


Handout of presentation The Community Energy Transition by Paul Allen, CAT, UK





The Community Energy Transition

Energy 21 – 'Community Energy Transition' Seminar
August 16-18, 2008, CAT, Wales, UK

By Paul Allen, CAT, UK

http://www.inforse.org/europe/seminar08_Energy21.htm



Our wellbeing depends on:

- Climate Security
- Energy Security
- International Security

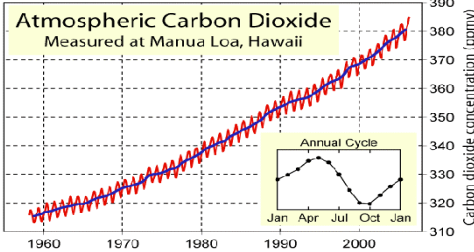




Climate Security

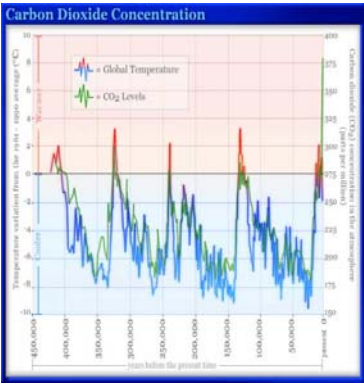

- We release over 8 billion tonnes of CO₂ into the atmosphere each year, but only half of it stays there.
- Roughly equivalent in ability, two major natural 'carbon sinks' - the oceans & the land based biosphere take up the rest
- Carbon sinks buffer us from the worst effects of our emissions, slowing climate change

Climate Security

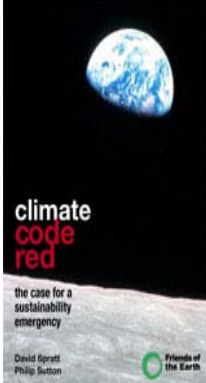



- Record CO₂ levels
- 0.8°C average global rise to date
- Earth has an enormous thermal mass
- 30-40 years until a new equilibrium is reached
- Locked into at least another 0.6°C temp rise

Climate Security

- IPCC 4th Assessment Report
- 2°C / 550ppm tipping point
- Runaway feedbacks begin
- Lessons to date
- Systems are more sensitive
- Conservative position



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Arctic ice melt

- "The loss in summer of all eight million square kilometres of Arctic sea-ice now seems inevitable, and may occur as early as 2010, a century ahead of the Intergovernmental Panel on Climate Change projections."
(Climate Code Red)
- "Targets of 550ppm must become 350ppm if humanity wishes to preserve a planet similar to that on which civilisation developed"
(James Hansen NASA Goddard Institute for Space Studies)

Arctic sea ice loss compared to IPCC models
Arctic ice extent loss to September 2007 compared to IPCC modelled change using the SRES A2 CO2 scenario (IPCC high CO2 scenario). September ice data from satellite observations. Data smoothed with a 4th order polynomial to smooth out the year-to-year variability. Chart courtesy of Roger Sandberg, Science Centre for Climate Research and University Center at Southwest Norway. Date: 23 September 2007. www.uib.no/~uic/interregional/20070923

globalcontext

Failing Sinks

- In September 2007, the University of East Anglia presented a ten-year study that gauged CO₂ absorption through more than 90,000 measurements from North Atlantic merchant ships equipped with automatic instruments.
- The results show ocean CO₂ uptake halved between the mid-90s and 2005.
(20 October 2007, BBC News)

globalcontext

Failing Sinks

- Land based sinks are also increasingly under threat from mass logging, industrial agriculture and soil degradation
- Rising CO₂ levels and rising temperatures are both increasing the pressure on the Earth's natural carbon sinks.

globalcontext

Climate Security

- Triggering runaway feedbacks in climate change could entail massive agricultural losses, widespread economic collapse, international water shortages, massive rises in sea levels, a decrease in the Gulf Stream, refugee problems on a scale not yet experienced.
- Basically a global catastrophe on a scale that would dwarf recent climate chaos and run for tens of thousands of years.

globalcontext

Energy Security

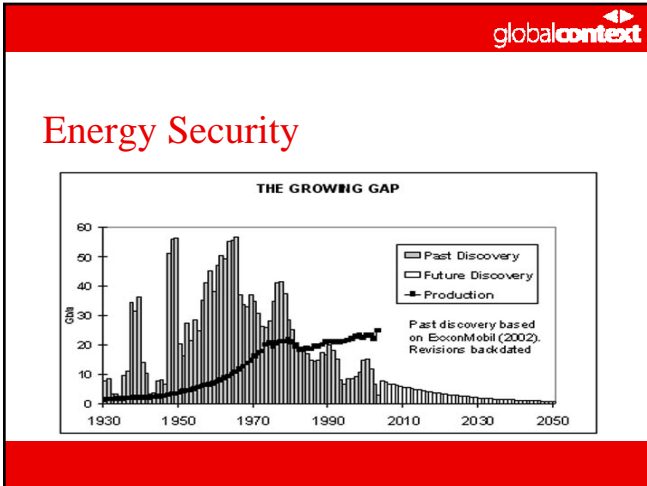
- Fossil Fuels are incredible!
- 1 Gallon = 6 weeks labour
- US daily use = 20,000,000 person years of labour
(Heinberg 2007)

globalcontext

Energy Security

- The way oil depletion affects industrial society is not the way running out of petrol affects a car
- This problem doesn't happen when you're just about to run out of oil
- It happens when it's half gone
- Beyond this point, the oil is slower flowing and of a lower quality - so it takes more cash, more energy and more time to bring it to market

