

# Doing Business the Carbon Literate Way

By

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Fremantle.

360 Vodka Presents

# The World's First Eco-Friendly Gift Set



Gift Set Includes

- Energy Saving Philips CFL Bulb
- 100% Recycled 360 Vodka Guide To Going Green

360 VODKA  
www.360vodka.com



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Special Thank You

Cynthia Willard Lewis  
Holy Cross Neighborhood Association  
the nearly 1200  
members

HOOD CONTEXT



U.S.A.

# Brad Pitt's eco-development in New Orleans



**THE BIG PICTURE...**

# RESILIENT CITIES

## Responding to Peak Oil and Climate Change

Peter Newman, Timothy Beatley, and Heather Boyer

[www.resilientcitiesbook.org](http://www.resilientcitiesbook.org)



## GREEN URBANISM DOWN UNDER

*Learning from  
Sustainable Communities  
in Australia*

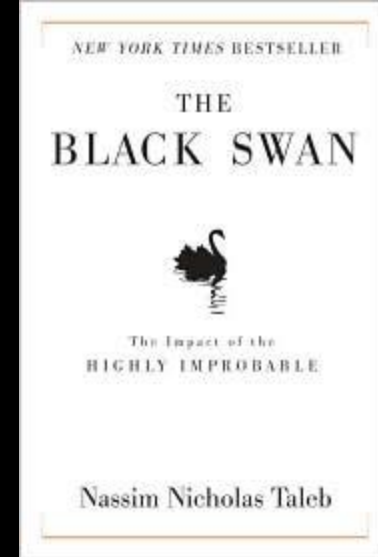
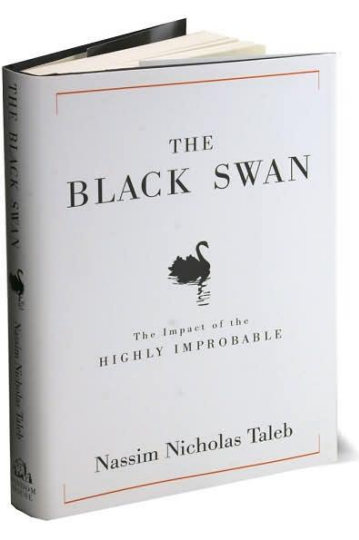


**Timothy Beatley  
with Peter Newman**

# Greetings from Perth

- the Swan River Colony, home of the Black Swan





Nassim Nicholas Taleb  
"The Black Swan:  
The Impact of the Highly Improbable."

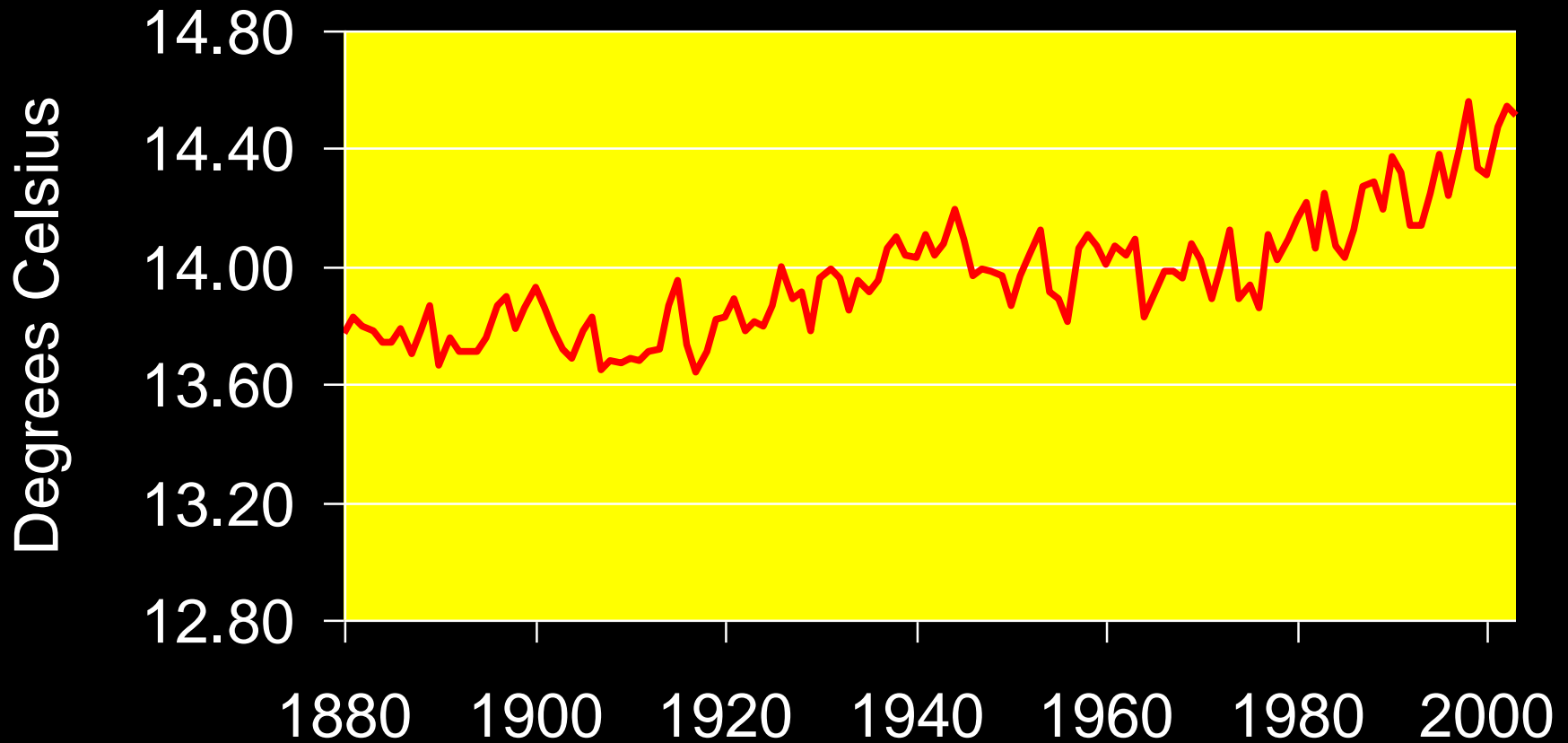
A black swan is something that cannot be predicted (the past will be no help to us as a guide to the future).  
Black Swans can be signs of fear or hope.

# The three unwanted Black Swans that could have been seen:

- Climate Change
- Peak Oil
- The Crash

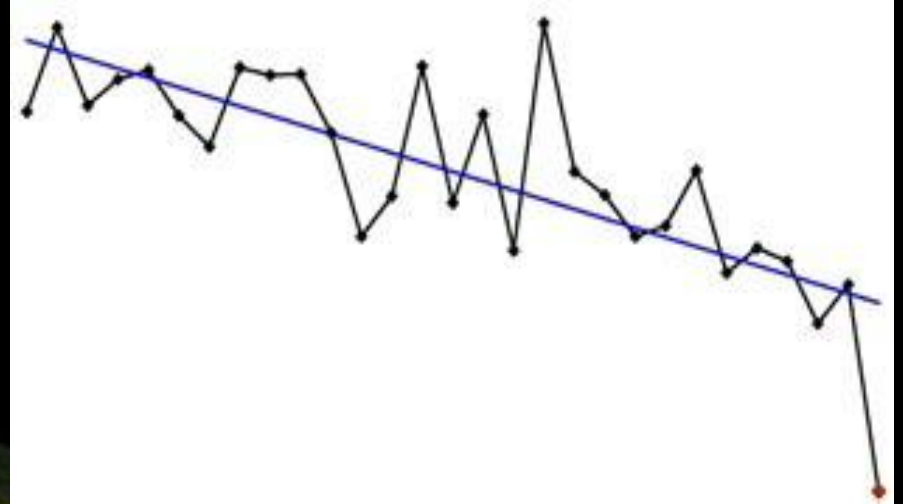
And how we can respond in our cities....

