

December 2013

# DECC's pathway calculator and radical emissions



# DECC's pathway calculator

- Why it's great
  - How it could change
- What else needs to change

# DECC's pathway calculator

- Comprehensive, clear, impressive technical content
- Lots of effort communicating it to different audiences
  - Very transparent

# DECC's pathway calculator

- But, some technical changes are needed; and
- The 80% 2050 target it is based on is not appropriate for a fair UK contribution to preventing dangerous climate change

What's wrong with the 80% 2050 target?

# What's wrong with the 80% 2050 target?

- Too hot: 2 degrees

(100 developing countries have 1.5 degree target, Hansen argues for 1 degree)

# What's wrong with the 80% 2050 target?

- Too hot: 2 degrees
- Too risky: 50-50 odds

(50-50 is very bad odds for something you want to avoid!)



**You've got to ask yourself one question:  
Do I feel lucky? Well, do ya, punk?**



# What's wrong with the 80% 2050 target?

- Too hot
- Too risky
- Gives too much to the UK

(assumes no historical responsibility, also gives lion's share of FUTURE budget to developed countries)

# What does a fairer, less risky target look like for the UK?

- 33% chance of 2 degrees, equal shares (still ignores historical responsibility)
- 9 GtCO<sub>2</sub>e budget 2010-2049
- 80% cuts by 2030
- 7.5% a year, from now...
- ...= foot-to-the-floor

# Politics is having the wrong debate about carbon budgets

4<sup>th</sup> Carbon budget paper out today

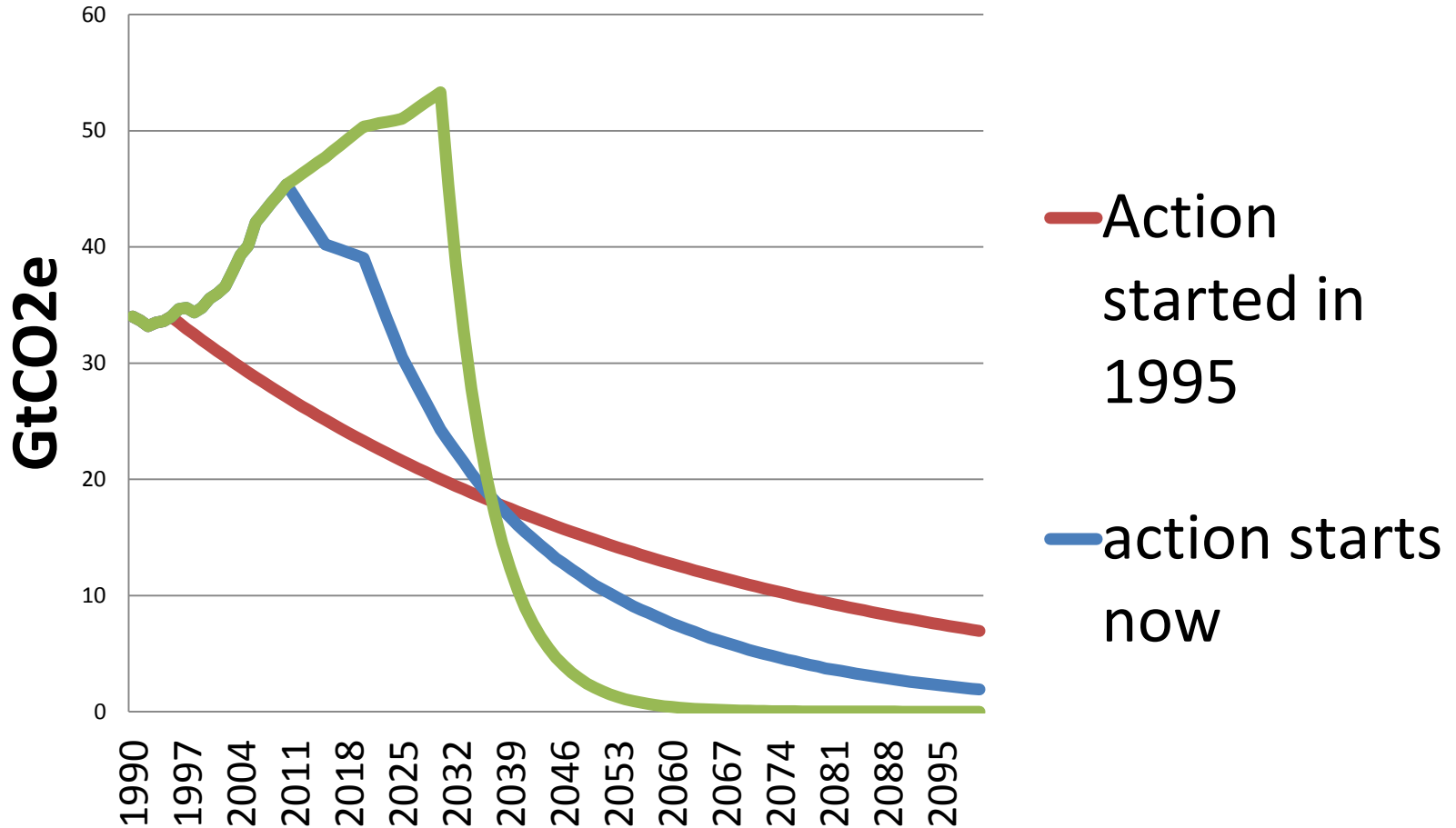
CCC have a strong case, but on defensive... trying to stop existing budgets being weakened....

