

# The drivers for renewables as a long term investment sector



*Philip Wolfe*

# A sustainable recovery path



Key drivers for the sector



Existing and emerging policies

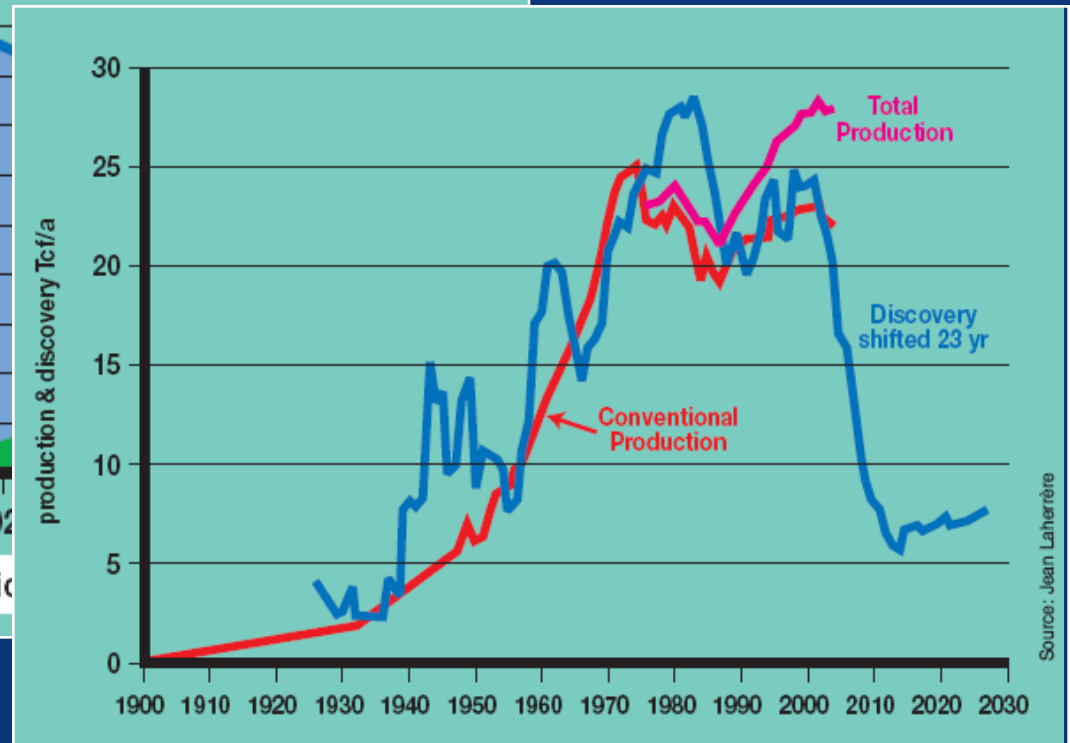
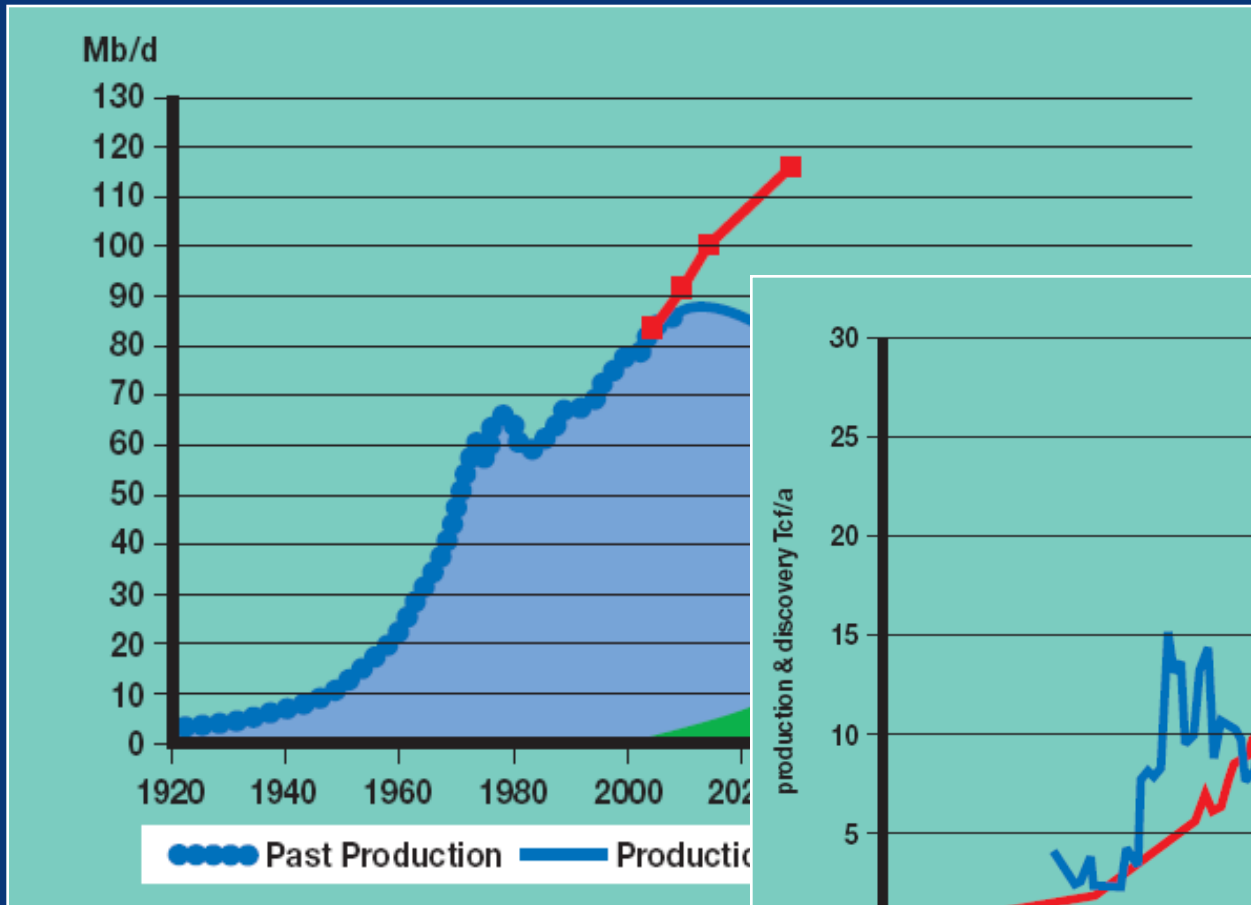