# Global Average Temperature at Earth's Surface (Land-Ocean Index), 1880-2003



Source: GISS

**Arctic sea ice extent 1978-2007**  
in millions of km<sup>2</sup>  
(National Snow and Ice Data Center)



**Climate  
change  
threatens  
cities  
and  
regions**





# The Economics of Climate Change

The Stern Review

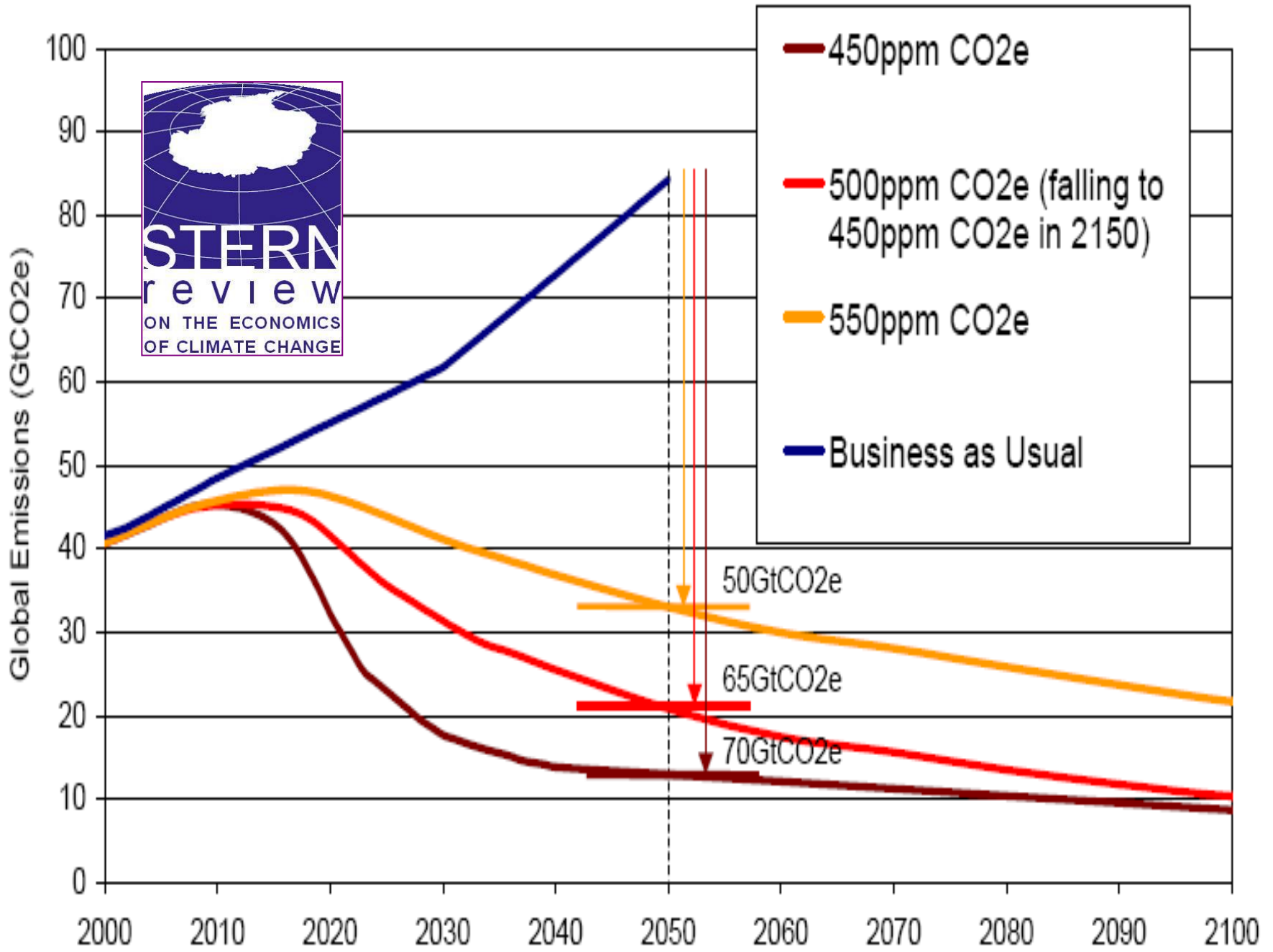


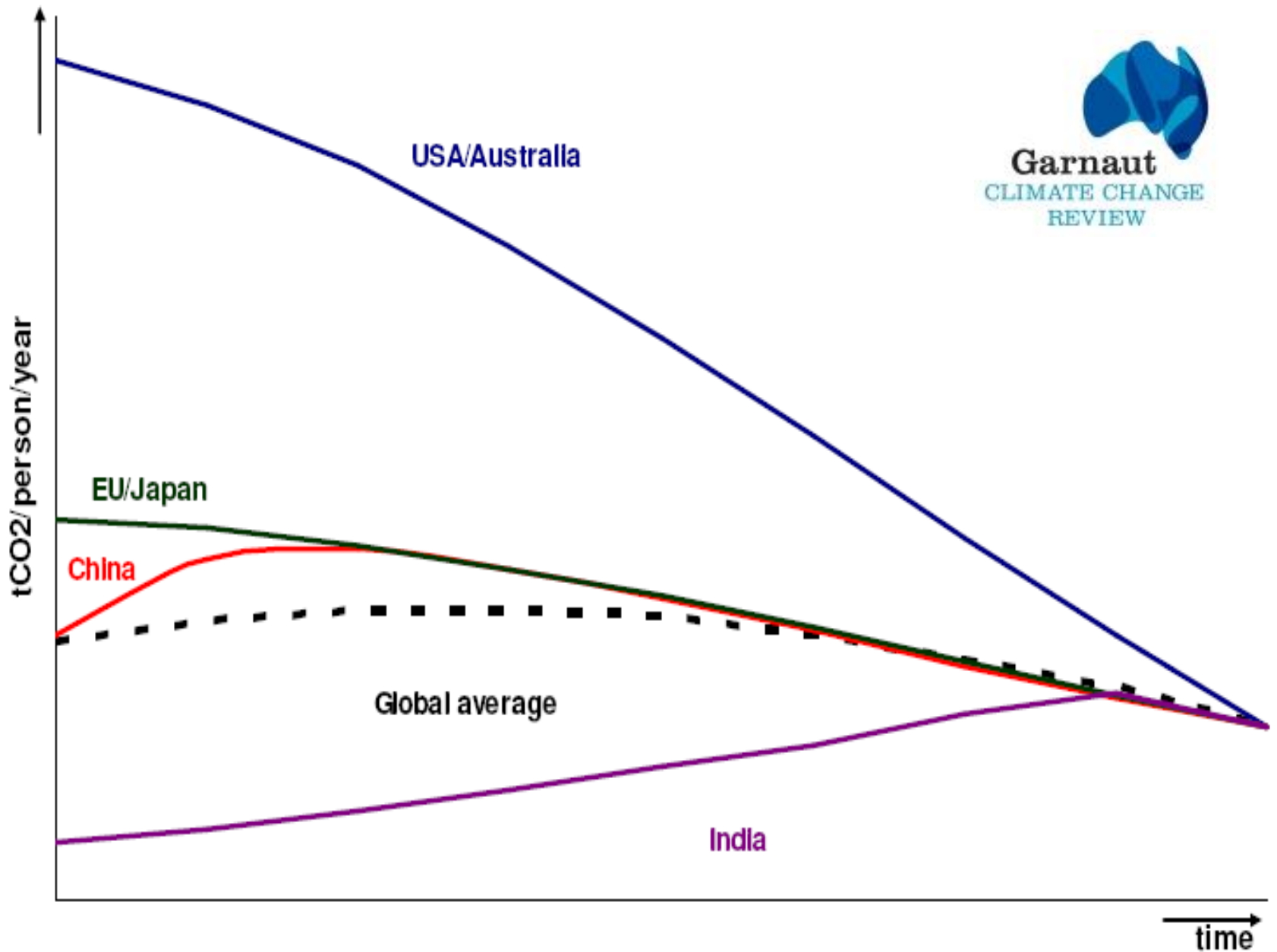
NICHOLAS STERN

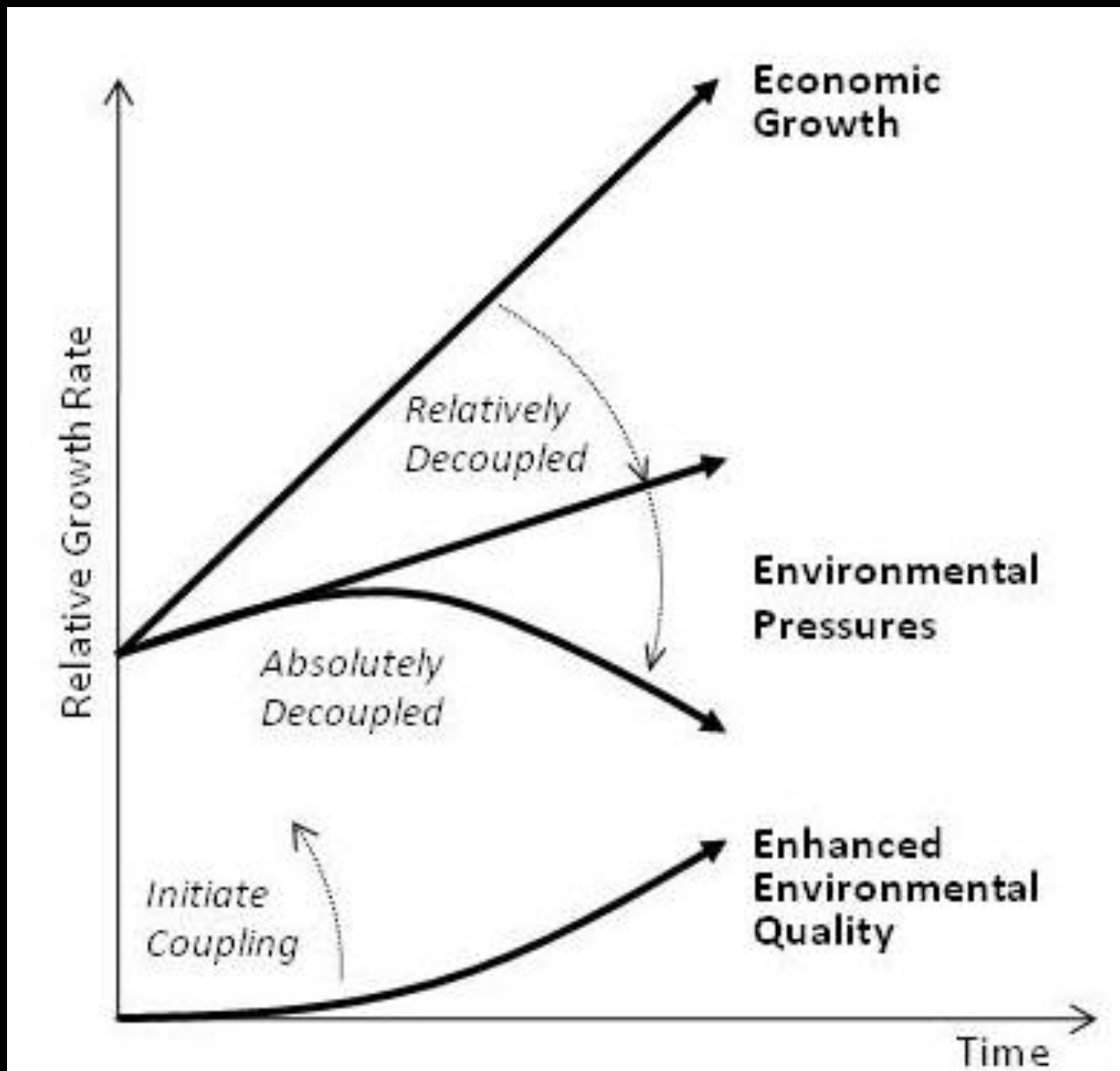
CAMBRIDGE