Instead they need to be heavily strengthened.

# Can tougher targets be met?

- Yes. But any further delay will make it extremely difficult
- Would have been easier if we started in 1995....
- The red path would have been better, but the blue path is better than the green!

# Staying within a global carbon budget for a <33% chance of exceeding 2 degrees

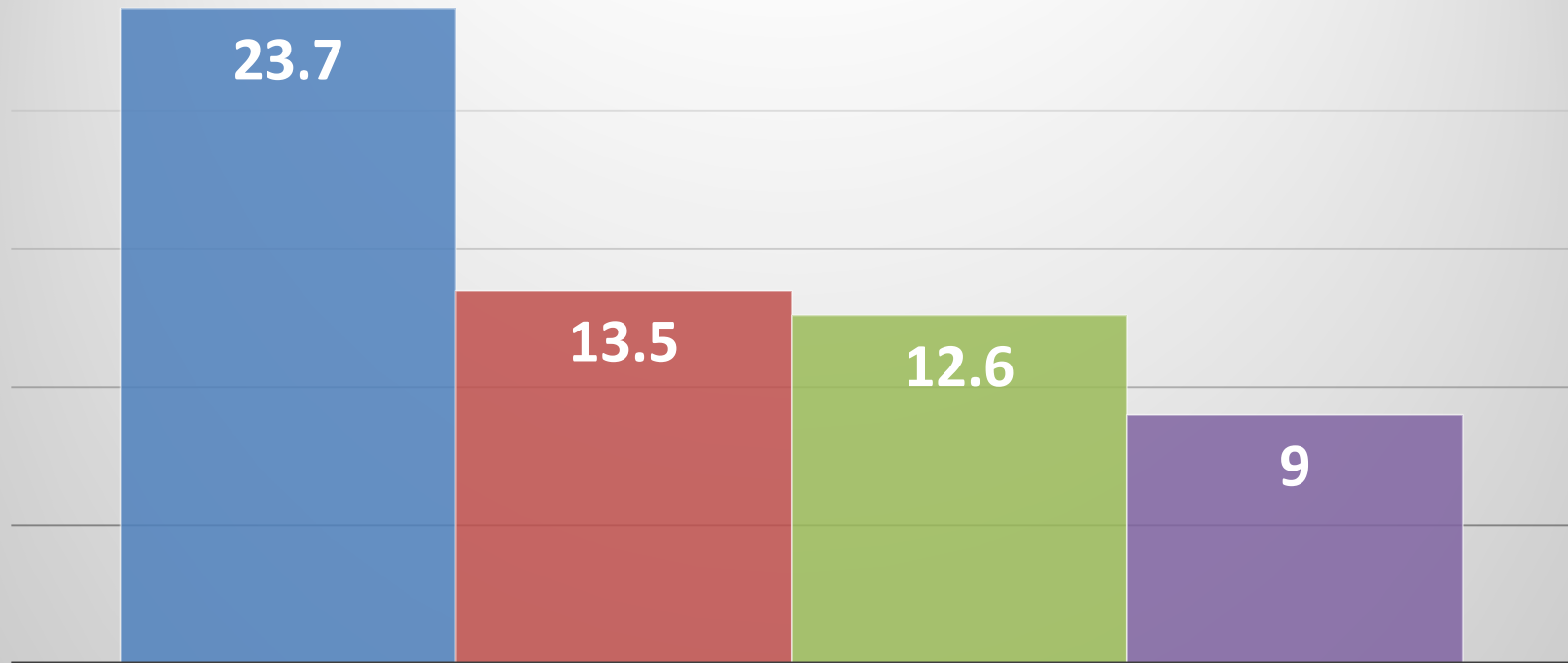


See Friends of the Earth, 2010. Reckless Gamblers

# Can tougher targets be met?

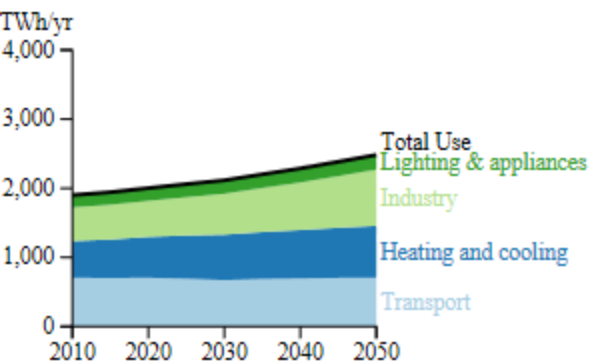
- First use of DECC pathway calculator implies not: reaching only 12.6 GtCO<sub>2</sub>e, when budget is just 9 GtCO<sub>2</sub>...