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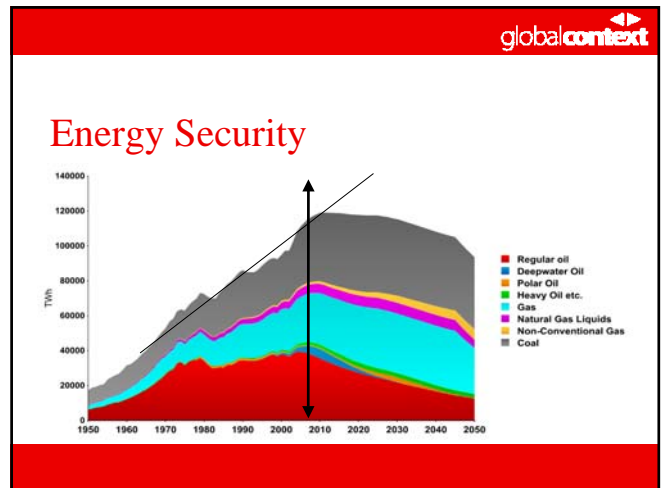


Energy Security

There are currently 98 oil producing countries in the world, of which 64 are thought to have passed their geologically imposed production peak, and of those 60 are in terminal production decline.
 (David Strahan www.energybulletin.net)

Energy Security

- 'Peak oil' is about running out of easy-to-get, easy-to-refine cheap oil.
- That means that just as energy demand is exploding across the globe, world production is nearing its 'peak'
- So, for the first time in human history, we will no longer be able to increase the rate at which we can pull oil out of the ground, refine it and bring it to market.



Energy Security

Saudis warn on oil capacity Carola Hoyos, April 22

- In unusually frank remarks, Ali Naimi, the kingdom's oil minister, said: "Limited capacity along the entire supply chain is the real source of current global supply tightness and represents the greatest threat to ensuring adequate energy to fuel future economic growth."
- King Abdullah, the country's ruler, put it more bluntly: "I keep no secret from you that, when there were some new finds, I told them, 'No, leave it in the ground, with grace from God, our children need it!'"

Energy Security


- Production rates will become limited by the geology
- Causing under investment in extraction and refining capacity
- Preceded by political limitations to support domestic demand?
- Increasing international tension?
- A 3rd and final energy crisis
- Urgent need for preparation!

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Energy Security vs Climate Security

- Under business as usual, the impending peaks in oil and gas can only serve to push us down the road to conflict over remaining dirtier reserves, plus the coal, oil shale and tar sands, further accelerating climate change!
- The only option is a controlled global carbon descent strategy**



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International Security

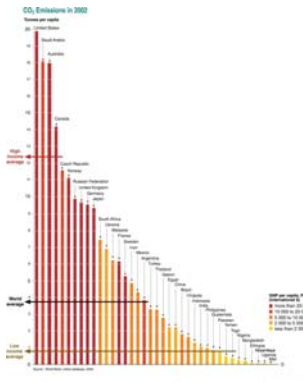
- The world's **360** wealthiest people have combined income of the poorest **45%** of the world's population (2.3 billion people).
- Britain's GDP = £17,200 per capita
Tanzania's GDP = £420 per capita
- A Britan = 10 Tonnes CO₂
An Afghani = 0.01 Tonnes CO₂
- Food riots in 37 countries so far in 2008
- Decreasing international security!



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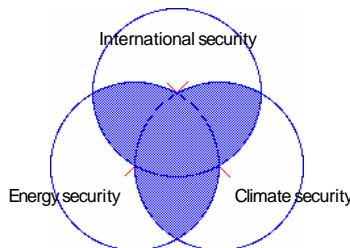
Global Equity

A global carbon descent strategy *must* recognise countries start from very different places



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An integrated solution



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So what do we do?

