

Renewable Industries



Philip Wolfe

Renewable Energy Association

Renewable Energy Association

- > ~500 members from multinationals to 'one-man bands'
- > Renewable heat, power, fuel & CHP
- > All technologies: biomass, bio-energy, solar, wind, wave, tidal, hydro, heat pumps

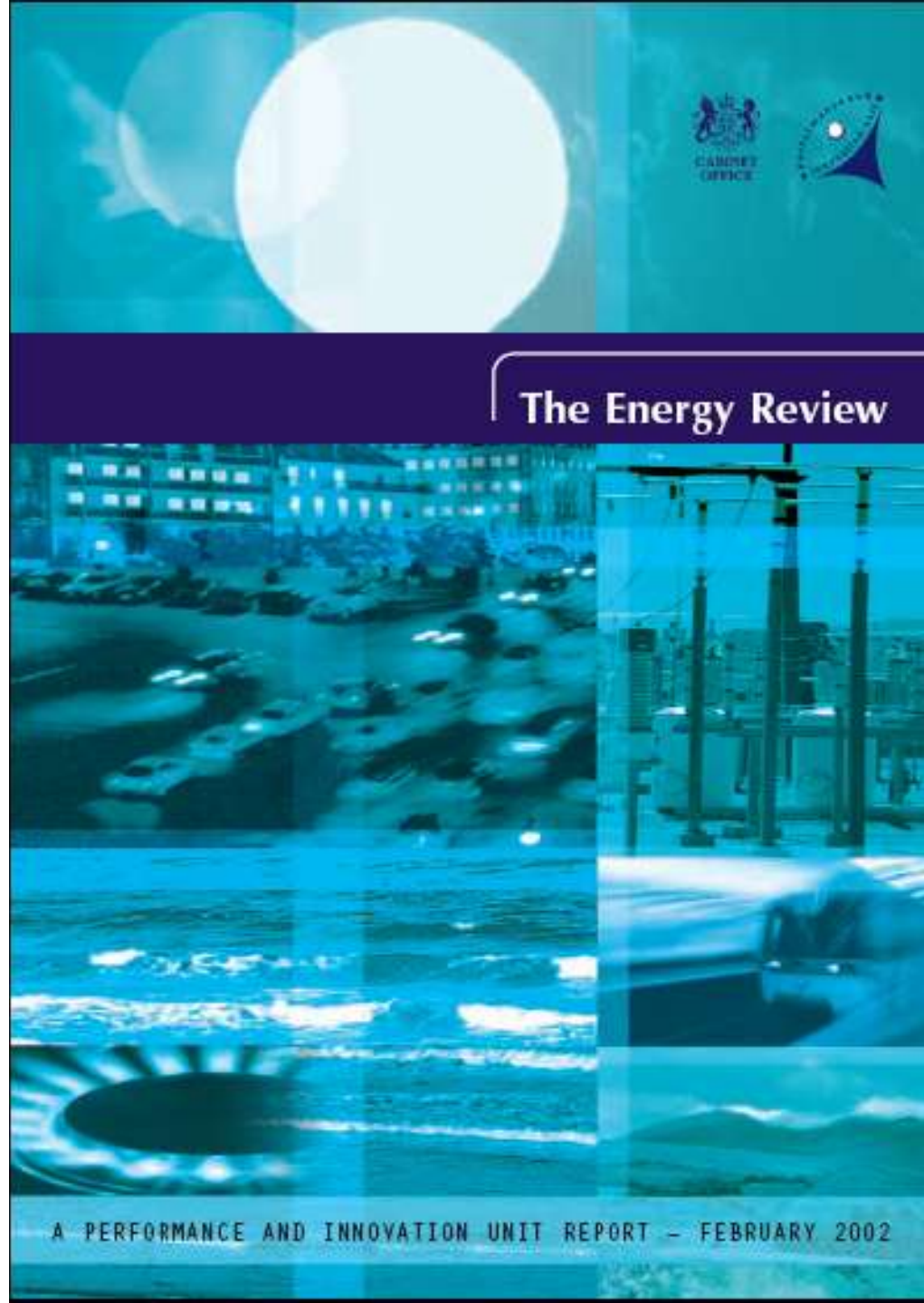
Today's agenda

- Why we are world leaders
- The policy context
- The policy objectives
- The policy mechanisms
- The potential for renewables

Energy Review 2002

... The UK will be increasingly dependent on imported oil and gas.

... and is likely to face demanding greenhouse gas reduction targets



Energy White Paper 2003

*... to put ourselves on a path
to 60% CO2 reductions
by 2050*



Energy Review Consultation

*... by 2020 we are likely to
be importing three
quarters of our primary
energy*

Our Energy Challenge

Securing clean,
affordable energy for
the long-term



Energy Review 2006

*... we now face two
immense challenges as a
country – energy security
and climate change.*

The Energy Challenge



Stern Review 2006

*Stabilisation is
essential
and affordable*

Stern Review on the economics of climate change



HM TREASURY

What are the key policy messages?