Investment opportunities



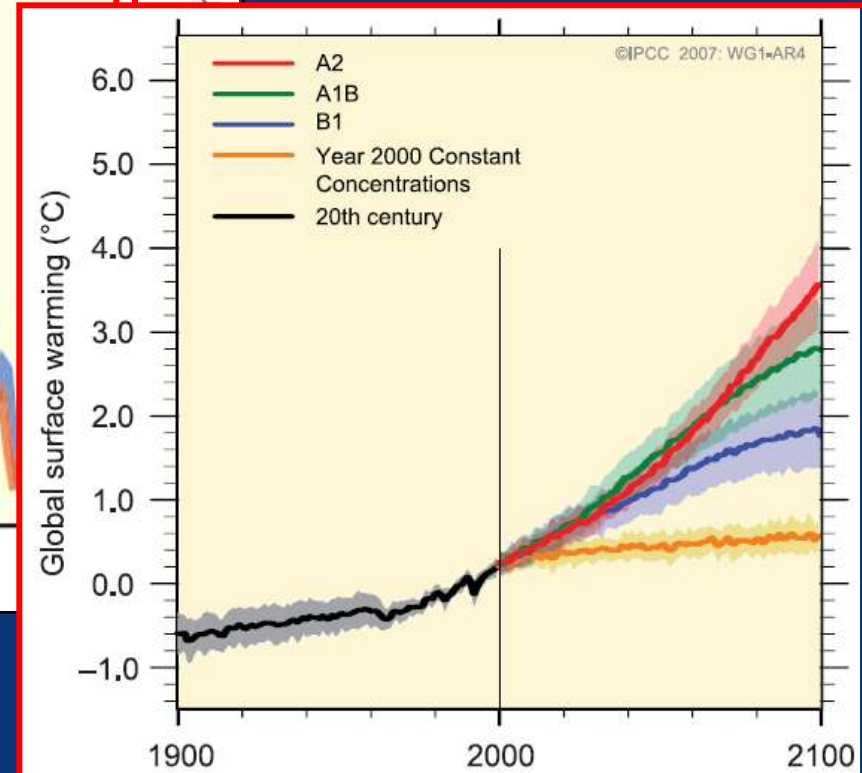
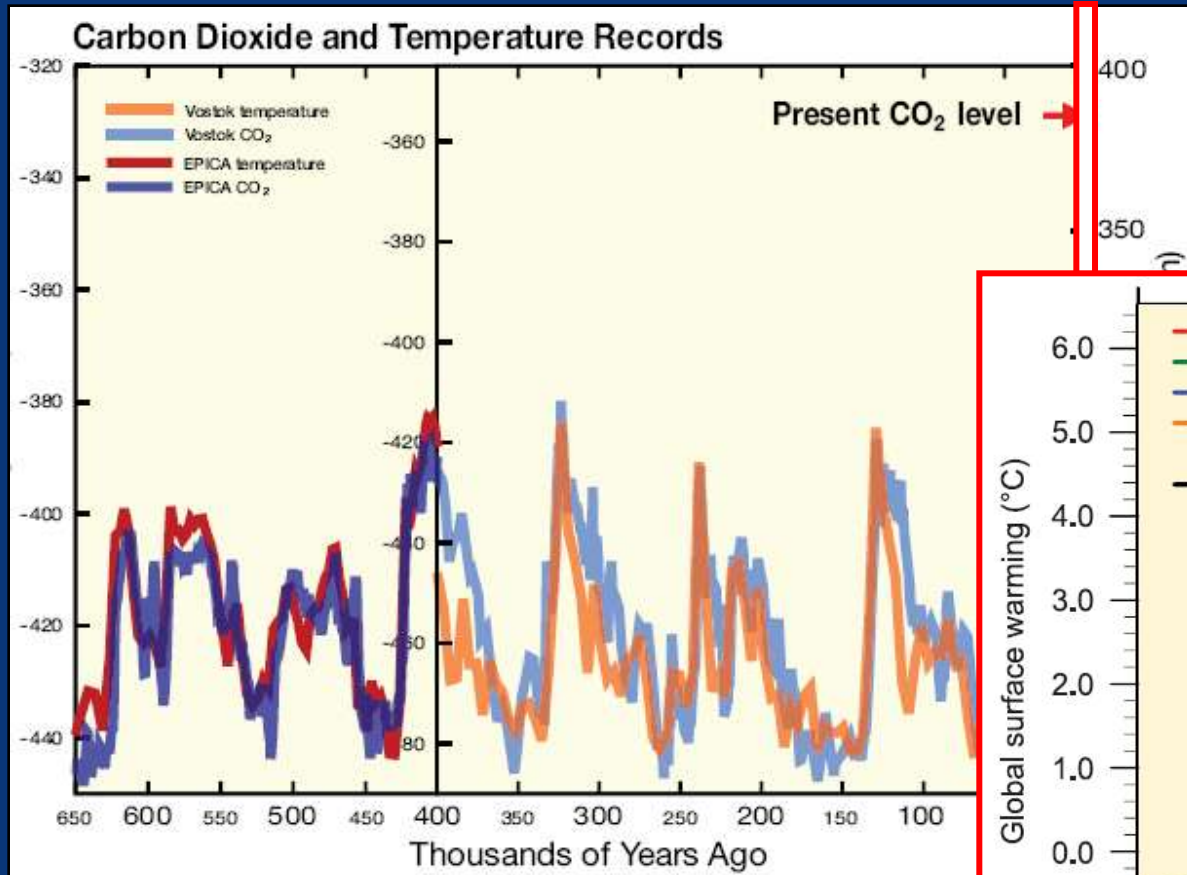
# Energy security