*“The costs of action to the global economy would be roughly 1 percent of GDP, while the costs of inaction could be from 5-20 percent of GDP...”*

The Stern Review, 2006







**DECOUPLING ECONOMIC GROWTH AND CARBON FOOTPRINT** *Source: TNEP (2008)*

# Global governance seeks 80% less ghg by 2050...

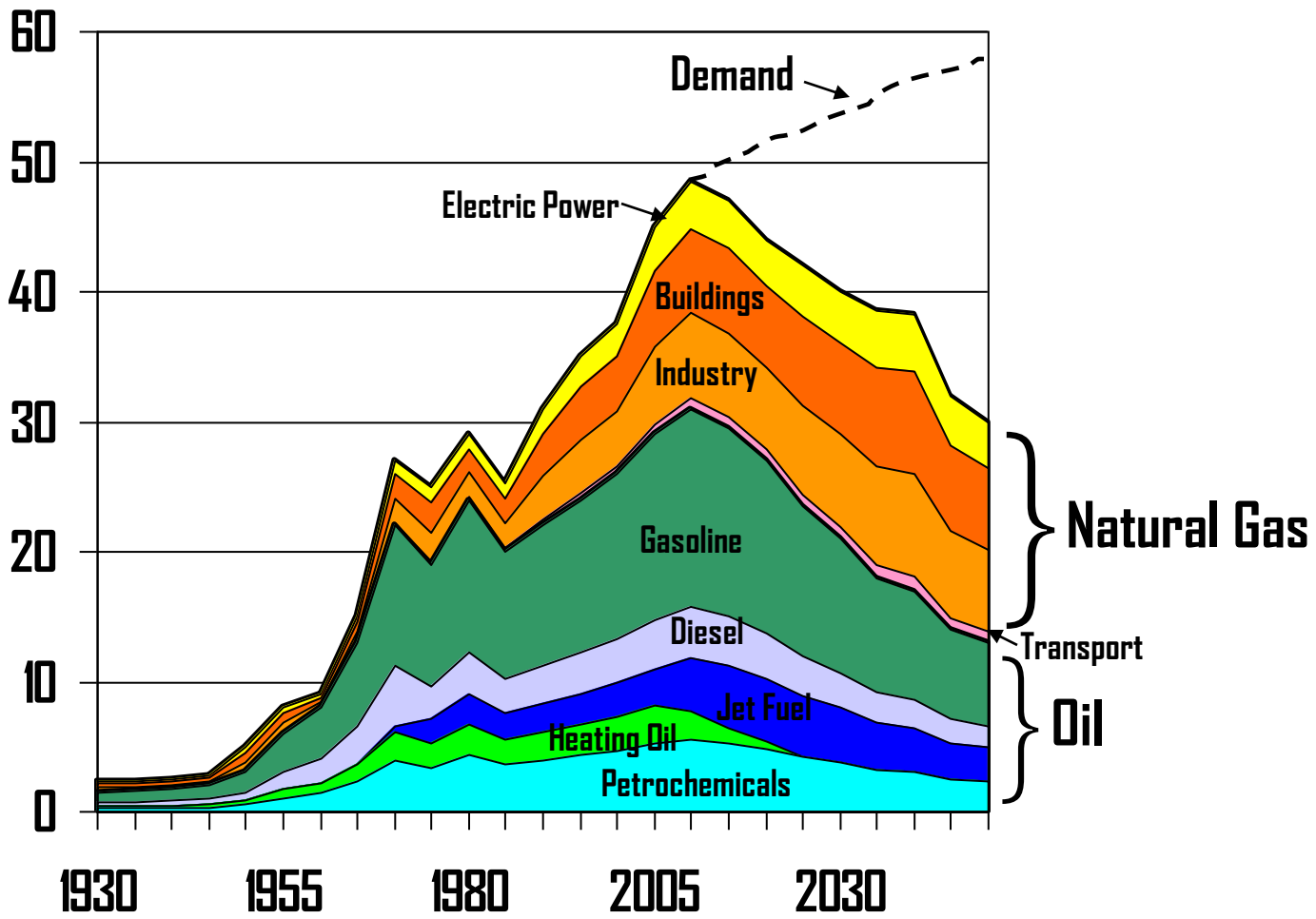
- Copenhagen road map in December 2009.
- Europe is leading and US is now helping.
- Australia is trying to help.
- There *will be* a treaty to phase out fossil fuels...
- Investor confidence in fossil fuel energy ....  
Where do we go?