Climate risk

- > ‘Business as usual’ emissions will cause irreversible climate change
- > GHG levels could treble by 2100
- > 50% chance of >5 C warming

“Changes will be radical and unknown”

Economic threat & opportunity

- > Potential impact on economy larger than previously suggested
- > 5-6 C warming could cut 10% GDP
- > Stabilising GHG concentrations can be compatible with continued prosperity

“Uncertainty is an argument for more, not less, demanding goals”

Stabilisation is essential and affordable

- > Global emissions need to be >25% below current levels in 2050 for <550ppm CO₂eq
- > 75% less emissions per unit GDP in 2050
- > This will cost 1% of GDP p.a.
- > Doing nothing could be equivalent to a 20% reduction in consumption

Say that again

- > *Doing nothing costs 5 to 20%*
- > *Solving the problem costs 1%*

Solutions

- Non energy emissions – low cost options
- Clean power, heat and transport
- Technologies exist
- Carbon pricing reduces cost compared to fossil fuel

“The low carbon economy will benefit renewable energy”

Carbon price

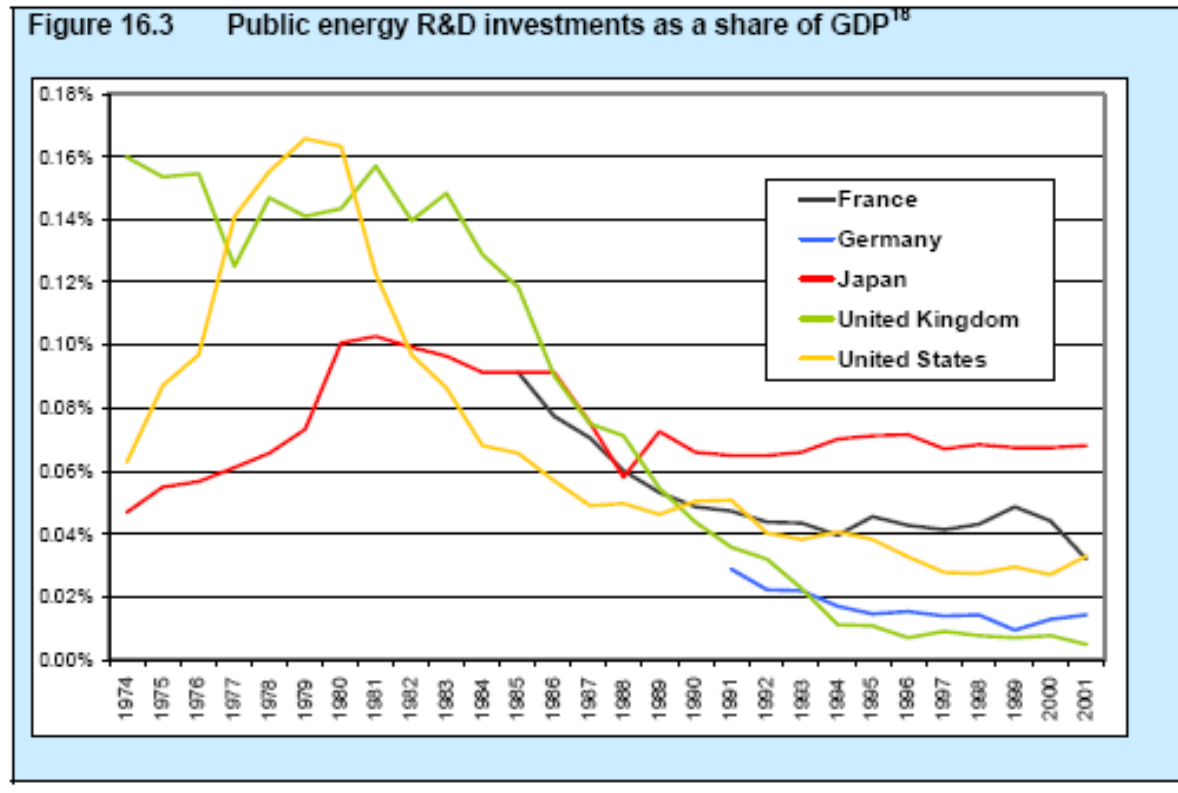
- Puts value on external costs of energy
- Tax, trading or regulation can set the price
- Paying the full social cost of energy favours low emission technologies
- Long term carbon price certainty needed

“Delay will lock in high carbon technologies”