The carbon descent transition must happen across all levels of society;

- international
- nation
- regional
- city / town / village
- community
- home
- individual

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Transition at all levels

International level	- Join campaigns for action
UK & EU level	- Lobby our MPs & MEPs for action
	- Change attitudes across society
Local level	- Inform ourselves and others
	- Assess available resources
	- Assess technology options
	- Training and up-skilling
	- Take action on a town, community & personal level

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Transition Technologies

National, regional, community & domestic scale

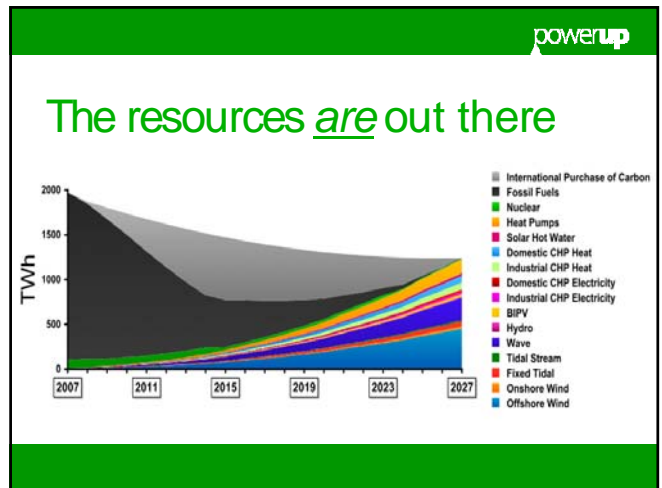
powerdown powerup

powerdown

- Sector by Sector
 - Household
 - Industry
 - Transport
 - Agriculture & Services
- 50% overall reduction achievable

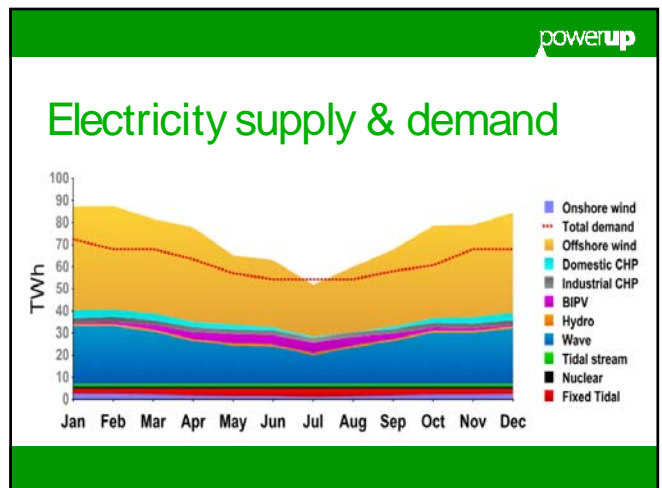
powerup

- 100% Renewable!
- Electric Britain
- Diverse mix of generation
- No new nuclear power

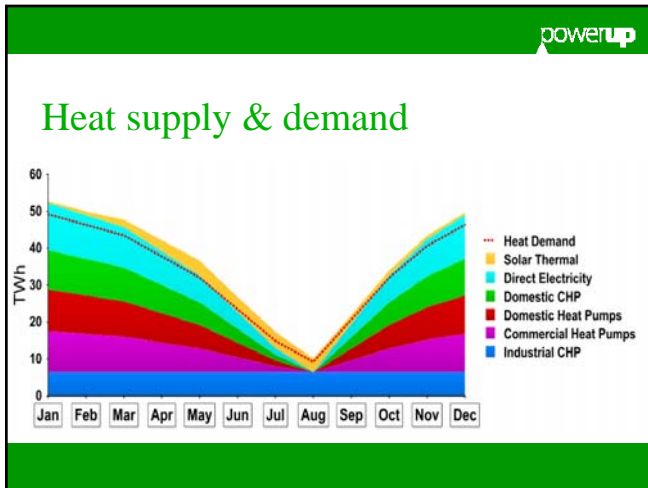


powerup

Britain is the Saudi Arabia of **wind** power



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Conclusions

- Scientifically inescapable
- Economically unavoidable
- Technically achievable
- It must now become **socially & politically thinkable**
- Time for action - at all levels!

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Conclusions

- We stand at a time where we still have the power to make the right choices.
- Only by dealing with the full scale and urgency of the problem at all levels of society can we create a realistic path back to a safe-climate, energy secure, equitable world.

Conclusions

- It is now time for radical action at a local & community level
- This is the challenge to be addressed by CAT, Energy 21 & INFORSE.

Conclusions: Governments

- We can't wait for governments, but we can't ignore them either
- They will get better (EU drivers)
 - 20,20,20
 - Green Revolution

Conclusions: Technologies

- PV
- Solar Hot Water
- Wind
- Hydro
- Biomass
- Combined Heat and Power
- Anaerobic Digestion
- Others?

Conclusions: Economics

- Increasingly attractive
- Fossil fuels prices rise
- New technology options mature
- Economies of scale
- Green New Deal

Conclusions: Support

- CAT, Energy 21, INFORSE
- CSE, EST, OU, Post Carbon Institute
- Transition network
- Local Authority
- Others...

Conclusions: Support

Post Carbon Cities

-Planning for Energy and Climate
Uncertainty
Daniel Learch,
www.postcarboncities.net

It's transition time...

- Change is coming, ready or not
- Our choice is between a future where we have been proactive and acted ahead of events, and a future where we have let events overtake us.

zerocarbonbritain
an alternative energy strategy

Full report available free from
www.zerocarbonbritain.com



www.cat.org.uk

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