# Peak oil happened in 2008...

- Peak oil predicted for 30 years... led to crash.
- The age of cheap oil is over even without carbon caps...



Source: U.S. Energy Information Administration



**Fig 2.3 How we use oil and natural gas & how this may change as they peak in production**

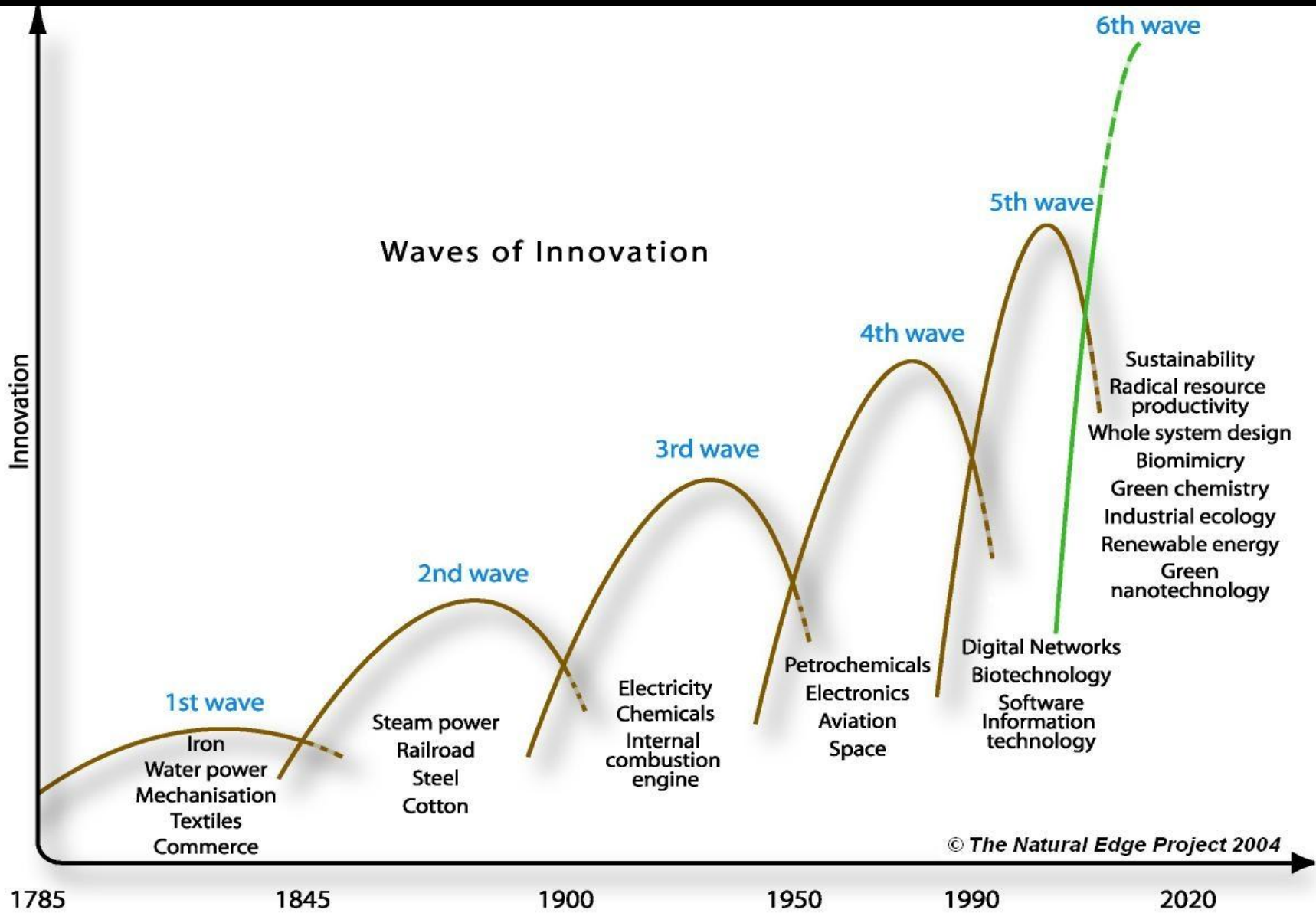
The CRASH....  
Fear abounds.... Are we RESILIENT?



# Resilient City

- Building a new economy in our cities which is more resilient...
- Positive Black Swans have happened before as new economies were created out of cities where the old confidence was replaced with the new.
- The only city of hope.....





# Resilient City includes...

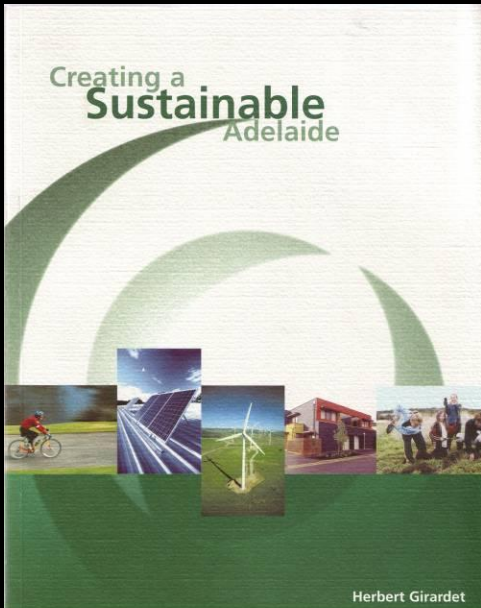
- Renewable Energy City
- Carbon Neutral City
- Distributed City
- Photosynthetic City
- Eco-Efficient City
- Place-Based City
- Sustainable Transport City

*All combine the digital, smart technologies with the new technologies of sustainability.*

