

Renewable Energy – the big picture

Politics, economics, technologies



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, marine, hydro, heat pumps

RENEWABLE ENERGY ASSOCIATION



SocEnv Renewable Energy Seminar; February 2007



Today's agenda

- > The policy context
- > Policy development
- > The fundamentals
- > Realising the potential

The policy context

Stern Review 2006



Stern Review on the economics of climate change

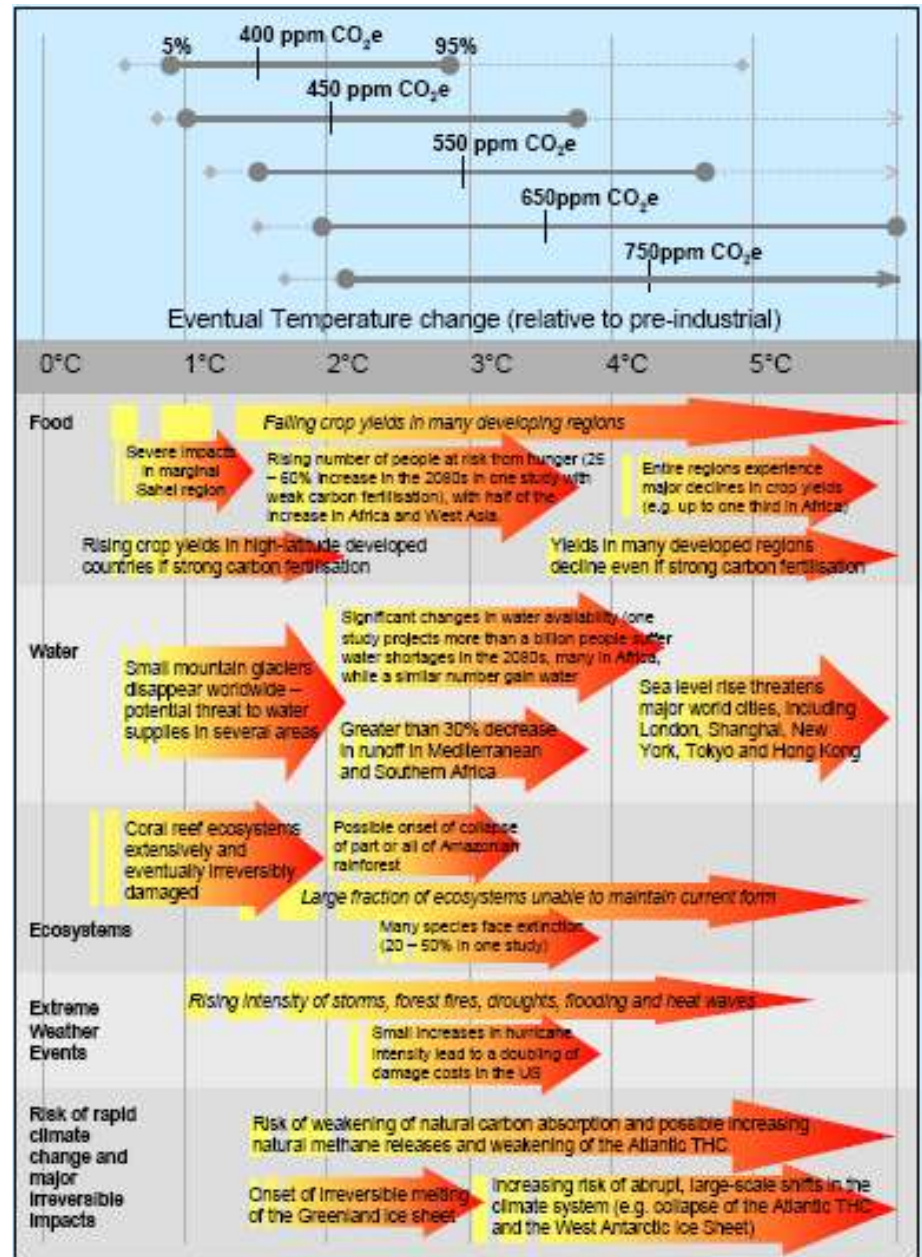


HM TREASURY

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

Give me those figures again ...

Doing nothing costs 5 to 20%

Solving the problem costs 1%

Solutions

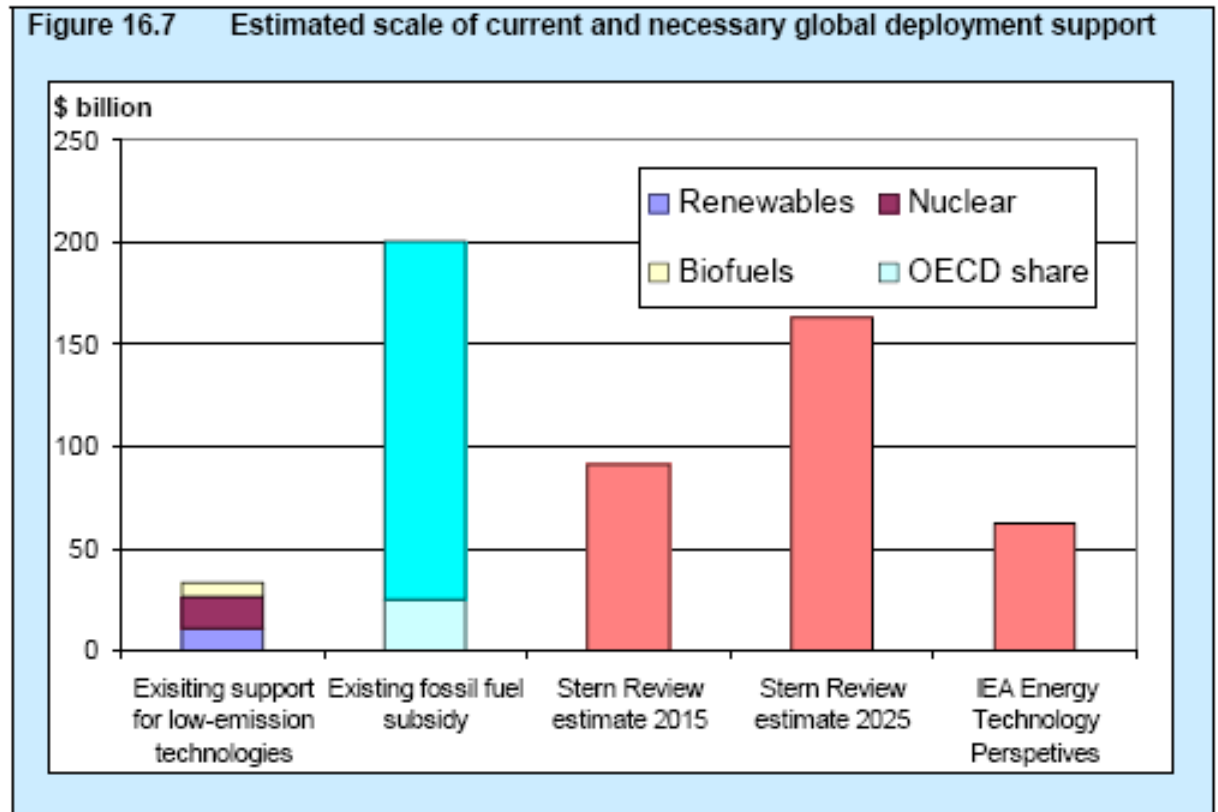
- > Non energy emissions – low cost options
- > Clean power, heat and transport
- > Technology policy
 - > Most technologies we need already exist
- > Carbon pricing
 - > Reduces cost compared to fossil fuel
- > Removing barriers to behavioural change