Supportive policies for new technology needed urgently

- Support needed outside carbon pricing
- Long term certainty for investment
- Incentives need to increase:
 - ~175% in 2015; ~400% in 2025
- R&D and economies of scale will improve competitiveness

Energy research & development



Renewable energy

- > Rapid growth of renewables industry
 - > 25% growth in 2005 alone
- > Energy security concerns provide additional impetus for support
- > Renewables available now - avoid locking in non-sustainable technologies

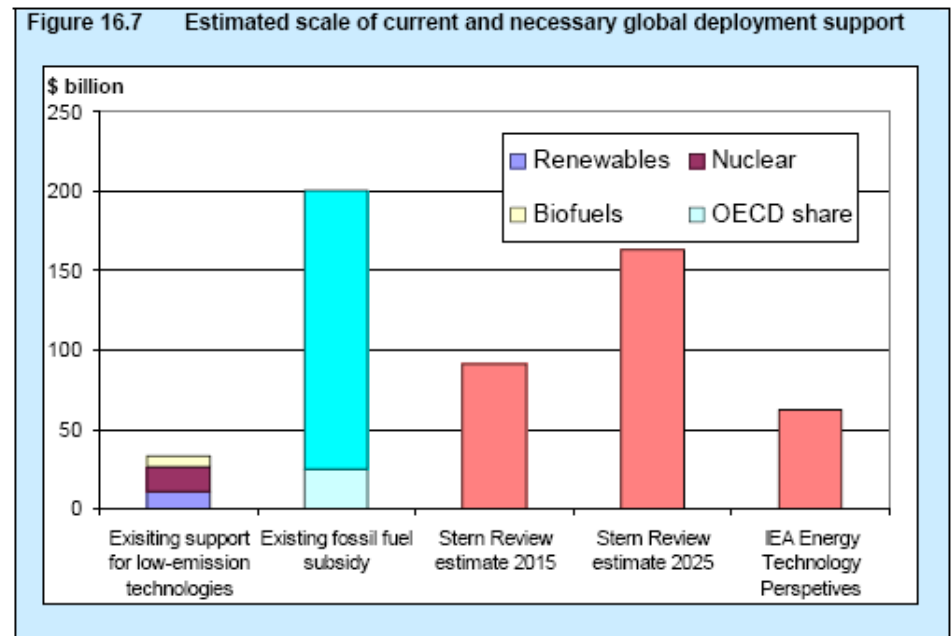
Supporting renewables

- > Long term price and credibility of support schemes are crucial
- > Feed in tariffs have proven to promote larger deployment at lower cost
- > ‘Technology blind’ support should be supplemented with targeted measures

Increase deployment incentives

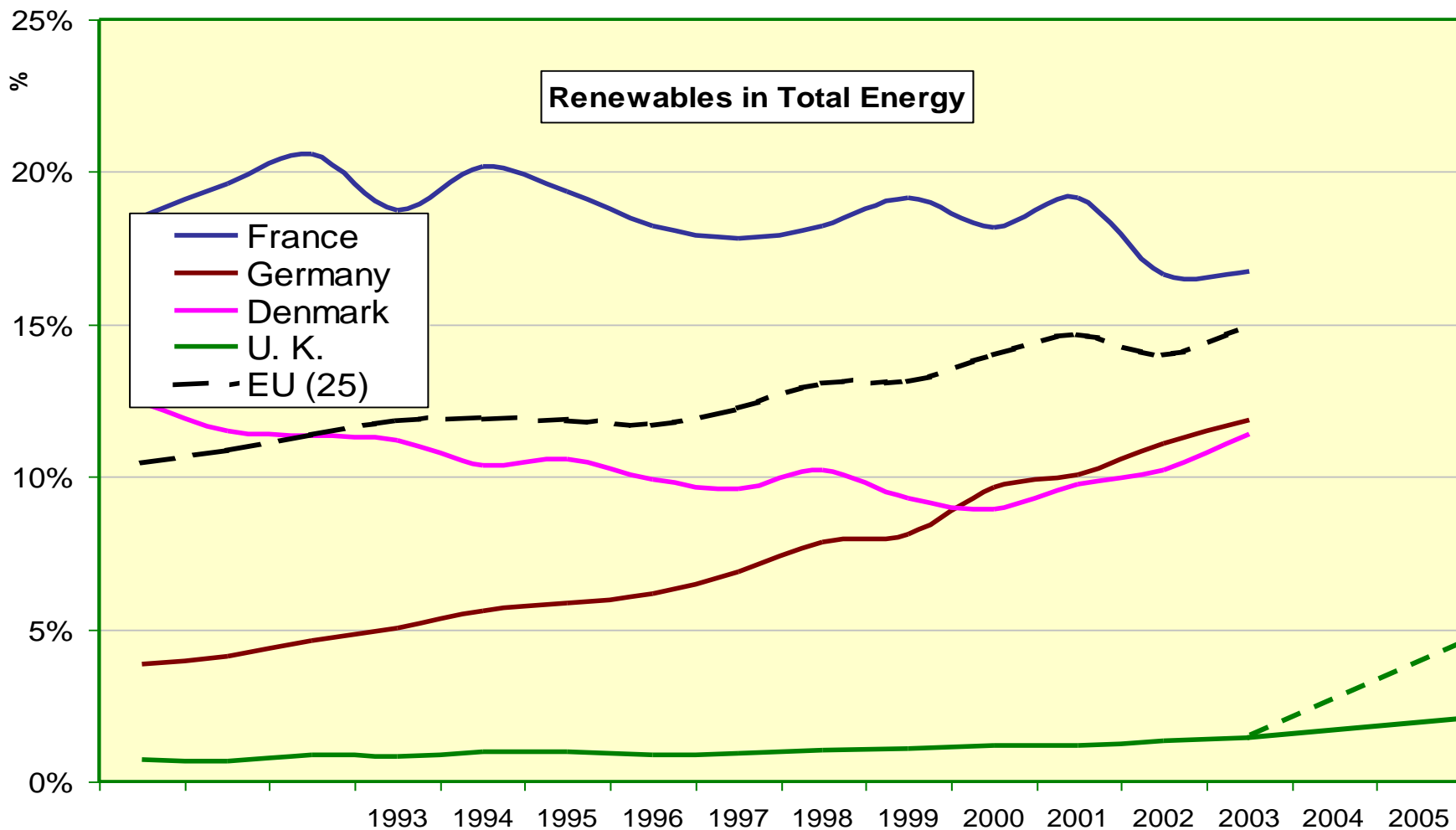
- > Worldwide incentives now \$34bn p.a.
- > This should increase by:

2x to 5x



So how are we doing?

“... encouraging renewable energy”



Targets and mechanisms

> Renewable electricity

> 2010 target 10%

> 2015 quota 15%

> 2020 'aspiration' 20%

RO

> Renewable heat

> No target

None

> Renewable transport fuels

> 2010 quota 5% by volume

RTFO

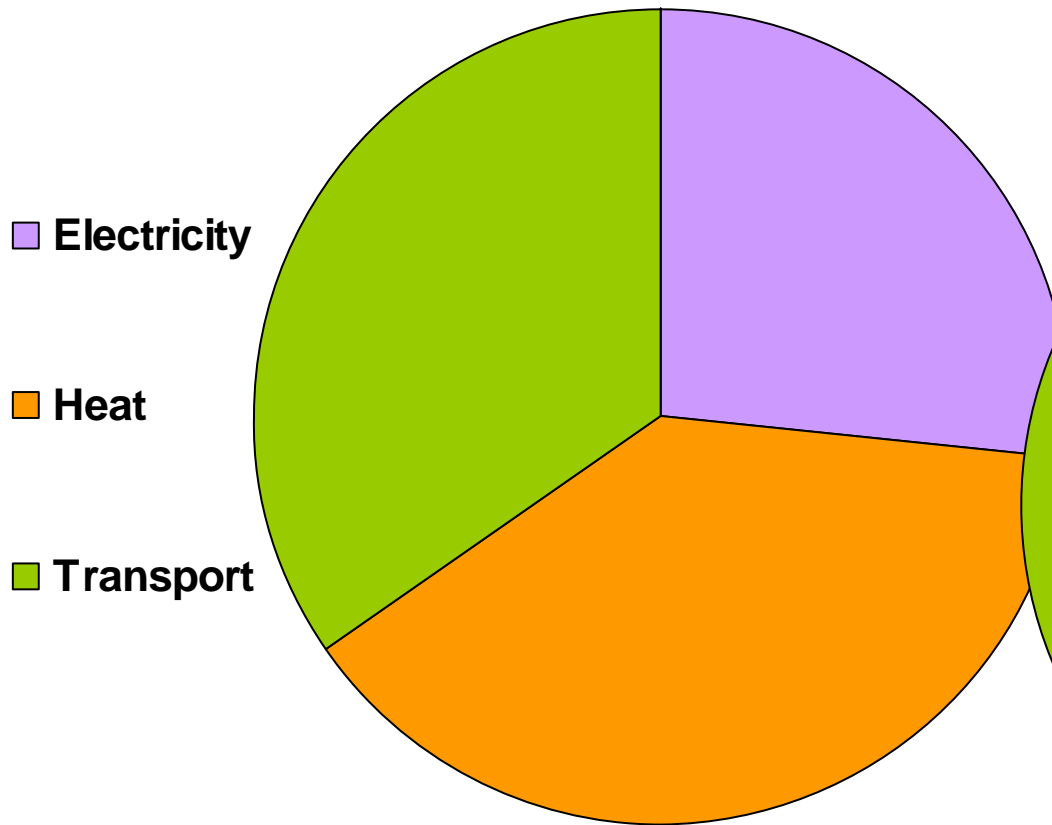
> Micro-renewables

> No target

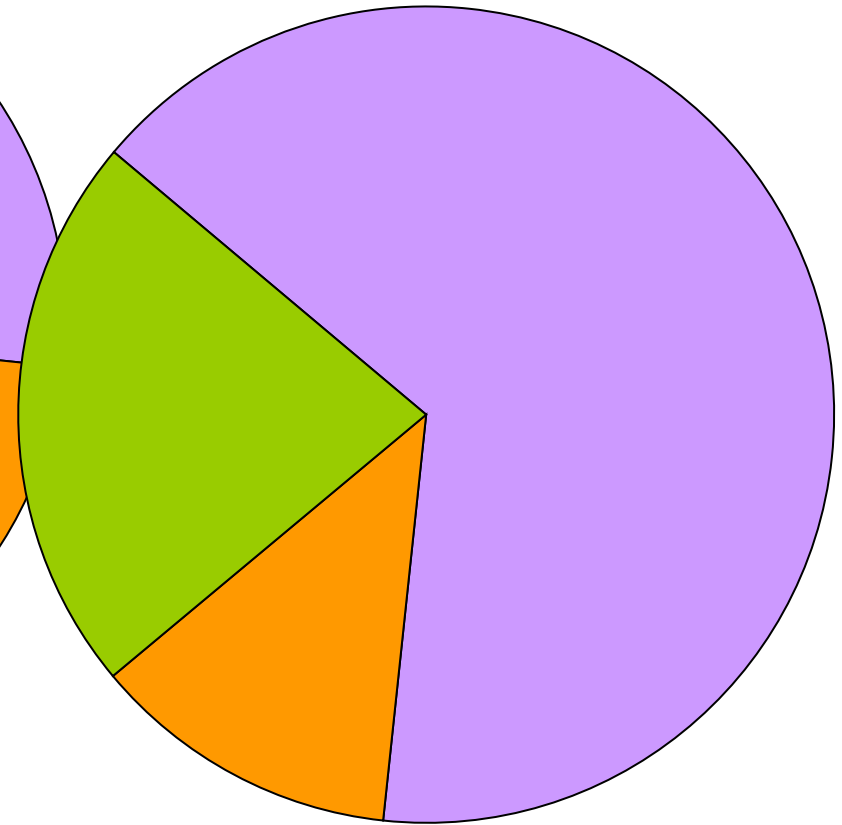
LCBP

“consider a range of options ...

The UK's energy mix



‘Coverage’ in the Energy Review



Sustainable Energy 'Manifesto'

All Party Group on Intelligent Energy
All Party Parliamentary Climate Change Group
Association for the Conservation of Energy
Association of UK Energy Agencies
British Hydropower Association
British Wind Energy Association
Combined Heat and Power Association
Country Land and Business Association
Energy Saving Trust
Energywatch
Environmental Industries Commission
Friends of the Earth England, Wales and N. Ireland
Friends of the Earth Scotland
Green Alliance
Greenpeace
Institute for Public Policy Research
Institution of Mechanical Engineers
Institution of Engineering & Technology
Micropower Council
National Energy Action
National Energy Foundation
National Farmers Union
New Economics Foundation
Parliamentary Renewable and Sustainable Energy Group
Renewable Energy Association
Royal Society for the Protection of Birds
Scottish Parliament Renewable Energy and Energy Efficiency Group
Scottish Renewables Forum
SERA Labour Environment Campaign
Solar Trade Association
Sustainable Energy Partnership
Town & Country Planning Association
UK Business Council for Sustainable Energy
W W F Scotland
W W F - UK

Sustainable Energy Priorities

- > Stick with the vision
 - > 2003 Energy White Paper objectives
 - > Firm up the targets...
 - > ... and take them seriously
 - > Quantified (annual) milestones