# Renewable Energy City



North Terrace Solar Precinct



Herbert Girardet

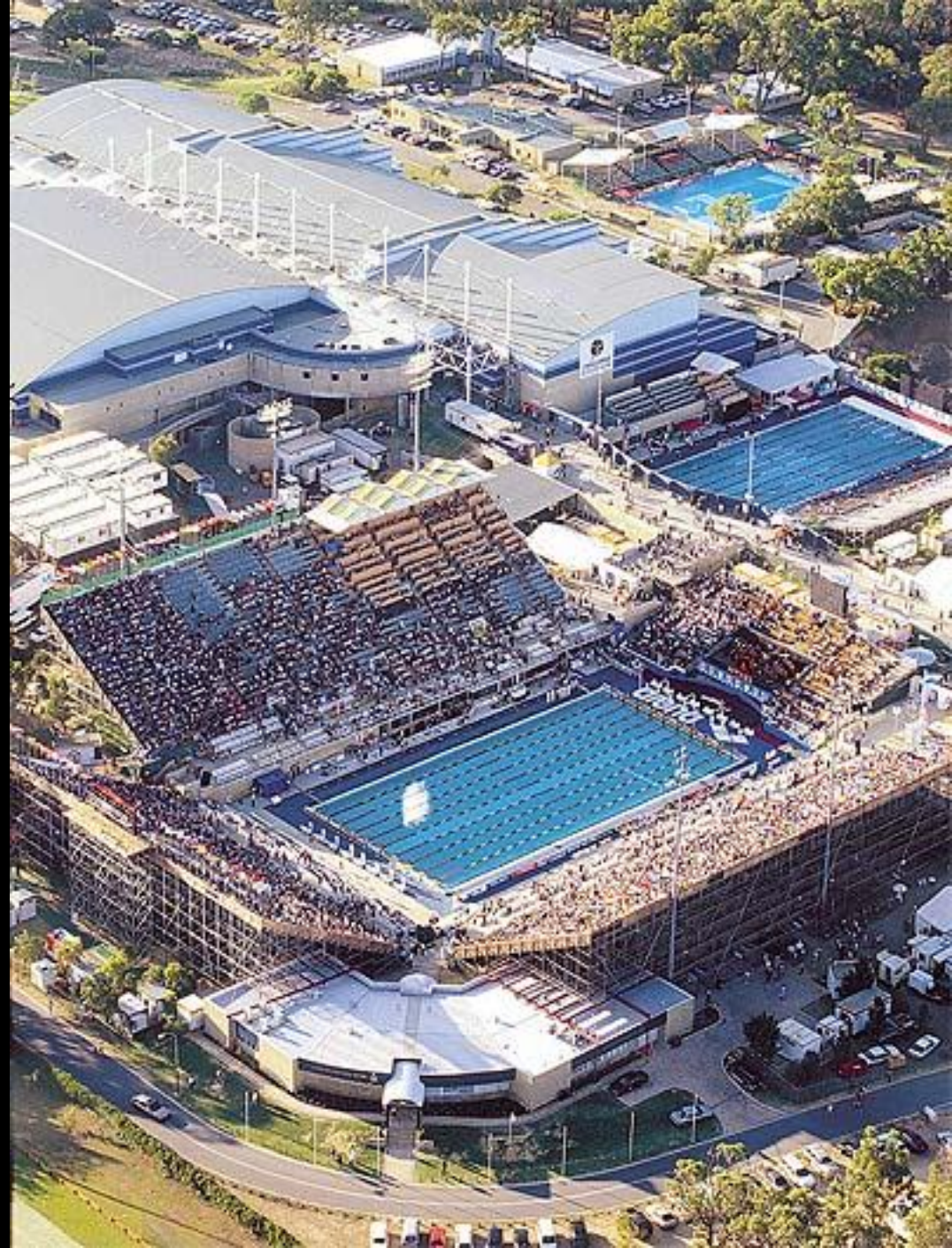
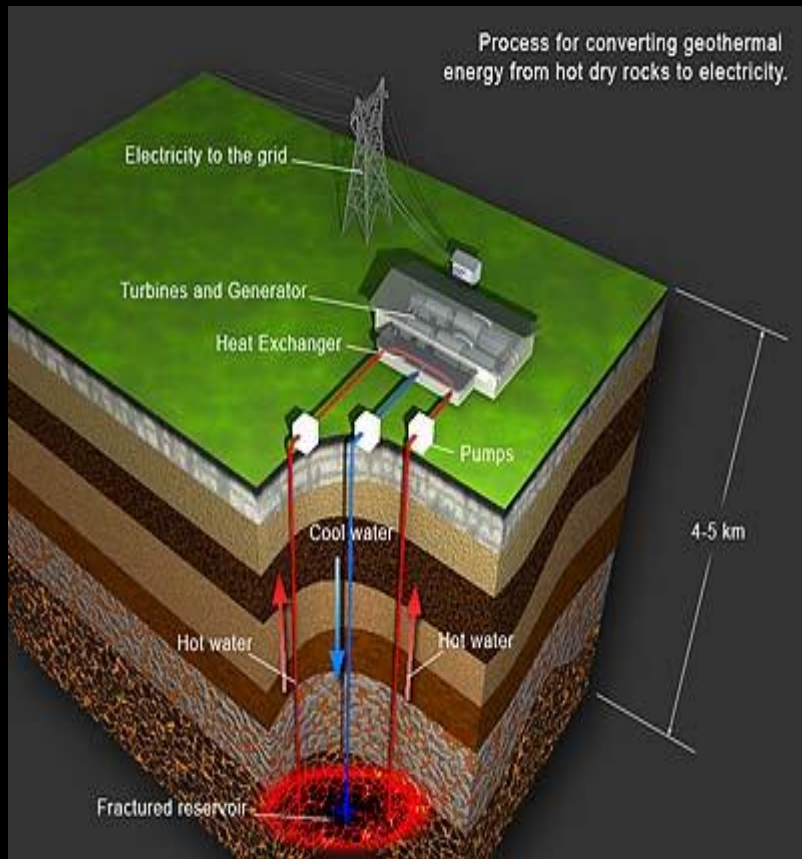


Adelaide Solar City

# Masdar City – solar and wind only



# Challenge Stadium Geothermal

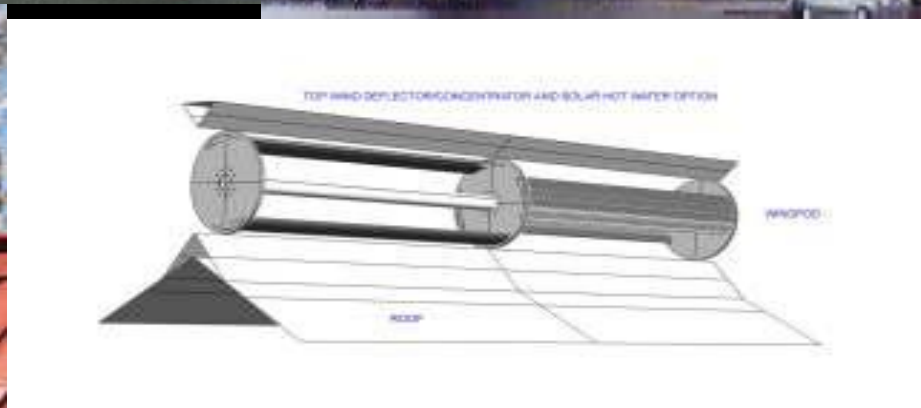
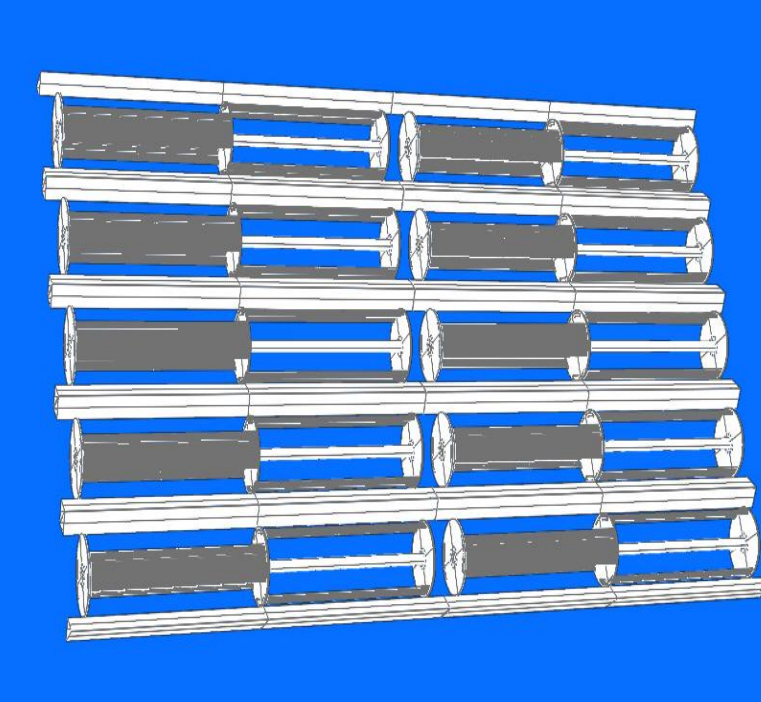