“The low carbon economy will benefit renewable energy”

Increase deployment incentives

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

2x
to
5x

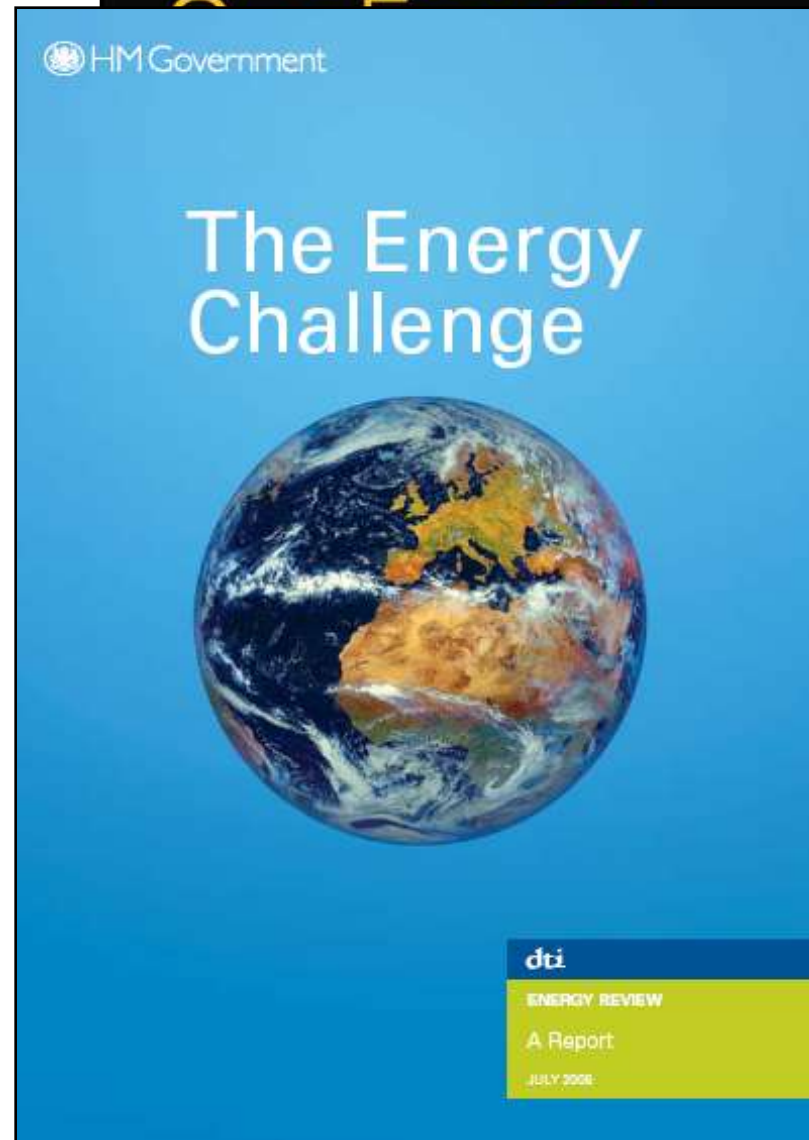


Policy development

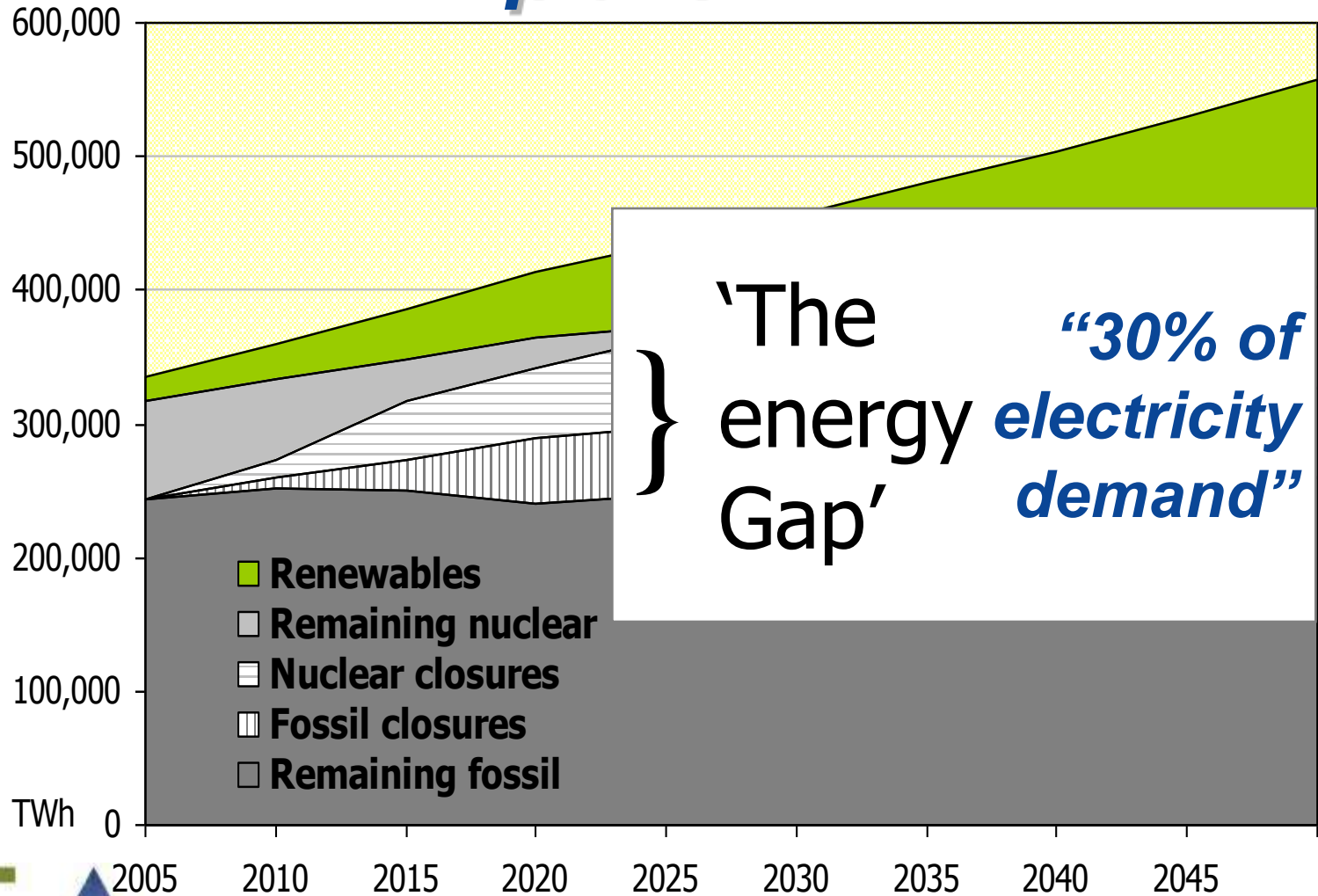
... we now face two immense challenges as a country

