Sustainable Energy Visions

By Paul Allen
Sustainable Energy Policy Seminar, October 1-5, 2007, Samsø, Denmark
http://www.inforse.org/europe/seminar07_samso.htm

Introduction

- A radical yet realistic vision
- Based on 35 years experience
- A closing window of opportunity
- To dream of things that never were

Mapping the unthinkable...

- Special period in history
- An open invitation to collaborate...
  - Research & Integration
  - Grassroots Support
  - EU?

Global Context

- Climate Change
- Energy Security
- Global Equity

Climate Change

- Record CO2 levels
- Triggering positive Feedbacks

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Climate Change
- Sink Failures
- Feedback
- Runaway effects

Methane Hydrates - Emergency Situation - Go to Zero Carbon -

Energy Security
- Peak Oil
- Geology & Production
- Dependency
- Depletion

Peak Oil

Global Equity
- Britain’s GDP = £17,200
  Tanzania’s GDP = £420
- British citizen = 10 Tonnes CO2
  Afghani citizen = 0.01 Tonnes CO2
- The 360 wealthiest people have combined income of the poorest 45% of the world’s population (2.3 billion people).

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‘Island Britain’ Scenario

- International
  - Contraction & Convergence

- National
  - Tradable Energy Quotas (TEQs)

- Sector by Sector
  - Household
  - Industry
  - Transport
  - Agriculture & Services

- 50% overall reduction

- POWERDOWN:
  - Sector by sector
  - 50% reduction
  - Electric vehicles
  - Organic food

Household
- Large-scale retrofit of existing stock
- New homes to be zero-carbon
- Demolish & replace worst performing dwellings, with exceptions
- Behaviour change
- Intelligent appliances

Industry
- Import/Export issues
- Chemical & Steel industries making significant reductions
- Needs extensive research
- TEQs framework would drive low- and zero-carbon innovation

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Transport

- Switch to electric vehicles – huge savings
- Efficiency & Generation
- Freight to rail
- Modal switches - “earthports”

Agriculture

- Switch to organic
- Significant land-use changes
- More biomass
- Reduction in livestock
- Relocalisation

Renewables...

- 100% Renewable!
- Electric Britain
- Diverse mix

Electricity Supply & Demand

Heat Supply & Demand

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Dealing with variability

- Demand
  - Reduced overall
  - Intelligent demand management
- Distributed generation
- Storage - e.g. V2G, Vanadium
- European Integration for next scenario...

Vital Catalysts

- Increased climate research
- Accelerated technology research & development
- Investment in new skills & training
- National public awareness campaign
- Robust cross-party consensus

Conclusions

- Scientifically inescapable
- Economically unavoidable
- Technically possible
- It now has to become... politically & socially thinkable

Sooner than expected.....

- The Liberal Democrats have launched a policy called 'Zero Carbon Britain – Taking a Global Lead', 6 weeks after the CAT report was presented to all the major political parties at various events in Westminster.
- Lembit Opik, MP for Powys and Montgomeryshire, and Shadow Secretary of State for Business and Enterprise said:
  - "These proposals were largely inspired by the Welsh based Centre for Alternative Technology and I would like to thank them for the ground-breaking work."

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