# CETO Wave Power





**PV Solar growing at 40% per year-  
tripled Perth's PV in past 6 months**



**Roof mounted wind systems eg Windpods, exporting to China, made by a car parts manufacturer....**

# How do you store renewables?



# CARBON NEUTRAL CITIES

# Carbon neutral...

- Households... (eg Edwards)
- Football teams (eg Eagles)
- Royalty (eg Prince Charles)
- Air travel (anyone who wants to...)
- Any business eg News Corp...



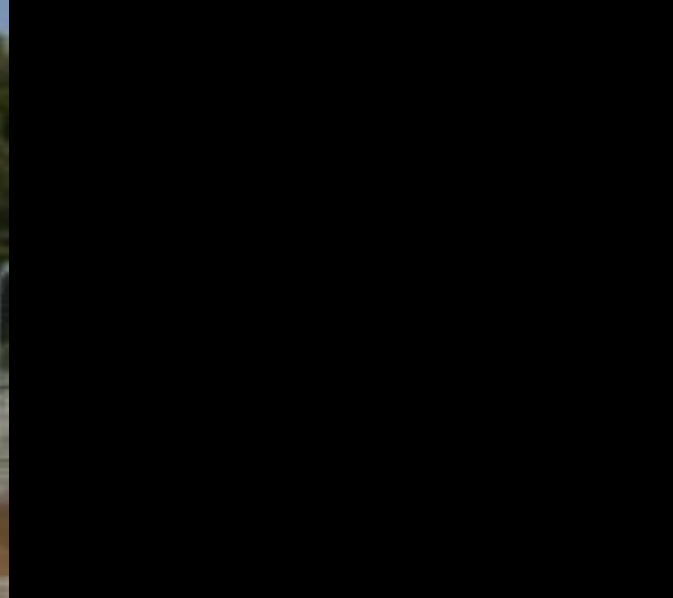
# How do you go CARBON NEUTRAL?

- 1. *Reduce fossil fuels* by a combination of behaviour change and new technology. **ESSENTIAL!****
- 2. *Add renewable electricity* (eg by Greenpower) or renewables.**
- 3. *Capture the remaining CO<sub>2</sub>* – usually in trees (eg Men of the Trees or Greening Australia).**



# GreenPower™

*Accredited Renewable Energy*



# Carbon Offsets...

Bioregional connection, eg Greening Australia and Gondwana Links.



**Greening Australia**  
*Breathe Easy*

THE SECRET TO  
**LIVING  
CARBON  
NEUTRAL**



# Carbon offsets from big companies like Shell and News Corp.



# South Fremantle High School

- 1<sup>st</sup> Carbon neutral school...
- Unveiling the PV from a community partnership...
- Forging links with the bush...



# Shutting down the urinals...



# Sustainable Transport City

**Electric renewable transport - for public and private transport.**

**ONE LANE -  
people per hr:  
Freeway 2,500  
Busway 5000  
LRT 10-20,000  
Train 50,000**



240 Persons travel  
to work:

-- in 177 Cars

-- in 3 Busses

-- in 1 Tram



Opening of new Southern Railway  
90% approval ratings and already paid off.  
Carrying 55,000 per day cf 14,000 on buses.



# National and global model..

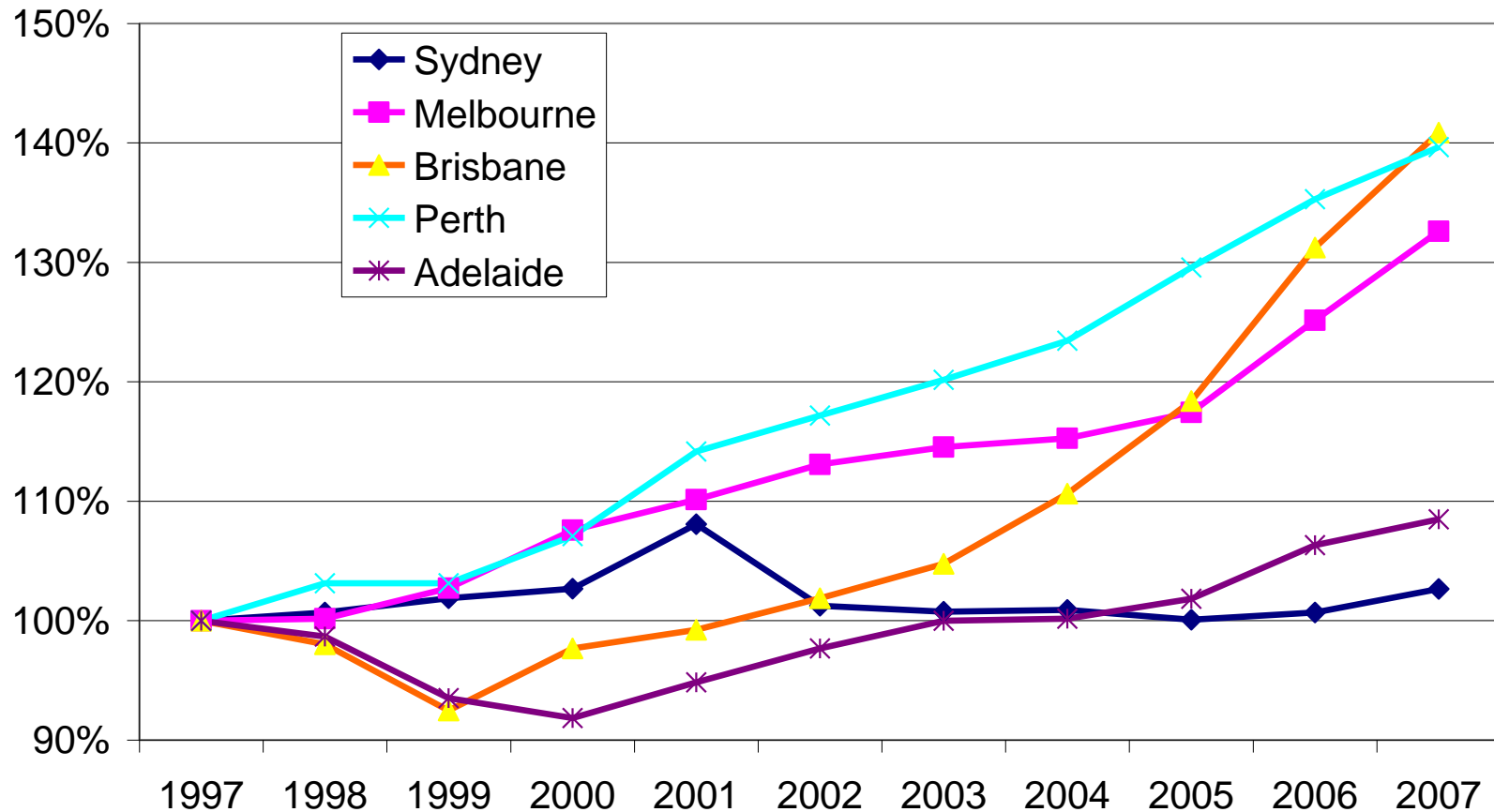
\$17 mill per km.