– energy security and climate change

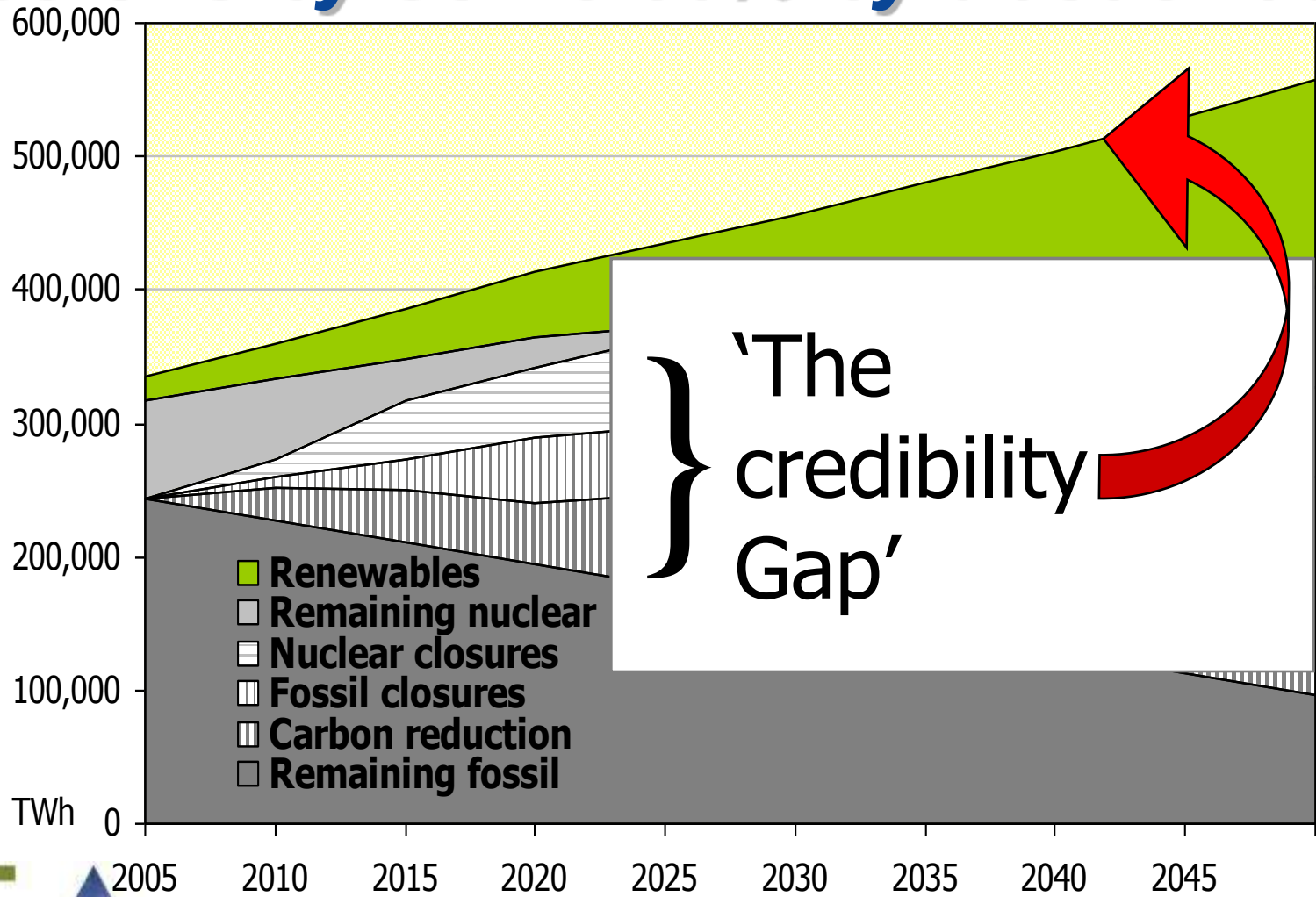
Energy Review 2006



“... to replace retiring coal and nuclear plant”