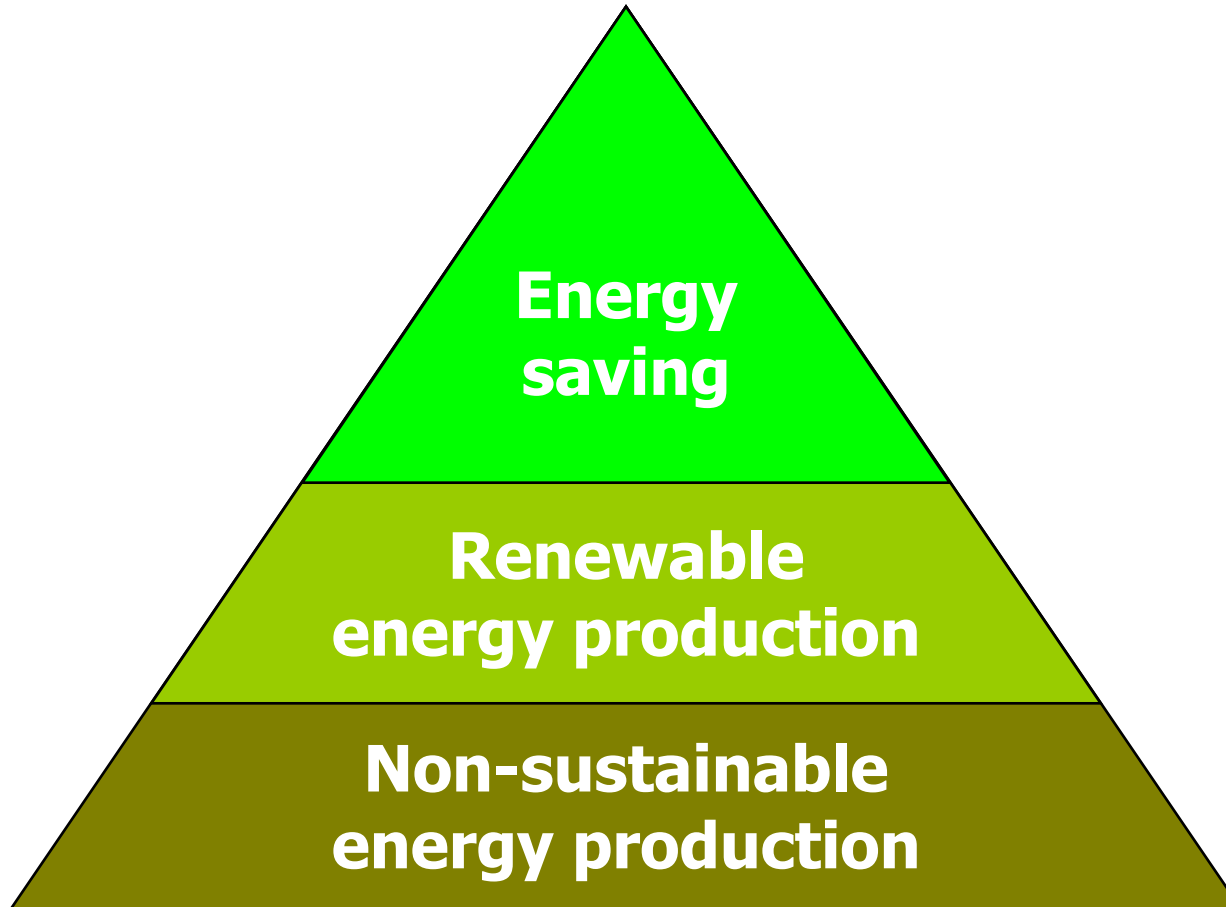
Sustainable Energy Priorities

- > Long term policy framework
- > Business needs:
 - > Clear signals
 - > Consistency and stability
 - > Minimum 'political risk'

Sustainable Energy Priorities

- > Use all suitable options (no silver bullets)
- > but prioritise them
 - > Energy conservation
 - > Sustainable energy production
 - > Fossil & nuclear
- > Minimise any 'energy gap' **before** filling it