## Outputs from DECC pathway model, GtCO<sub>2</sub>e

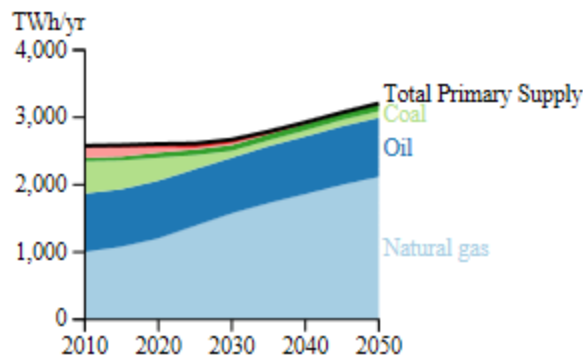


- Doesn't tackle climate change
- Markal
- FOE
- Target

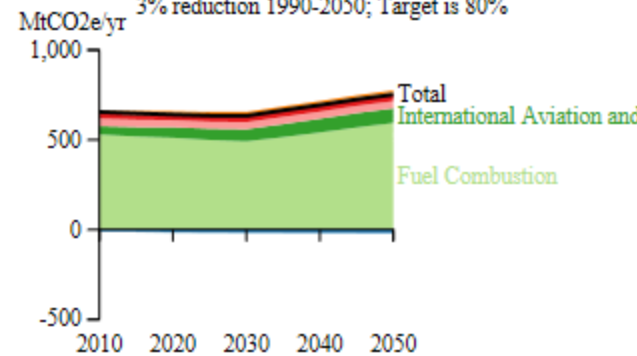
### Final Energy Demand



### Primary Energy Supply



### Greenhouse Gas Emissions



- Domestic transport behaviour  i  1  2  3  4
- Shift to zero emission transport  i  1  2  3  4
- Choice of fuel cells or batteries  i  1  2  3  4
- Domestic freight  i  1  2  3  4
- International aviation  i  1  2  3  4
- International shipping  i  1  2  3  4
- Average temperature of homes  i  1  2  3  4
- Home insulation  i  1  2  3  4
- Home heating electrification  i  A  B  C  D
- Home heating that isn't electric  i  A  B  C  D
- Home lighting & appliances  i  1  2  3  4
- Electrification of home cooking  i  A  B
- Growth in industry  i  A  B  C
- Energy intensity of industry  i  1  2  3
- Commercial demand for heating and cooling  i  1  2  3  4
- Commercial heating electrification  i  A  B  C  D
- Commercial heating that isn't electric  i  A  B  C  D
- Commercial lighting & appliances  i  1  2  3  4
- Electrification of commercial cooking  i  A  B

- Nuclear power stations  i  1  2  3  4
- CCS power stations  i  1  2  3  4
- CCS power station fuel mix  i  A  B  C  D
- Offshore wind  i  1  2  3  4
- Onshore wind  i  1  2  3  4
- Wave  i  1  2  3  4
- Tidal Stream  i  1  2  3  4
- Tidal Range  i  1  2  3  4
- Biomass power stations  i  1  2  3  4
- Solar panels for electricity  i  1  2  3  4
- Solar panels for hot water  i  1  2  3  4
- Geothermal electricity  i  1  2  3  4
- Hydroelectric power stations  i  1  2  3  4
- Small-scale wind  i  1  2  3  4
- Electricity imports  i  1  2  3  4
- Land dedicated to bioenergy  i  1  2  3  4
- Livestock and their management  i  1  2  3  4
- Volume of waste and recycling  i  A  B  C  D
- Marine algae  i  1  2  3  4
- Type of fuels from biomass  i  A  B  C  D
- Bioenergy imports  i  1  2  3  4

- Geosequestration  i  1  2  3  4
- Storage, demand shifting & interconnection  i  1  2  3  4



# Can tougher targets/budgets be met?

- Looks hard at first....
- But DECC assumptions are very lax on the demand side
- For example, it assumes the very most you can do on international aviation demand is an 85% INCREASE.
- Similarly, more is possible on surface transport, and electricity demand