## Fossil fuel availability



# Environment

## Climate change trends



# Economics

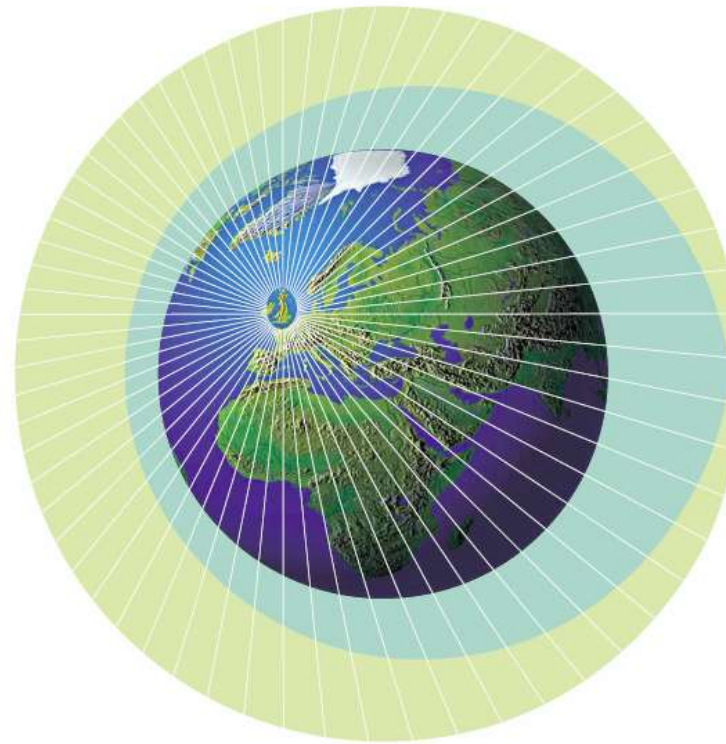
## Stern report for HM Treasury

- ▲ Stabilisation is essential and affordable
- ▲ Global emissions need to be >25% below current levels in 2050 for <550ppm CO<sub>2</sub>eq
- ▲ This will cost 1% of GDP p.a.
- ▲ 75% less emissions per unit GDP in 2050
- ▲ Doing nothing could be equivalent to a 5-20% reduction in consumption