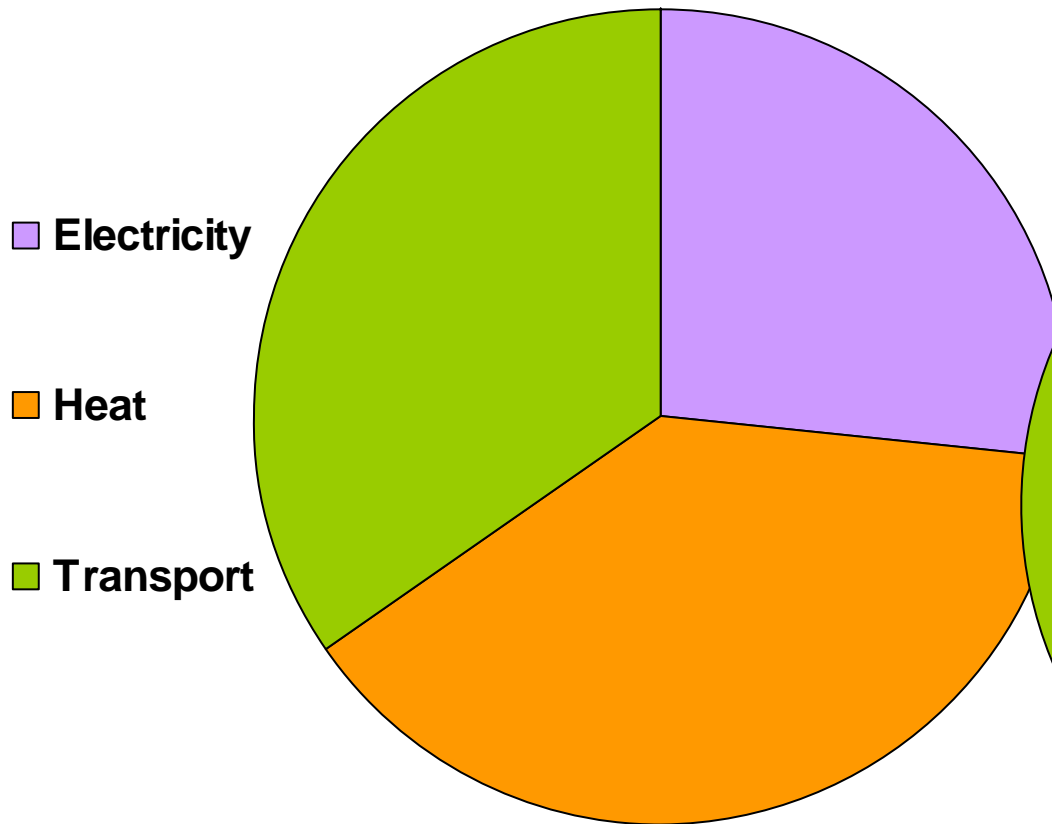


“... on a path to reduce carbon dioxide emissions by some 60% by about 2050”

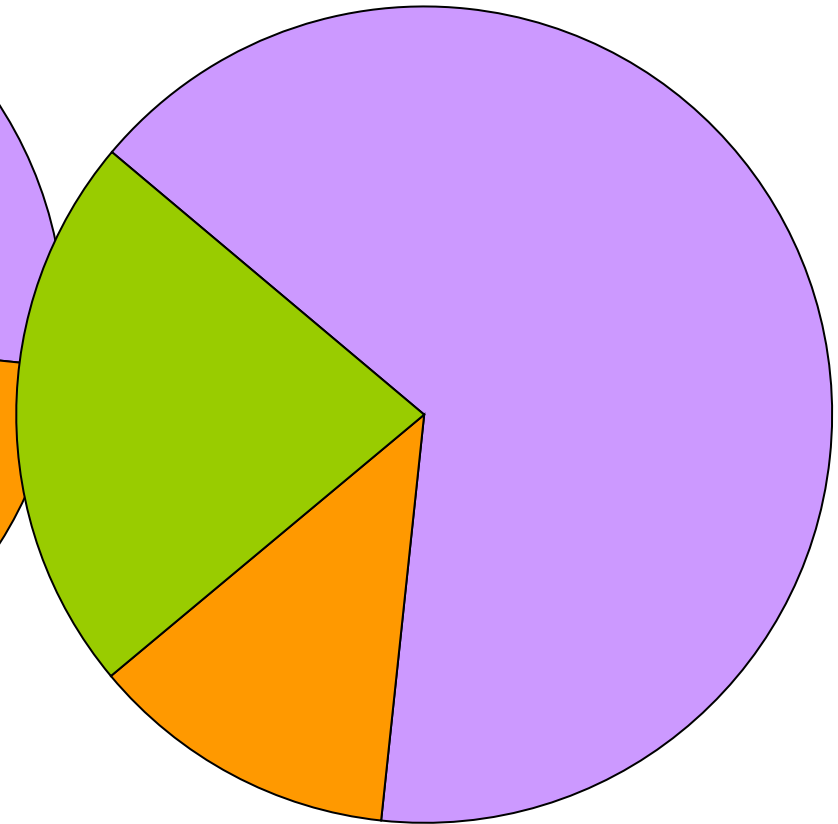


“consider a range of options ...

The UK's energy mix



‘Coverage’ in the Energy Review



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

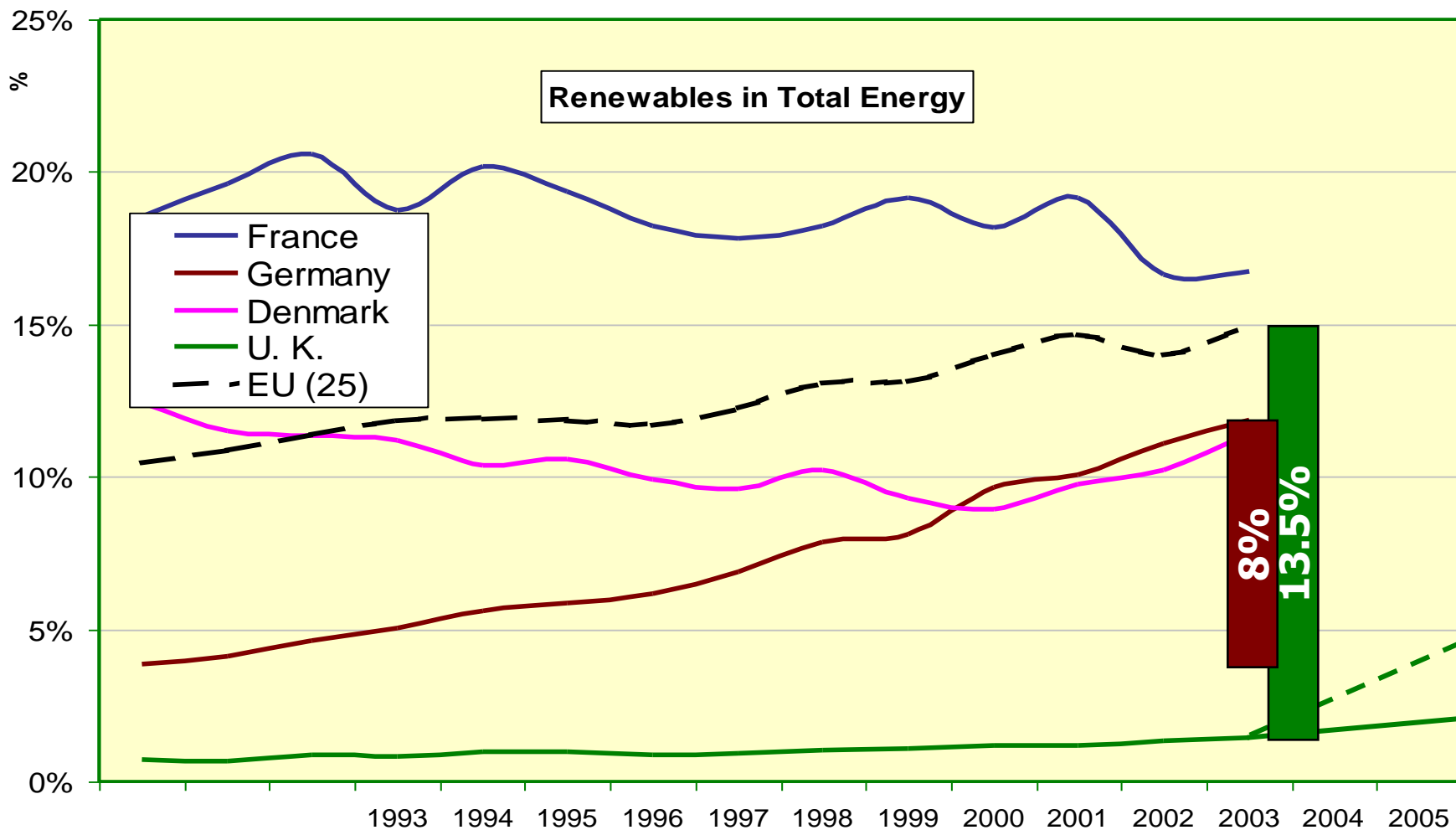
RTFO

> Micro-renewables

- > No target

LCBP

“... encouraging renewable energy”