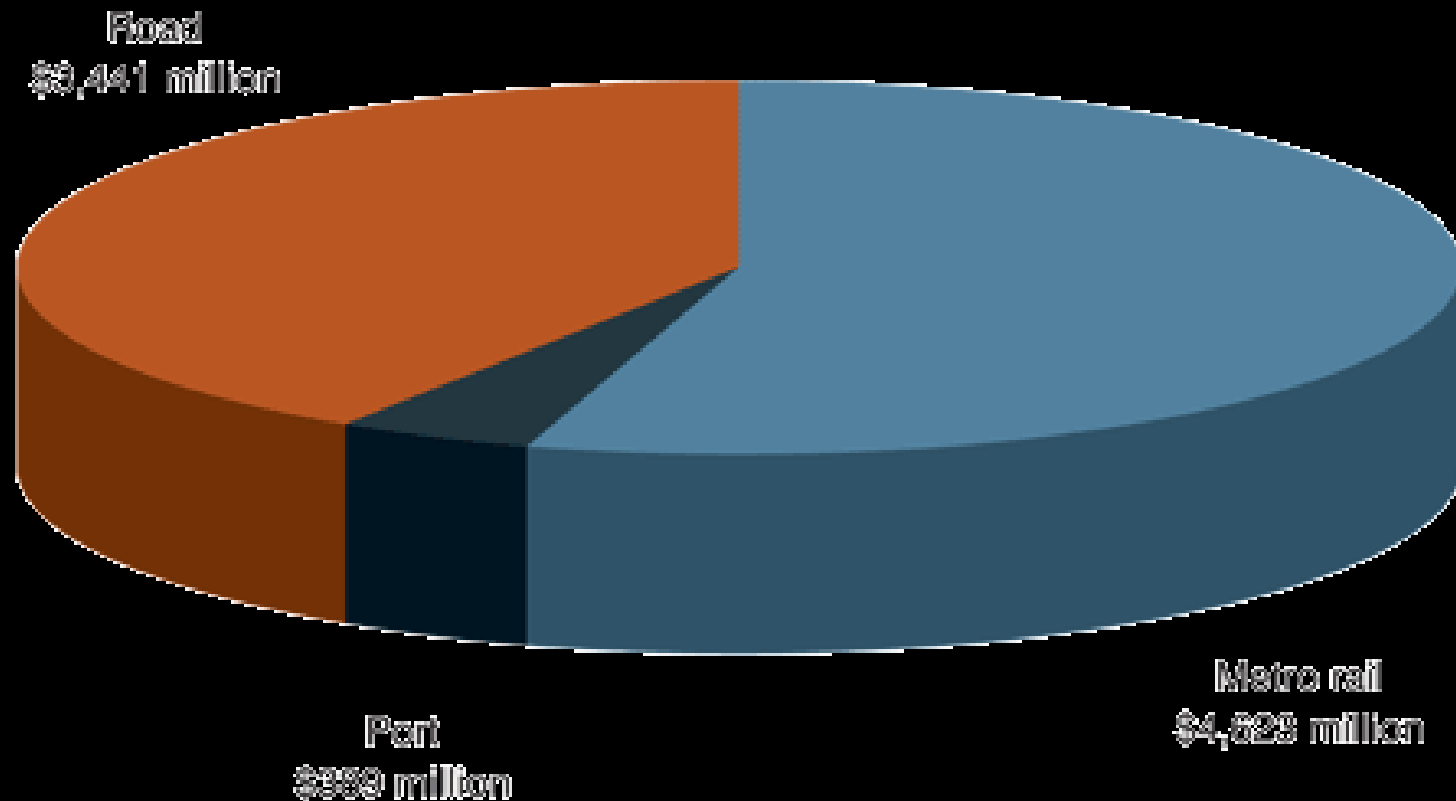
# Australian public transport is taking off...

- Perth led the way, Sydney falling behind the rest of Australia and comparable cities overseas in sustainable transport

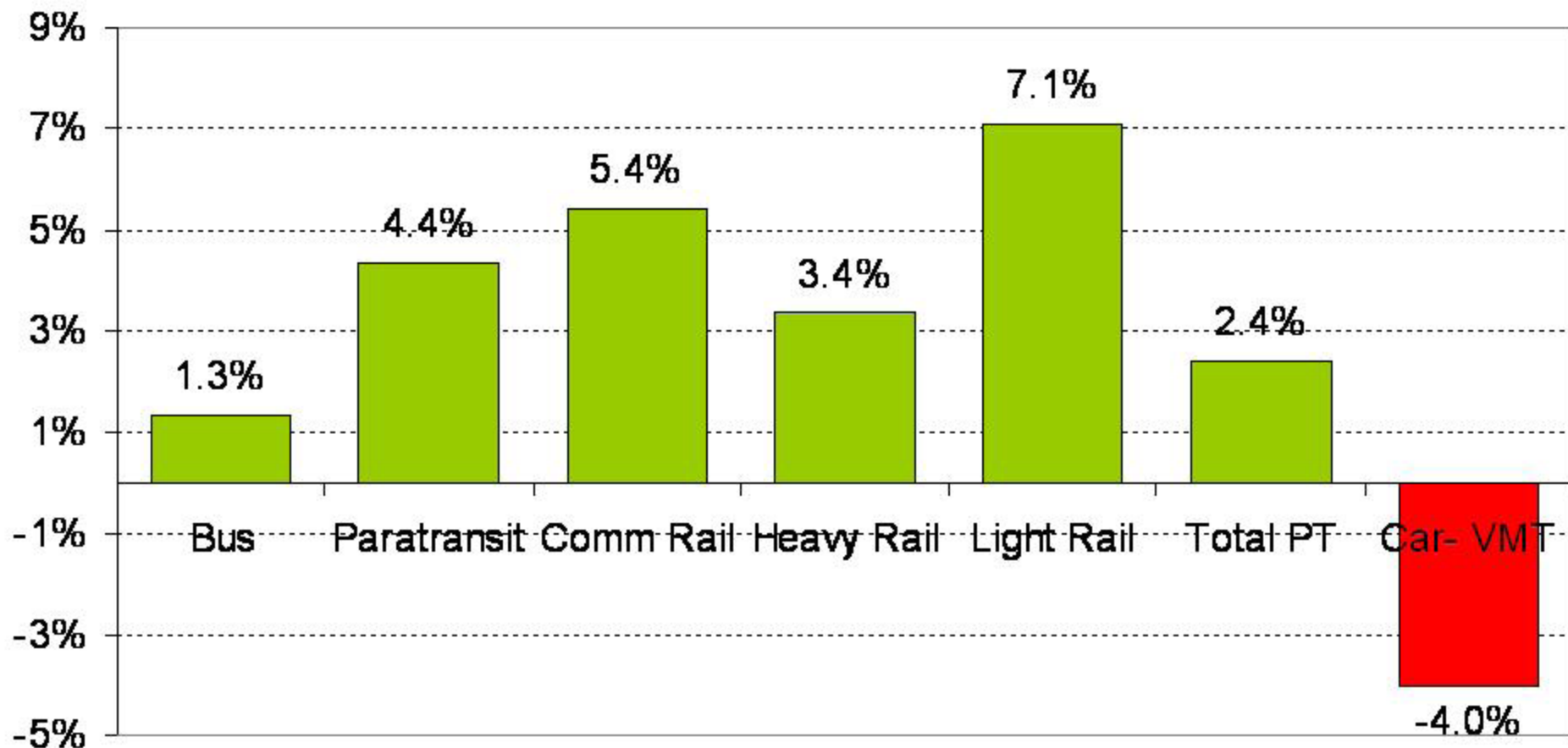
Percentage Growth in Public Transport Patronage Since 1997