# Existing and emerging policies

HM Government



**BERR** | Department for Business  
Enterprise & Regulatory Reform

**UK RENEWABLE ENERGY STRATEGY**

Consultation

JUNE 2008

# The EU 20-20-20 commitments

 Emissions reductions Binding

- > 20% unilateral, or
- > 30% if multilateral

 Energy conservation Non-binding

- > 20% below current projections

 Renewables Binding

- > 20% of total energy **UK share: 15%**
- > 10% of transport fuels

# Existing policies

## ▲ Centralised – energy industry

- > Renewables Obligation (electricity)
- > Renewable Transport Fuels Obligation

## ▲ Decentralised – energy users

- > Zero carbon buildings from 2016/2019
- > Carbon Emissions Reduction Target



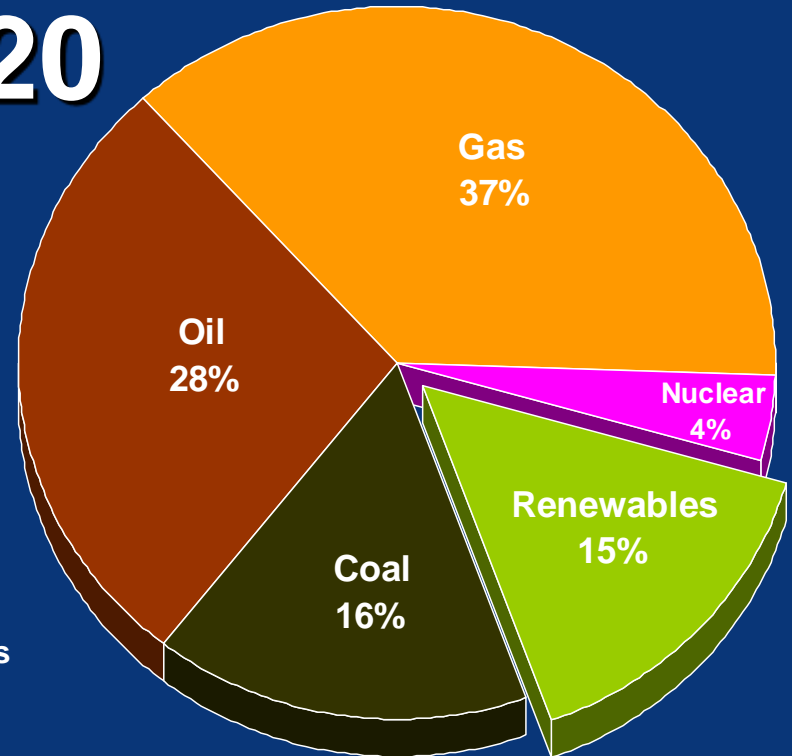
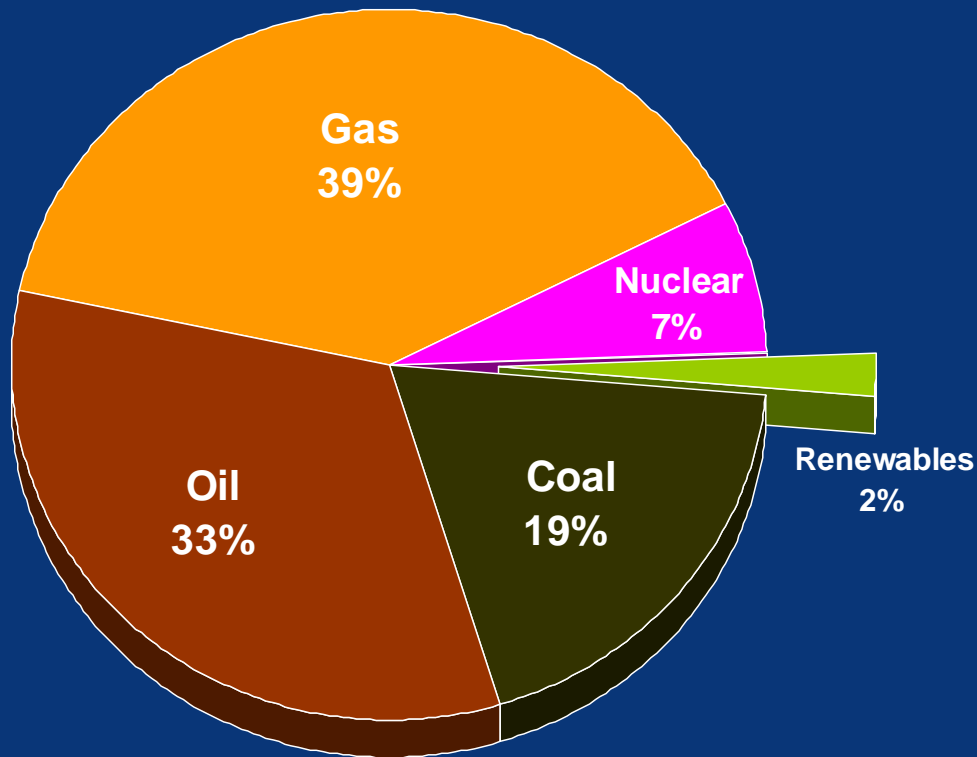
# Emerging policies

- ▲ Centralised – energy industry
  - > ‘Banded’ Renewables Obligation
  - > Electric vehicles, hydrogen
- ▲ Decentralised – energy users
  - > Renewable electricity and heat tariffs
  - > Biomethane injection into gas grid
  - > Carbon Reduction Commitment