The policy fundamentals

Sustainable Energy 'Manifesto' 2006



A Sustainable Energy Policy

We believe that the priorities of the Government's Energy Review should be to:

- Uphold the vision, objectives and targets for sustainability, security, prosperity and fairness set out in the 2003 Energy White Paper. The government should re-affirm its commitment to all related statutory and non-statutory targets and introduce supporting annual milestones.
- Develop the long-term policy framework necessary to provide enduring investment signals for businesses of all sizes to deliver the major changes needed to our energy system. This includes a long-term carbon market beyond existing emission trading schemes.
- Minimise the 'energy gap' before trying to fill it. The first priority is to reduce demand; followed by encouraging efficient energy production and usage; then boosting renewables. Incentives and support measures should reflect these priorities.
- Focus on sustainable heat and transport as well as electricity. Energy is an inter-related system and policy should pay equal attention to all parts of the mix.
- Structure Government and agencies to meet the objectives by identifying a single body responsible for achievement of sustainable energy targets. The primary duties of the regulator should reflect all national energy policy objectives.

This strategic framework should lead to the following policy actions:

- Reduced consumption through energy saving. Conservation is the most cost-efficient solution to energy security, fuel poverty and climate change. *Government should implement a package of measures that deliver an absolute reduction in energy consumption in industry, transport and the home.*
- Investment in decentralised energy systems. Integrated community systems and micro-generation deliver clean heat and electricity at the point of use, displacing inefficient production in conventional stations, and increase public awareness catalysing behaviour change. *Government should ensure a fair value for distributed energy and provide regulatory and fiscal incentives for consumers, installers and network operators. It should strengthen regulations to require all new buildings to be carbon neutral no later than 2015, and use standards to eliminate the most inefficient products from the market.*
- Accelerated renewable energy capacity growth. Renewables produce low carbon energy without fossil fuels and stimulate agriculture and the economy. *The Government should aim to put the UK in the top five EU members for renewable energy contribution by 2025. Coherent transitional support measures are needed to build scale and reduce costs.*
- Champion sustainable energy at home and abroad. The Government should press for international policies to encourage energy efficiency, boost renewables and eliminate barriers to sustainable energy. *It must lead by example in its own procurement policies and infrastructure developments. Government should invest in a sustained programme of education to achieve cultural change in energy use.*

Individually and together these measures will enhance sustainability, boost UK industry and reduce fuel poverty. They can make a major contribution to energy security by reducing import dependence, maximising local resources and increasing the effectiveness of valuable fuels.

These views are shared by the organisations listed below.

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 and W W F - UK

Sustainable Energy 'Manifesto'

> Stick with the vision

> 2003 Energy White Paper objectives

> Firm up the targets...

> ... and take them seriously

> Quantified (annual) milestones

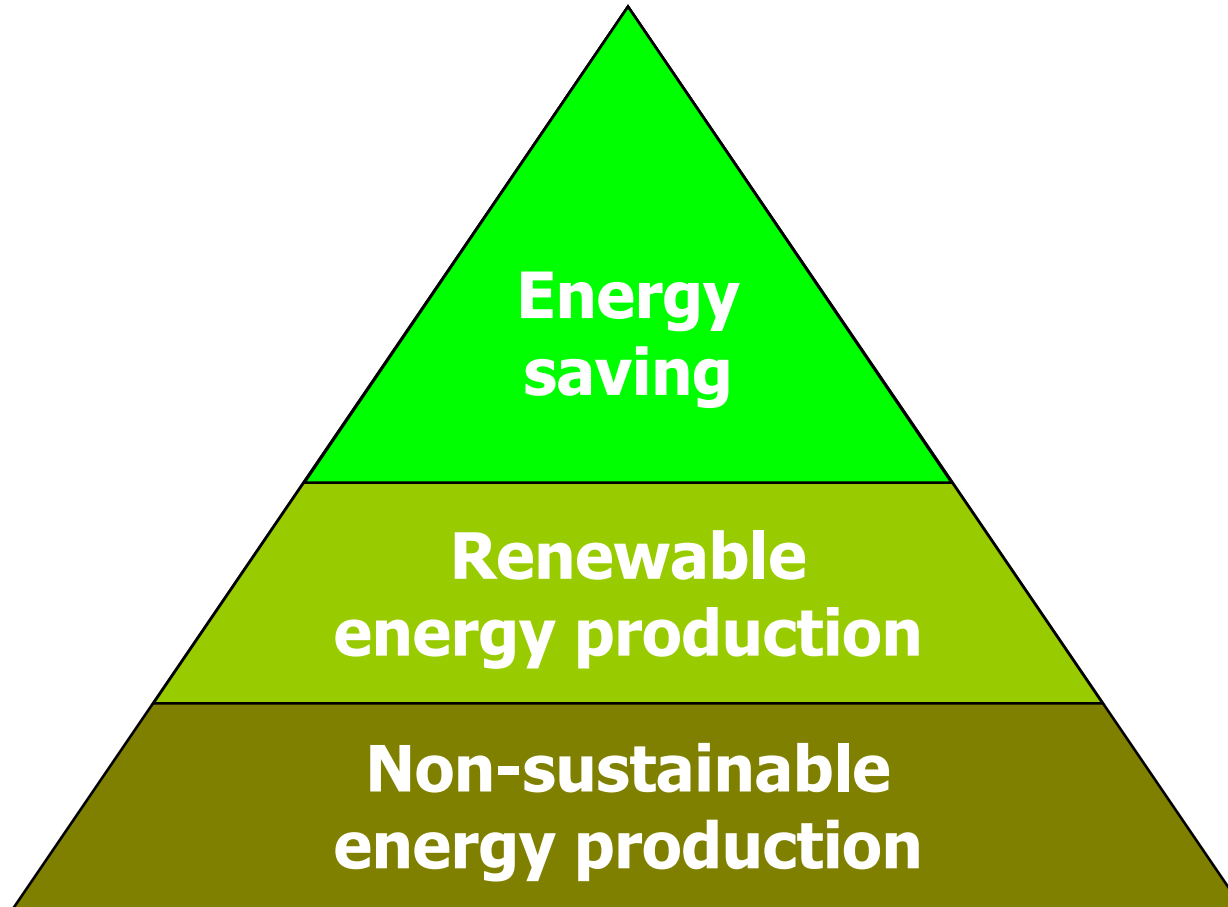
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- Combined Heat and Power Association
- Country Land and Business Association
- Energy Saving Trust
- Energywatch
- Environmental Industries Commission
- Friends of the Earth - England, Wales and Northern Ireland
- Friends of the Earth Scotland
- Green 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
- National Council for Energy Conservation
- 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
- SEPA Labour Environment Campaign
- Solar Trade Association
- Sustainable Energy Partnership
- Town & Country Planning Association
- UK Business Council for Sustainable Energy
- W W F Scotland and W W F - UK

