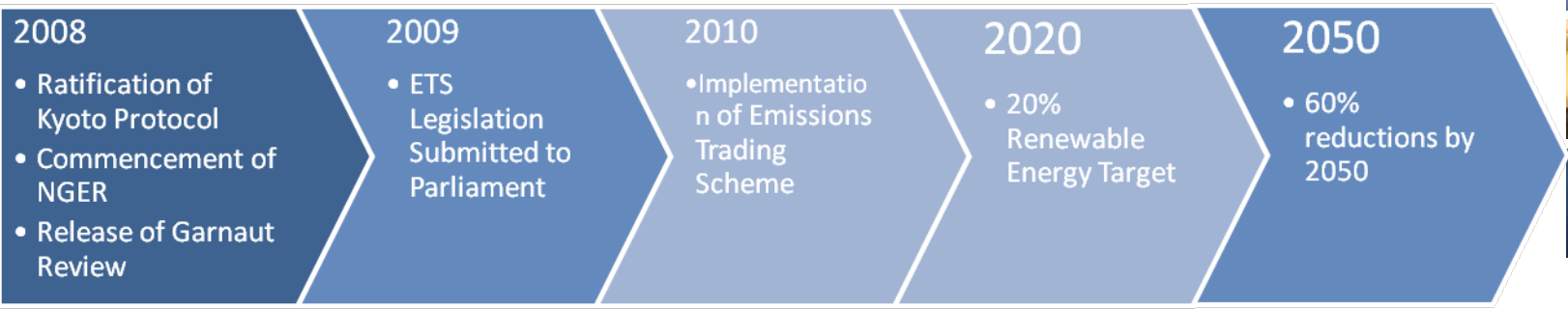
National Aspirations 2008

Source: The Hon. Wayne Swan, M.P., Treasurer, Budget 2nd Reading Speech, 13th May 2008

- ✓ Global leadership in the transition to a low emission economy
- ✓ Invest in the future
- ✓ End the brain drain
- ✓ Work in partnership with Australian Business to tackle climate change
- ✓ Sustain growth in challenging times
- ✓ Provide more effective support to small businesses and innovative companies
- ✓ Financial services hub in the Asia Pacific Region
- ✓ Support national prosperity beyond the mining boom
- ✓ Improve productivity through "Enterprise Connect Centres"
- ✓ Caring for our country – NRM and Better Regions initiatives

Policies in 2008

- Emissions Trading Scheme commencing 2010
- All schools "Solar Schools" by 2016
- 20% Mandatory Renewable Energy Target by 2020
- 60% Reduction in Greenhouse Gas Emissions by 2050
- Some potential emerging ones
  - Energy Efficiency Target
  - Feed in tariff



Policy in action

- Emerging Carbon & Environmental Markets
- Evolved from regulatory mechanisms to manage economic externalities such as pollution and resource depletion.
- Established through cap or constraint
- Those who can't meet cap or constraint need to trade "savings" with those who can
  - Examples
    - US Clean Water Act 1970 (Wetland Banking)
    - US Acid Rain Trading Scheme 1980s (SO_2 & NO_x)
    - NSW Greenhouse Gas Abatement Scheme 2003 (Carbon = CO_2e)
    - Kyoto Protocol 1997 (Carbon = CO_2e)

What is a Carbon Unit?

- International trading unit
  - One metric tonne of carbon dioxide equivalent CO_2e

Gas Type	Chemical Symbol	Global warming potential over 100 years
Carbon dioxide	CO_2	1
Methane	CH_4	21
Nitrous oxide	N_2O	310
Sulphur hexafluoride	SF_6	23,900
Hydro fluorocarbons	HFCs	140-11,700
Per fluorocarbons	PFCs	6,500-9,200

Source IPCC 1996

Where do emissions come from?