# Renewables in total UK energy

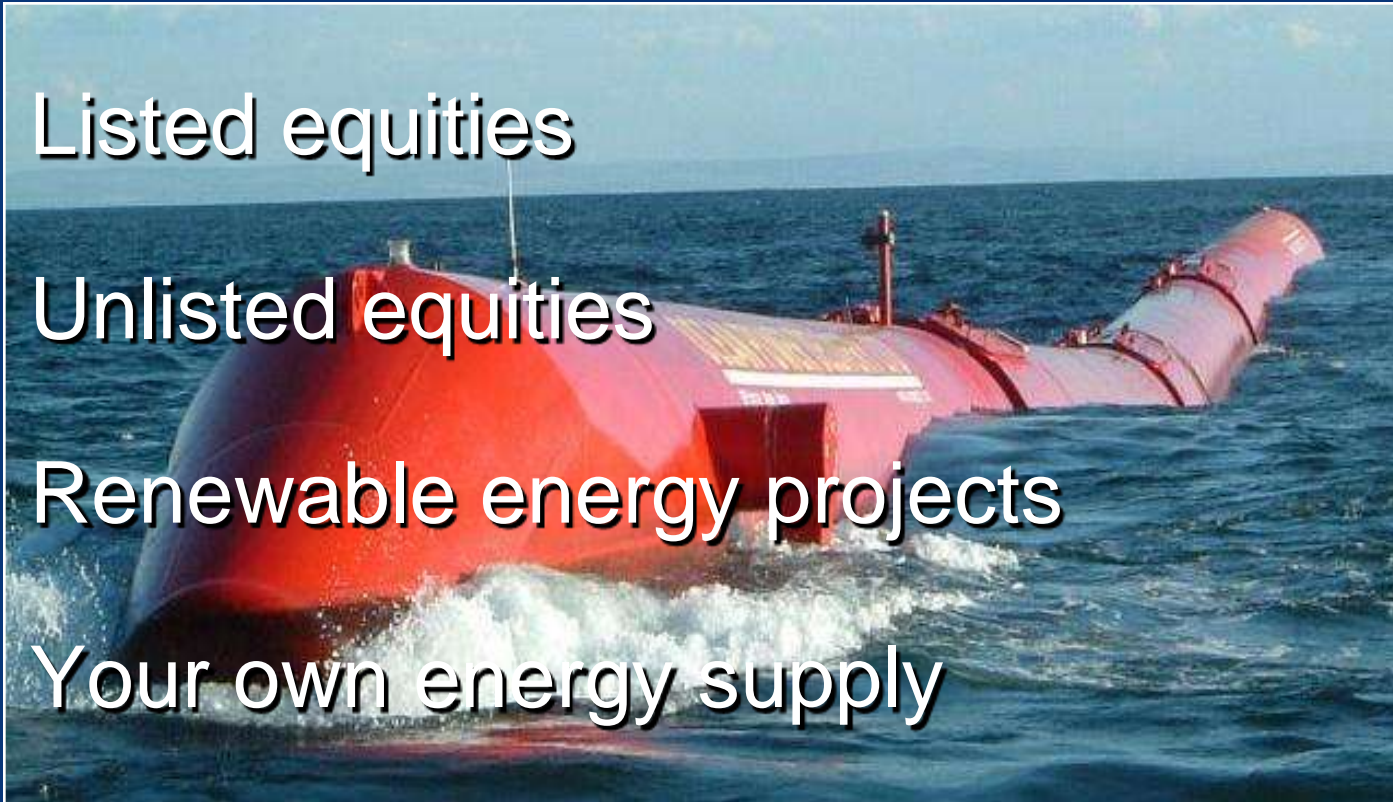
Today

2020

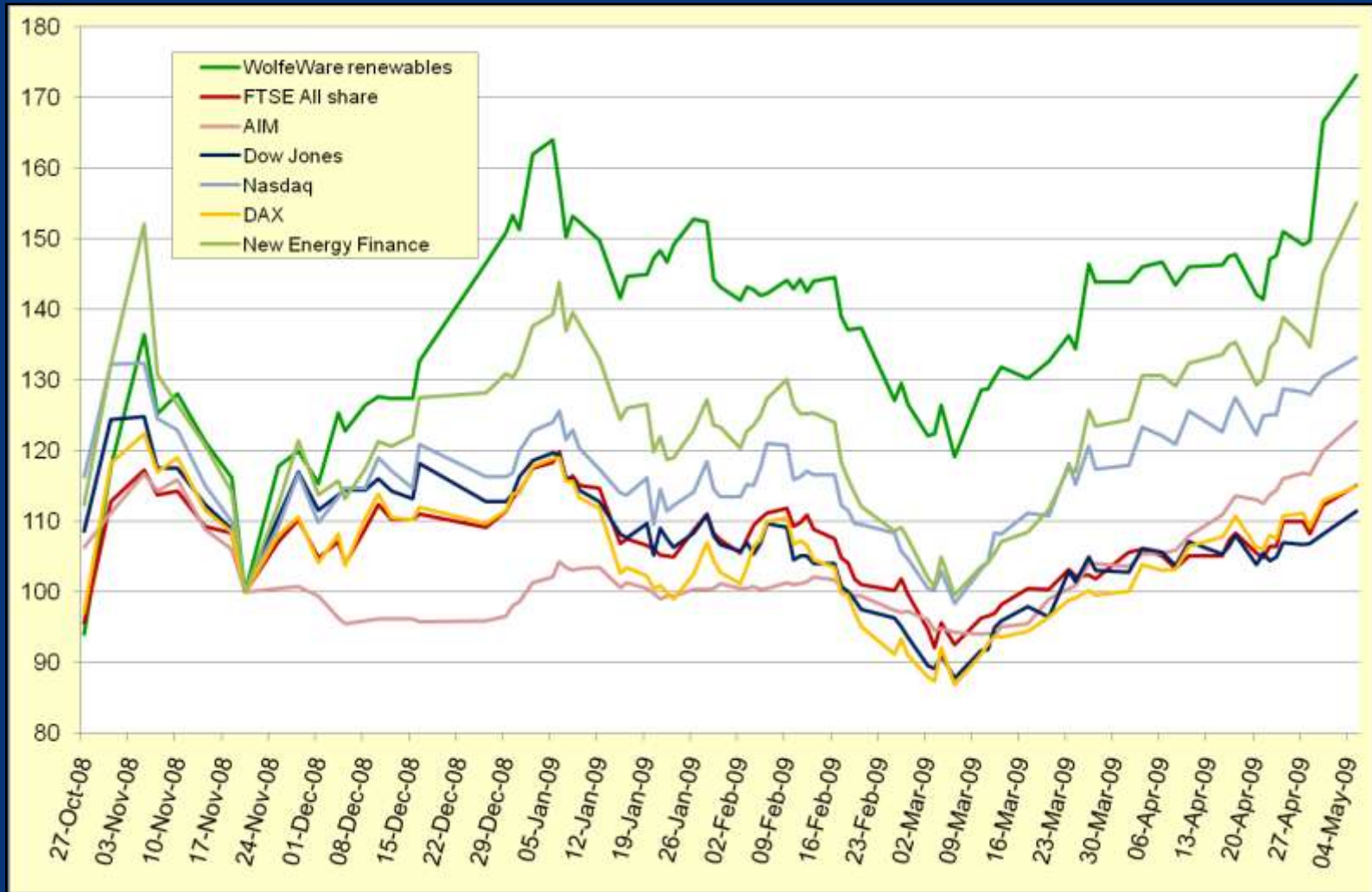


# Some investment options

- ▲ Listed equities
- ▲ Unlisted equities
- ▲ Renewable energy projects
- ▲ Your own energy supply



# Renewable energy listed equities





# Energy generation technologies

## ▲ New approaches in mature technologies

- > Offshore wind, tidal barrages and lagoons
- > Biomethane injection
- > Building-integrated PV and solar thermal

## ▲ Higher volumes and efficiencies

- > Heat pumps, micro-hydro
- > Anaerobic digestion, biomass boilers & CHP

## ▲ Emerging renewable technologies

- > Tidal stream and wave energy
- > Second generation biofuels, microbial energy

# Decentralised energy integration

- ▲ Heat networks
- ▲ Intelligent distribution
  - > Smart metering
- ▲ Active load management
- ▲ 'On-site' energy integration /
  - > Home and office Intelligent user interfaces
  - > 'In-store' renewable cooling
  - > 'On-farm' energy systems



*Everyone will be  
in the energy business*



# For more information

## Renewable Energy Association:

- > [www.r-e-a.net](http://www.r-e-a.net)
- > [PWolfe@r-e-a.net](mailto:PWolfe@r-e-a.net)

## Contact me:

- > [Philip@WolfeWare.com](mailto:Philip@WolfeWare.com)

## The Stern Report:

- > [www.hm-treasury.gov.uk/sternreview\\_index.htm](http://www.hm-treasury.gov.uk/sternreview_index.htm)

## International Renewable Energy Agency

- > [www.irena.org](http://www.irena.org)