The Energy Hierarchy



Sustainable Energy Priorities

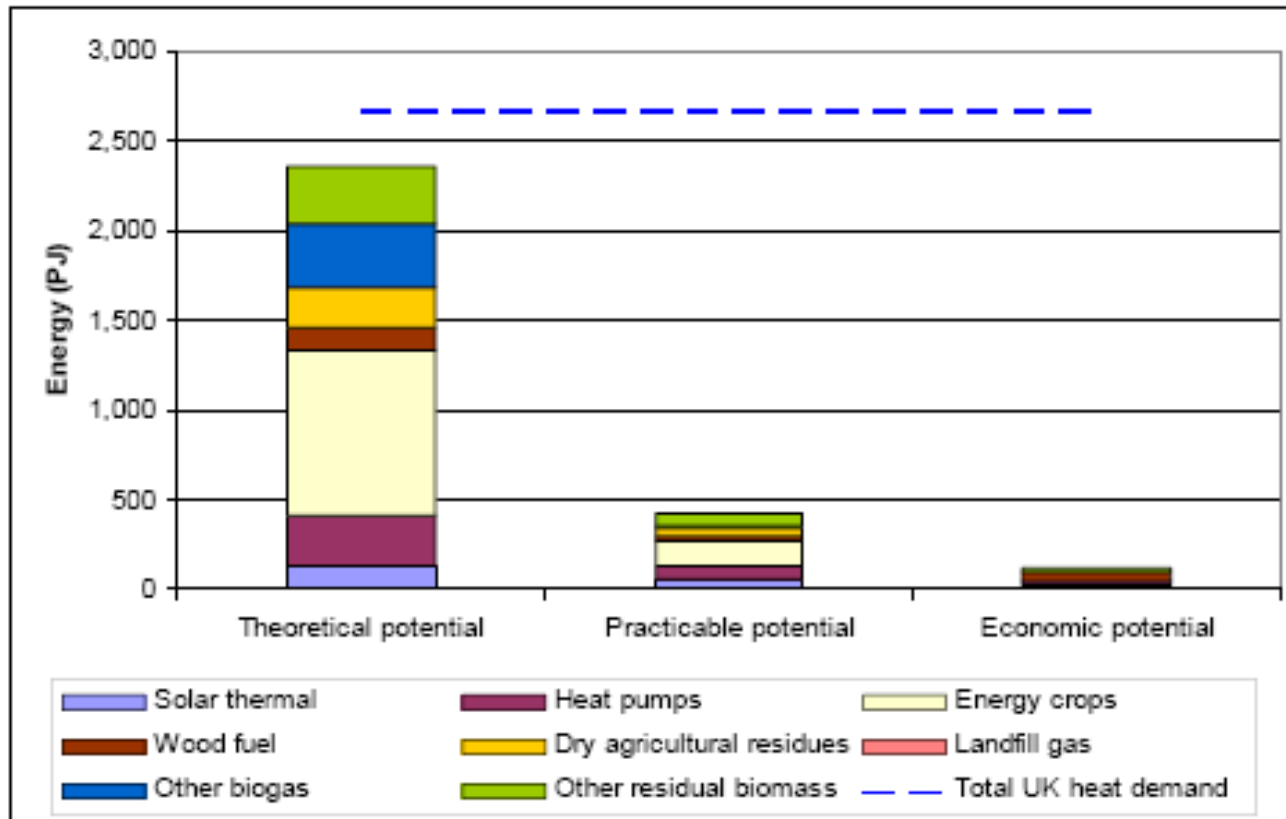
- > Use all suitable options
 - > Heat
 - > Fuel
 - > Not only electricity