AETs	Sector	Sources	$MtCO_2e$	%
Covered 70% of total emissions	**Electricity & Other Stationary Combustion**	Electricity production; petroleum refining; mfg of solid fuels; mfg & construction	279.9	49.9%
	Transport	Civil aviation; road transportation; railways; navigations	76.2	14.4%
	Industrial Processes	Mineral products, chemical products, metal products, other production, production & consumption of halocarbons and SF_6;	29.8	5.3%
To be determined	**Fugitive Fuel Emissions**	Solid fuels, oil, gas, oil & gas venting and flaring	31	5.6%
	Waste	Solid waste disposal on land, wastewater (domestic, commercial and industrial) and incineration	19.1	3%
Initially Uncovered Can provide AETS Offsets	**Agriculture**	Enteric fermentation, manure management, rice cultivation, agricultural soils, field burning of agricultural residues	93.1	15.7%
	Land Use, Land Use Change & Forestry	Changes in forest and other woody biomass stocks, biomass stocks, forest and grassland conversion, abandonment of managed lands, CO2 emissions and removals from soil, prescribed burning & wildfires	35.5	6%
		Total	**564.7**	

Source: AGO 2006, Aust. National GHG Inventory 2004 & AGO 2007

Generating a carbon unit?

Sustainable Investment Market
A Member of the Financial and Energy Exchange Group

AVOIDED EMISSIONS

- Fuel switching
- Redesign of business processes, facilities, products etc
- Onsite energy generation with lower GHG intensive generation

REDUCED EMISSIONS

- Energy efficiency
- Materials efficiency
- Investment in new technologies, products and processes
- Carbon Capture & Storage