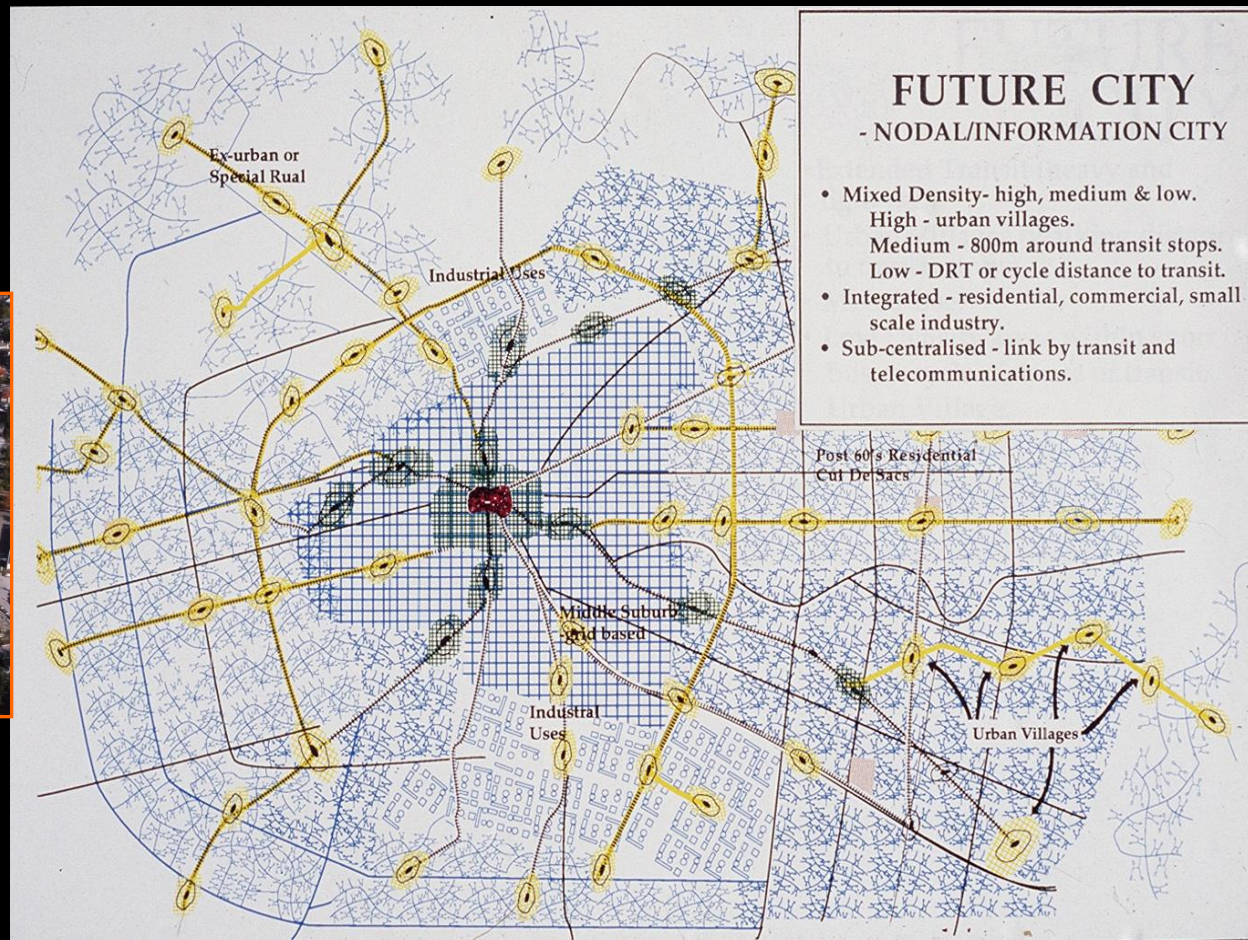
# Nation Building package – 55% urban rail...historic!



Public Transit Boardings and Vehicle Miles Travelled in US:  
March Quarter 2008 vs March Quarter 2007



# The need to live or work near a transit system... Businesses and residents save 20%





Subiaco TOD – value of land increased 5 times cf to non-rail areas.



ULTRADATA





JOONDALUP  
CENTRO

GRAND

BOAS AV

GRAN

Bendigo Bank

Bendigo Bank

TAXI

313 30

1313 30





Clarkson

Perth

- You must have a valid ticket to travel
- SmartRider patrons must tag on and off
- For your safety, video cameras are in use
- Riding of bicycles or skateboards etc. is prohibited on this station
- Smoking is prohibited at this station

# ELECTRIC VEHICLES

How to adapt to the other 50% of car use and move to 100% renewables  
- at the same time.

- V2G and **PHEV** with a Smart Grid...
- Better Place project.

# Link renewables into a Smart Grid *and store in electric vehicles* *(Li-Ion batteries)*



**Can now make 100% renewable city...**

**Two way flow with electric vehicles provides the  
breakthrough for a resilient renewably-powered  
grid.**

**Israel, Denmark and three Australian cities  
starting.**

**'Renewable Transport'**

**[www.sustainability.curtin.edu.au](http://www.sustainability.curtin.edu.au)**



North Port Quay - Perth  
Carbon-free development based on  
renewables, Smart Grid and electric  
vehicles.

# EV Works – new EV businesses in WA

- Exporting retrofit technology to China... from Caves Road.



# 'Global Green New Deal'

- UNEP report on how to green the economic stimulus packages...
- Green growth, green economy, clean tech....
- [www.unep.org/greeneconomy/docs/GGND\\_Final%20Report.pdf](http://www.unep.org/greeneconomy/docs/GGND_Final%20Report.pdf)



## Renewables Package

1. Renewables Australia \$0.5b
2. Solar flagships \$1.5b
3. 20% by 2020.
4. National grid to facilitate renewables
5. Smart grids to facilitate V2G (part of NEEI).



# Household packages...

- **Living Smart...** 1 tonne ghg saved per home.
- **Green Loans...** 1 July 2009 starts, interest free loan of \$10,000 after home audit is completed.
- **Feed-in tariff...**

# Business Packages...

- All changing July 1<sup>st</sup>....
- [www.climatechange.gov.au](http://www.climatechange.gov.au)

# Who will lose?

- Cities and businesses with the most coal as their base electricity supply.
- Cities and businesses which are the most car and oil dependent.
- Cities and businesses that think this will all go away...

# Who will win?

- **Cities and businesses that lead in decarbonising their operations.**
- **Cities and businesses that start to make renewable, carbon neutral and sustainable transport experiments.**
- **Cities and businesses that generate hope.**

[www.sustainability.curtin.edu.au](http://www.sustainability.curtin.edu.au)