Sustainable Energy Priorities

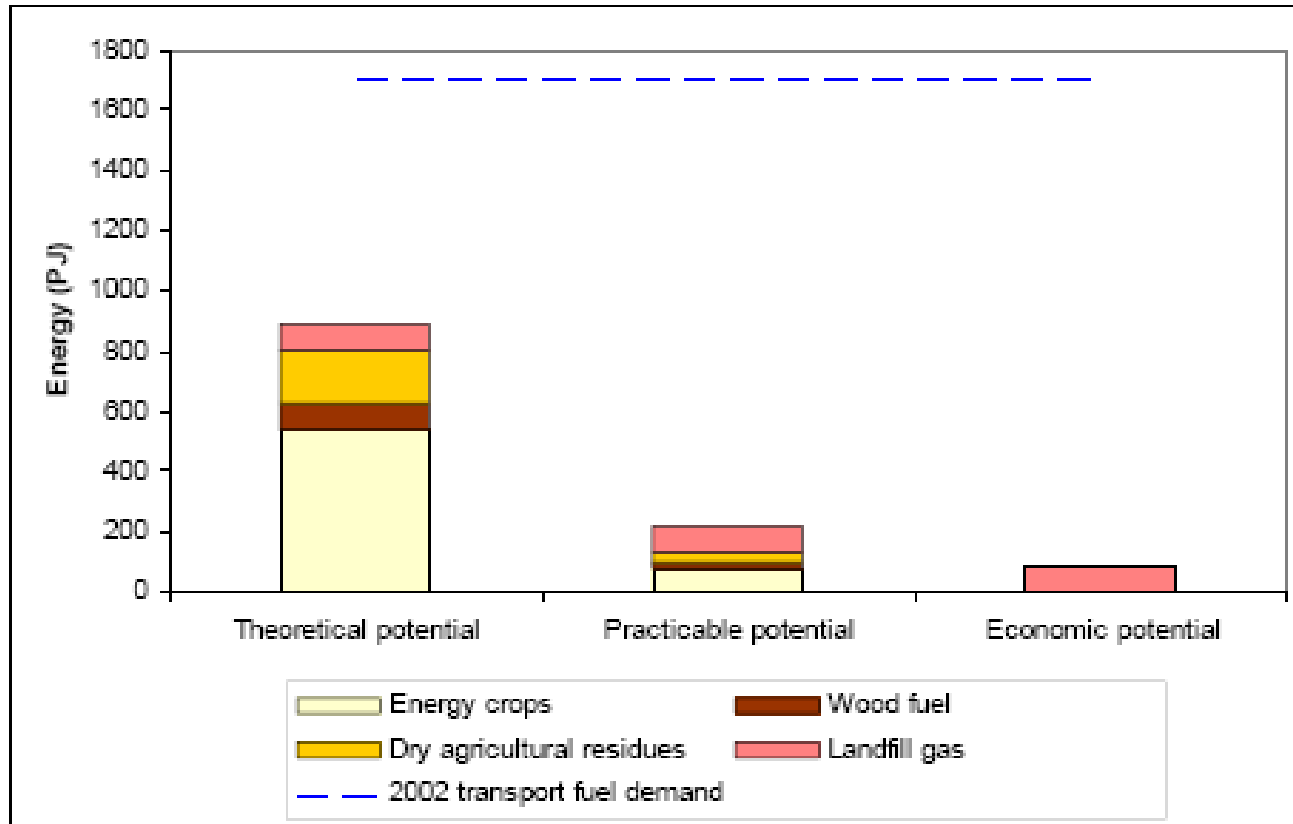
- > Structure Government and Agencies
 - > Single department or agency
 - > Duties of the regulator