Sustainable Energy 'Manifesto' Priorities

- > Use all suitable options
- > Heat, fuels, CHP as well as electricity
- > and prioritise them
- > Energy conservation
- > Sustainable energy production
- > Fossil & nuclear
- > Minimise any energy gap before filling it



The Energy Hierarchy



Sustainable Energy 'Manifesto' Priorities

> Long term policies giving business:

> Clear signals

> Consistency and stability

> Minimum 'political risk'

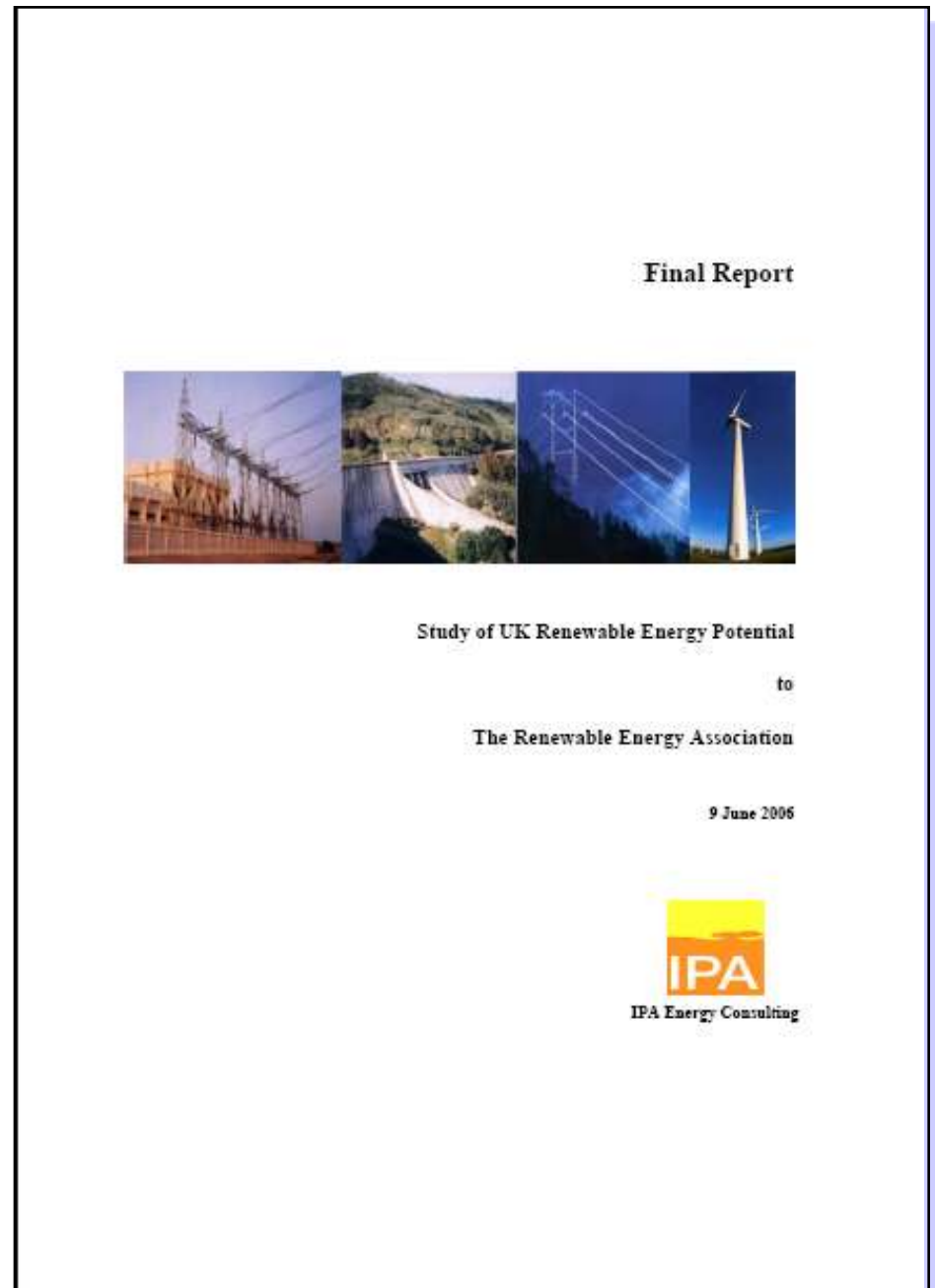
> Structure Government and Agencies

> Single department or agency

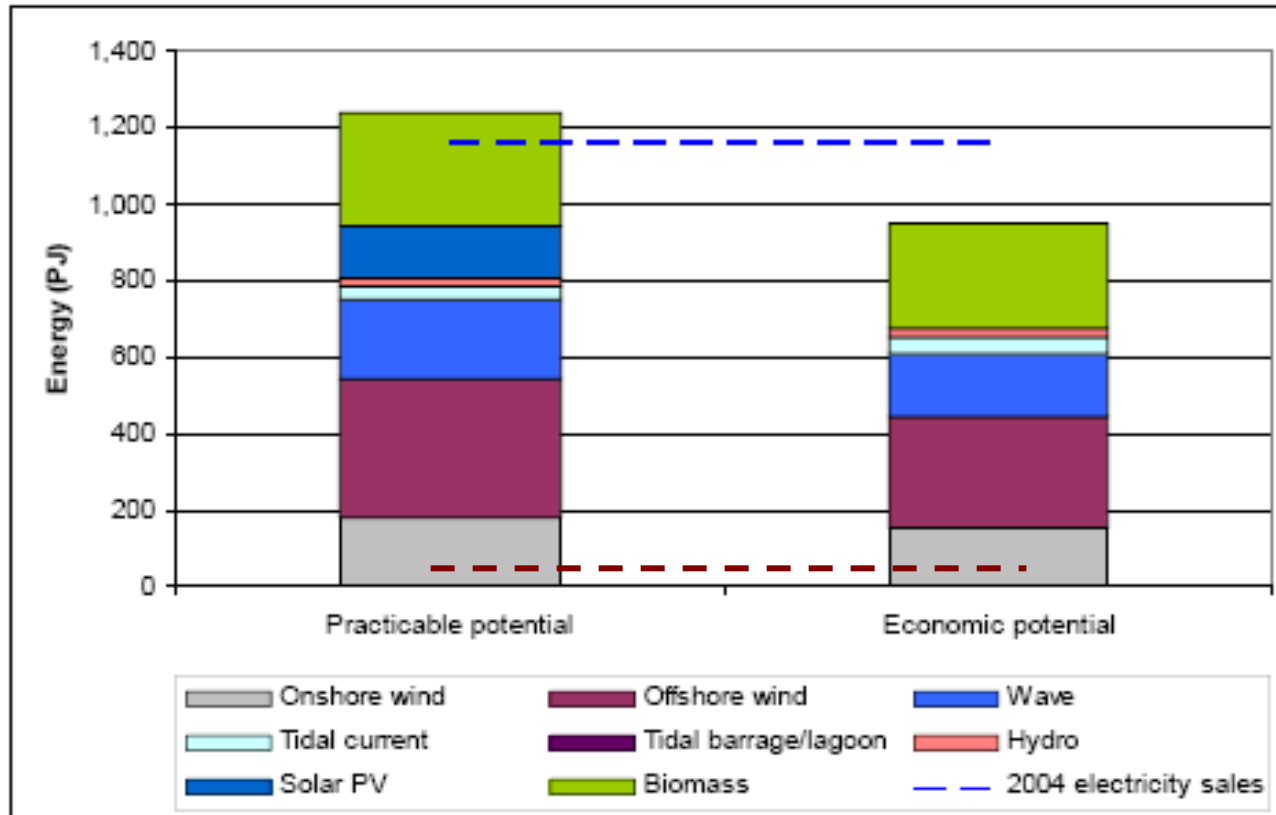
> Duties of the regulator

Renewable energy potential

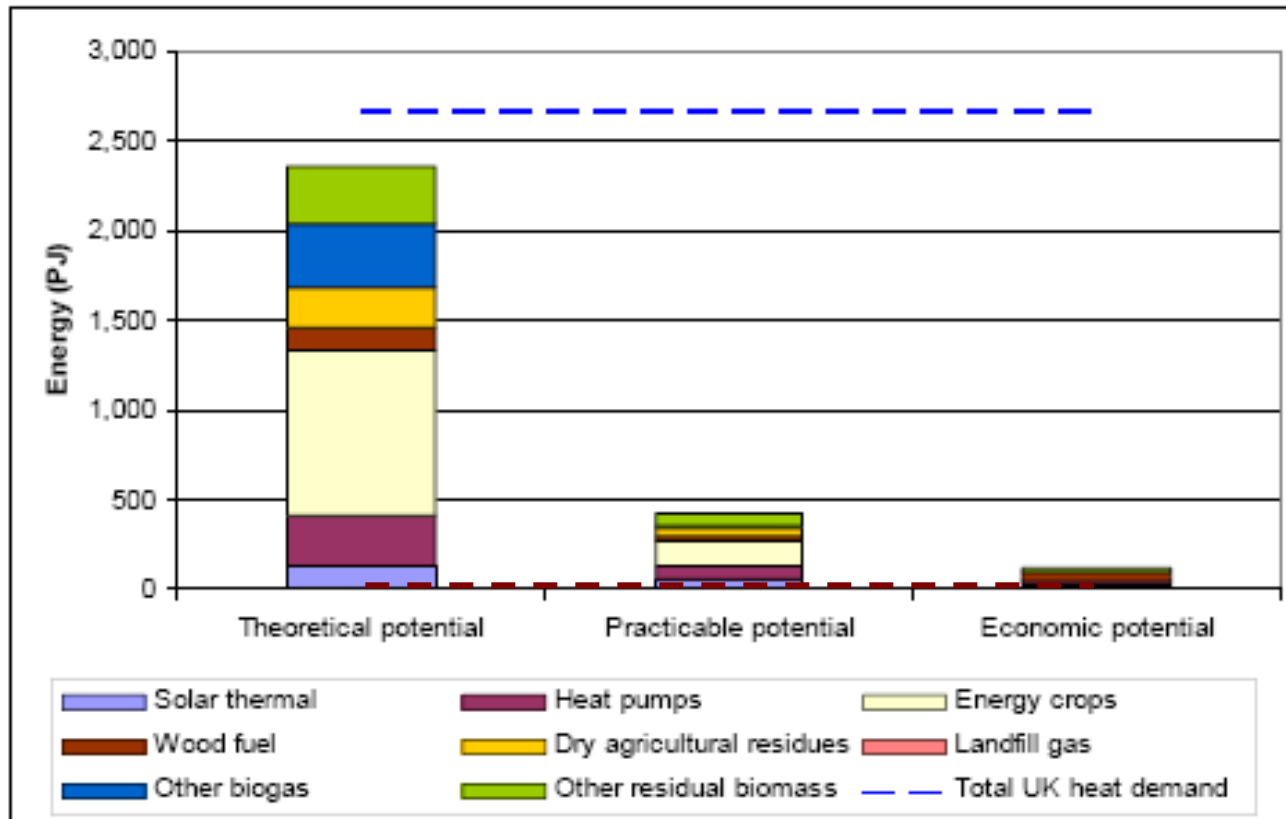
IPA study 2006



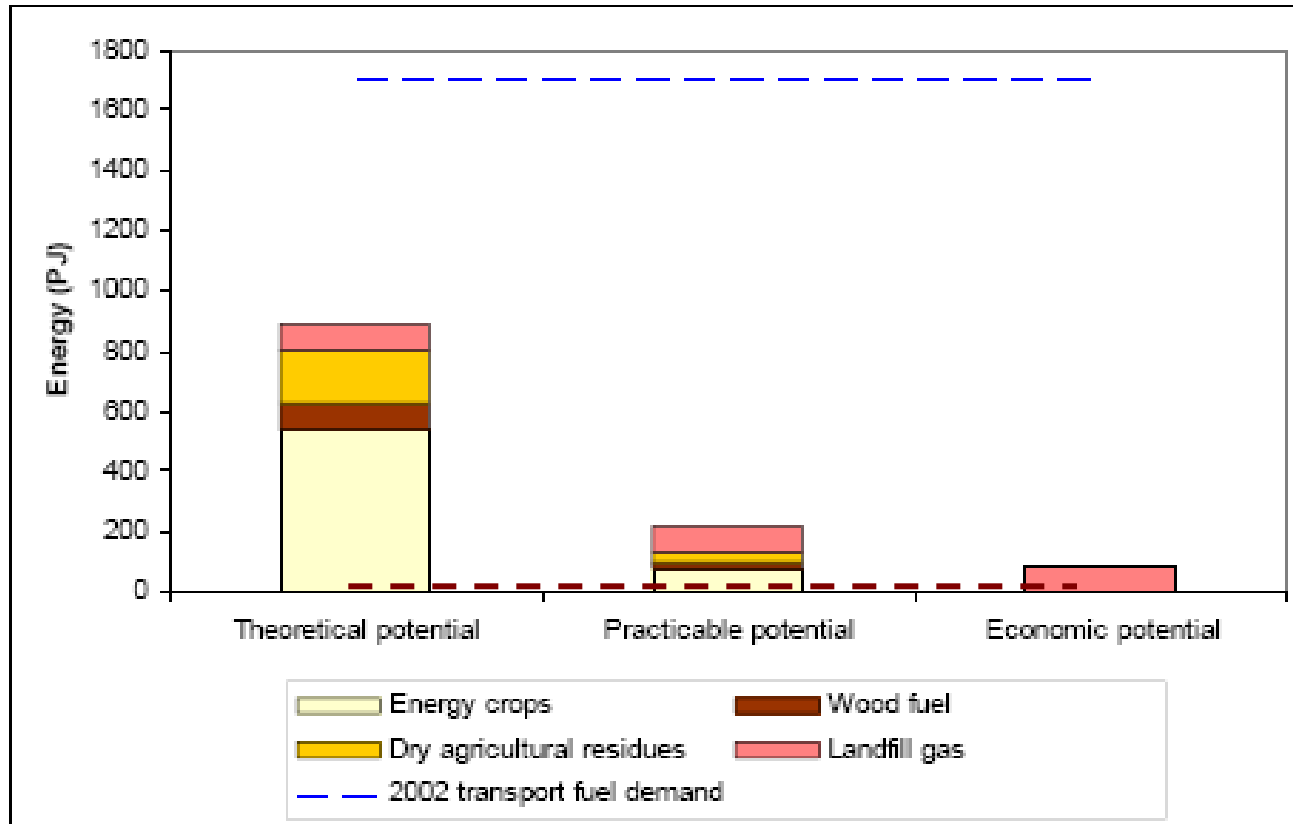