# UK electricity demand, 2030, TWh

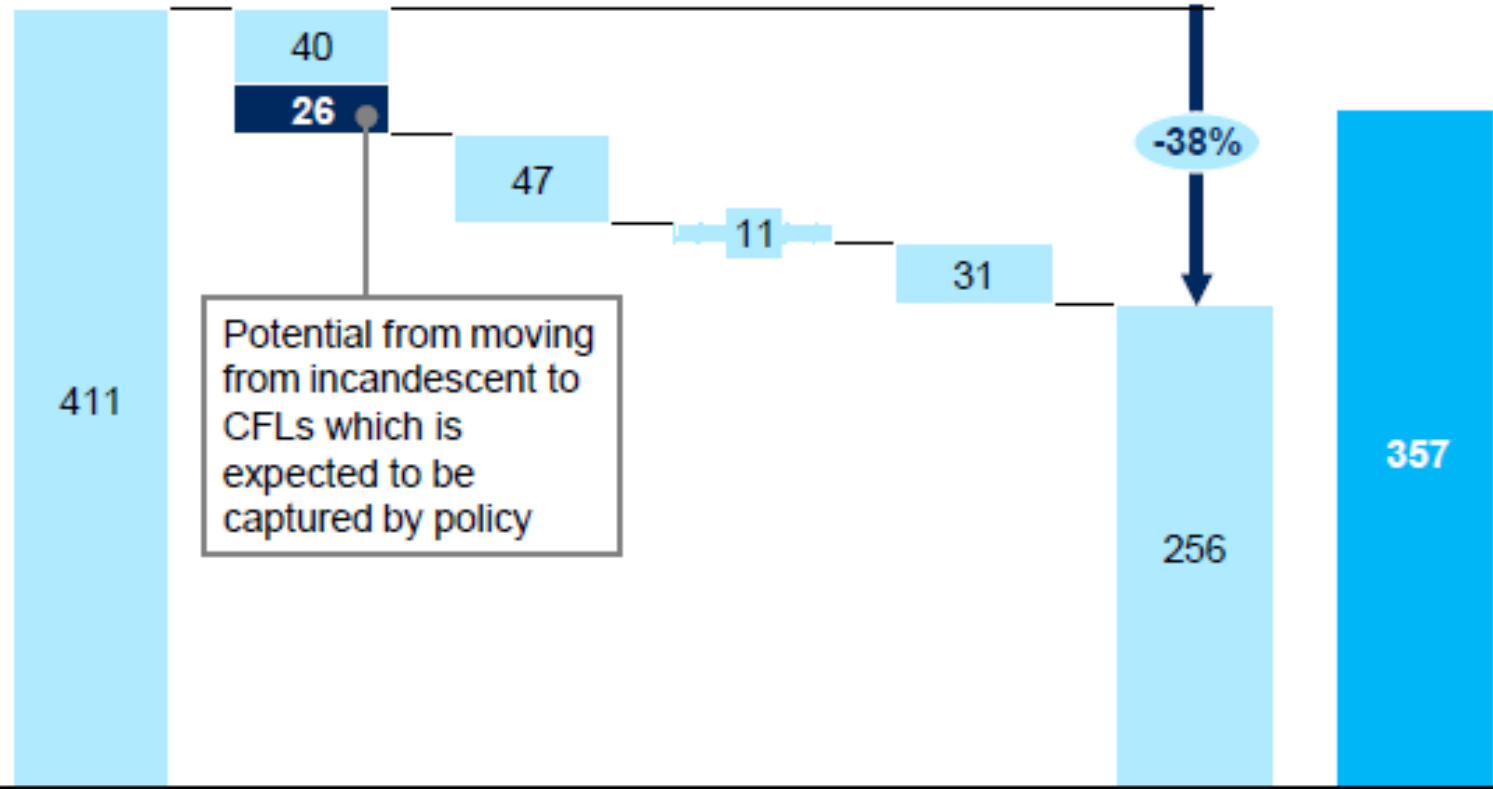
Share of baseline

48%

43%

40%

24%



Potential from moving from incandescent to CFLs which is expected to be captured by policy

2030 "policy off" projection

Residential

Commercial

Public admin

Industrial

2030 "full abatement potential"

2030 DECC central "policy on"

Potential electricity demand reduction by sector

# Demand side

- DECC calculator parameters reflect policy/political debate, where potential on demand side is massively downplayed...

# Government policy on saving energy...

- Oil and Gas –
  - Has a “maximise recovery” strategy, but no “minimise demand” plan
- Aviation – no new runway is not considered an option
- Energy bills – no main political party is advocating major public investment in tackling energy efficiency

# 1) Changes to DECC calculator..

- Radical changes to demand side options
- Focus on total carbon, not end point
- Incorporate bioenergy calculator
- Updates on cost
- Tackle imported emissions
- But more importantly, overall climate strategy needs to change...

## 2) A new climate strategy

- CCC report out today
- 4CB does need revising...
- But it needs tightening not weakening
- Difficult in current political climate
- A new foot-to-the-floor approach is needed, with strong action in all sectors, based on 4 priorities:

## 2) A new climate strategy:

- No new fossil fuel extraction; we need to keep it in the ground
- Stop building high-carbon infrastructure
- Save as much energy as possible
- All the energy we use should be renewable

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# Detail on FOE pathway:

- search “DECC pathway”  
on [www.foe.co.uk](http://www.foe.co.uk)

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