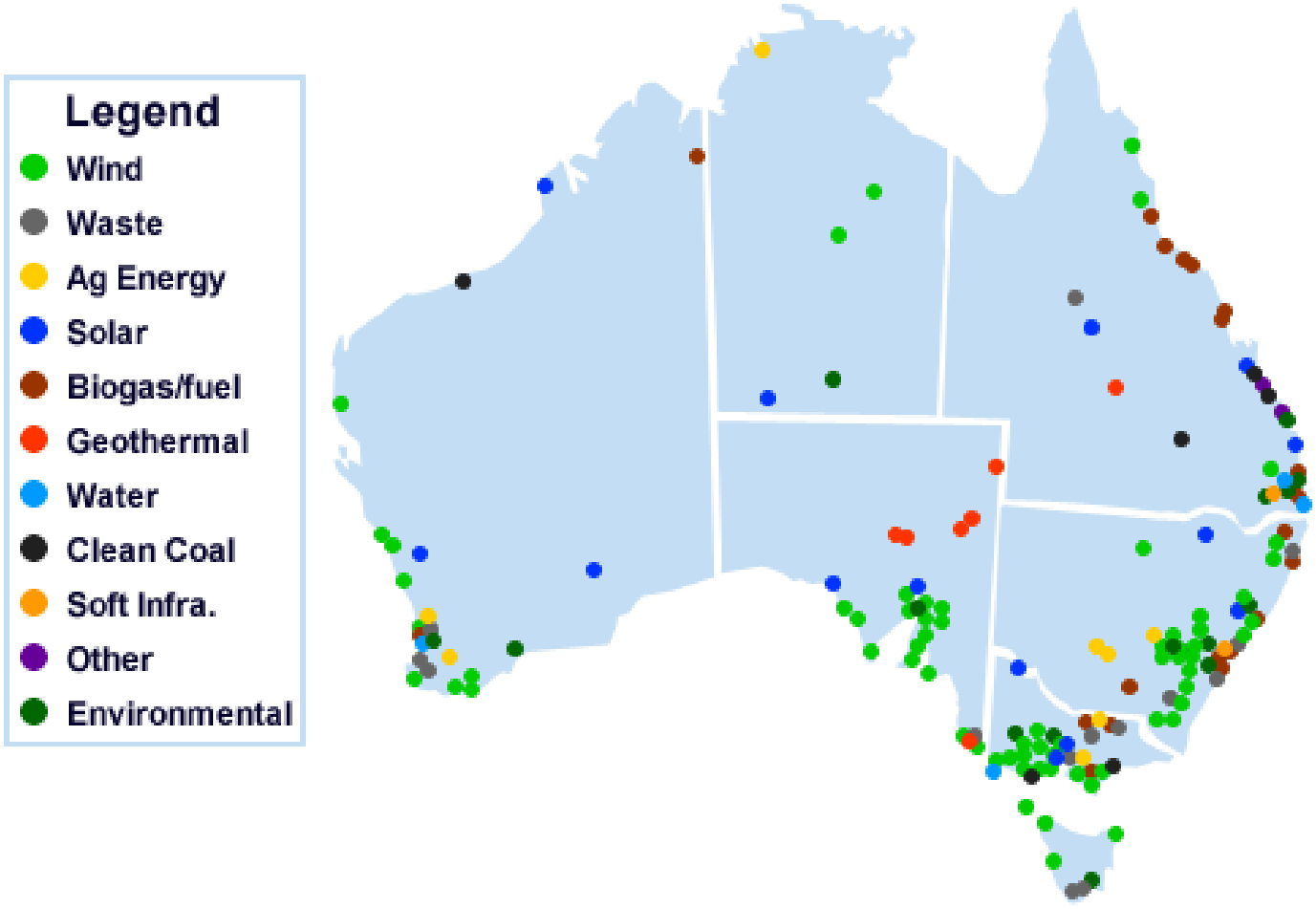
OFFSET EMISSIONS

- Revegitation
- Soil Carbon
- Forestry

TONNES OF CARBON AVOIDED, REDUCED OR OFFSET

- measured
- modeled
- verified
- insured
- registered
- **certified**
- traded
- cleared
- settled
- retired
- registered

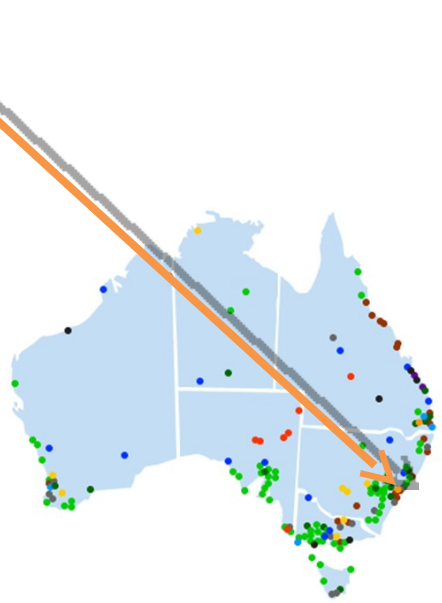
Cleantech Projects as at 2008



Source: Bakers Investment Group http://www.bakersgroup.com.au/

Financial & Energy Exchange

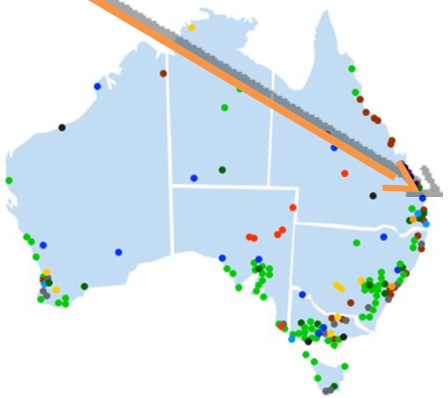
- Emerging financial and capital markets group
- A new platform established to provide over-the-counter (OTC) trading facilities and operate equities and derivatives markets for energy, environmental and financial products in the Asia region.



  - Sustainable Investment Market – SIM
    - World's first specialized equity capital market for Cleantech and sustainable businesses
    - www.fex.com.au/sim
  - enVex
    - A joint venture with Macquarie Capital Group to develop climate and environmental products for FEX's exchange traded and over the counter market infrastructure.
    - www.envex.com.au

Earthtrade

- An innovative cleantech business
  - A wholly owned commercial subsidiary of BMRG
  - Based in Bundaberg being launched today 1pm
- Environmental product brokerage
  - Vegetation Offsets (Veg Mgt Act 1999)
  - Koala Offsets (Nat. Con Act 1992)
  - Marine Offsets (Fisheries Act 1994)
  - Carbon Offsets (Kyoto protocol & ETS)
- Recovery Program
  - voluntary offset program – alleviate your environmental footprint
- Technical services
  - Project mgt, community liaison, knowledge brokerage, GIS, environmental monitoring



Are you up to the challenge?

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Earthtrade
ENVIRONMENTAL BROKERS