Potential for renewable Power



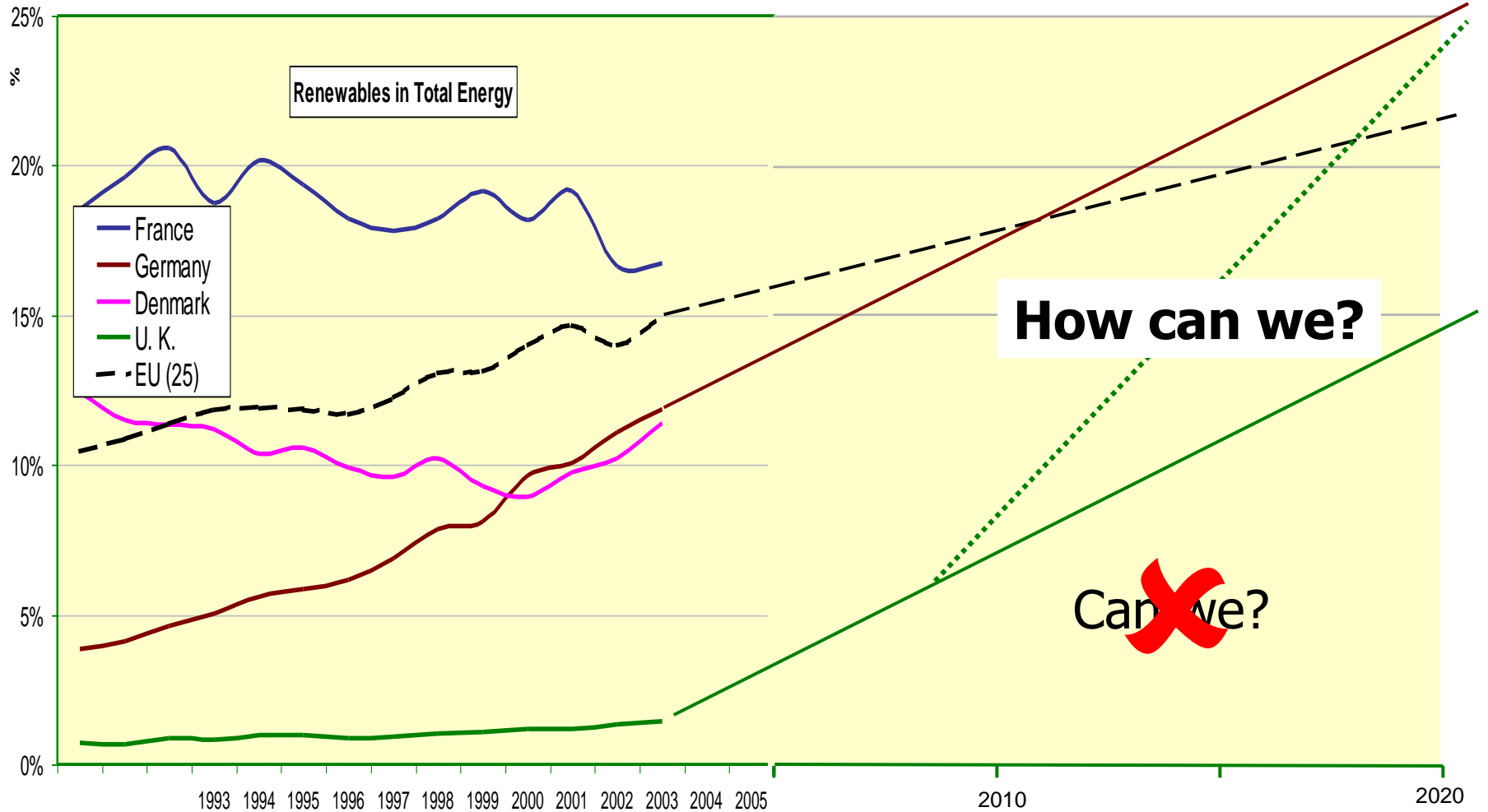
Potential for renewable heat



Potential for renewable fuels



“... a realistic player in 2020?”



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June 21st 2007

REA Conference, Natural History Museum
Awards Dinner, the Savoy

www.r-e-a.net



SocEnv Renewable Energy Seminar; February 2007