Our estimate of the potential

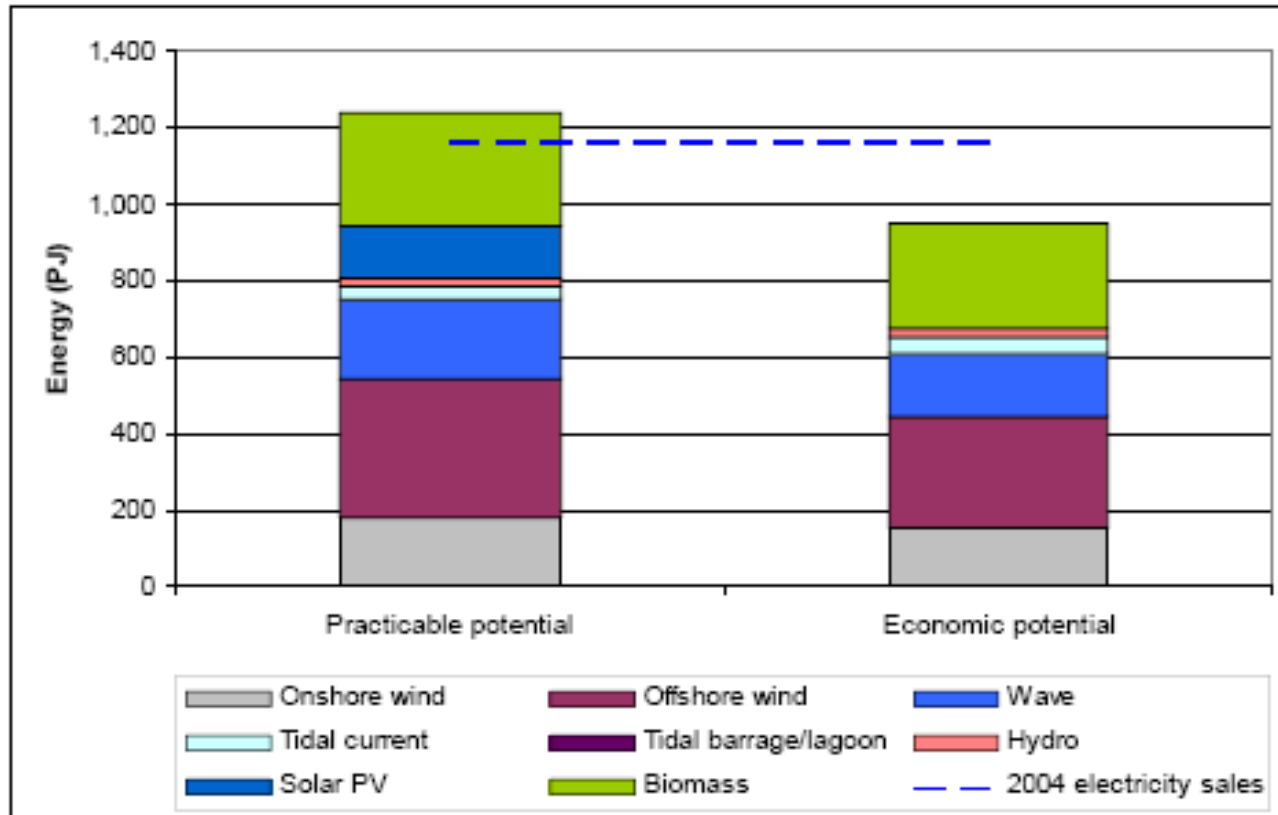
Potential for renewable heat



Potential for renewable fuels



Potential for renewable Power



Potential for renewable power



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