



# CLIMATE CHANGE DELIVERY PLAN

MEETING SCOTLAND'S STATUTORY CLIMATE CHANGE TARGETS

Cameron Maxwell

August 2009



# Climate Change Delivery Plan



- Published on 17 June, before Bill passed
- Measures to meet 34% and 42% Interim targets then proposed
- Transformational measures to set Scotland on path to 2050
- Bridge to detailed, statutory Report on Proposals and Policies



CLIMATE CHANGE DELIVERY PLAN



MEETING SCOTLAND'S STATUTORY CLIMATE CHANGE TARGETS  
June 2009



# Scotland's Emissions

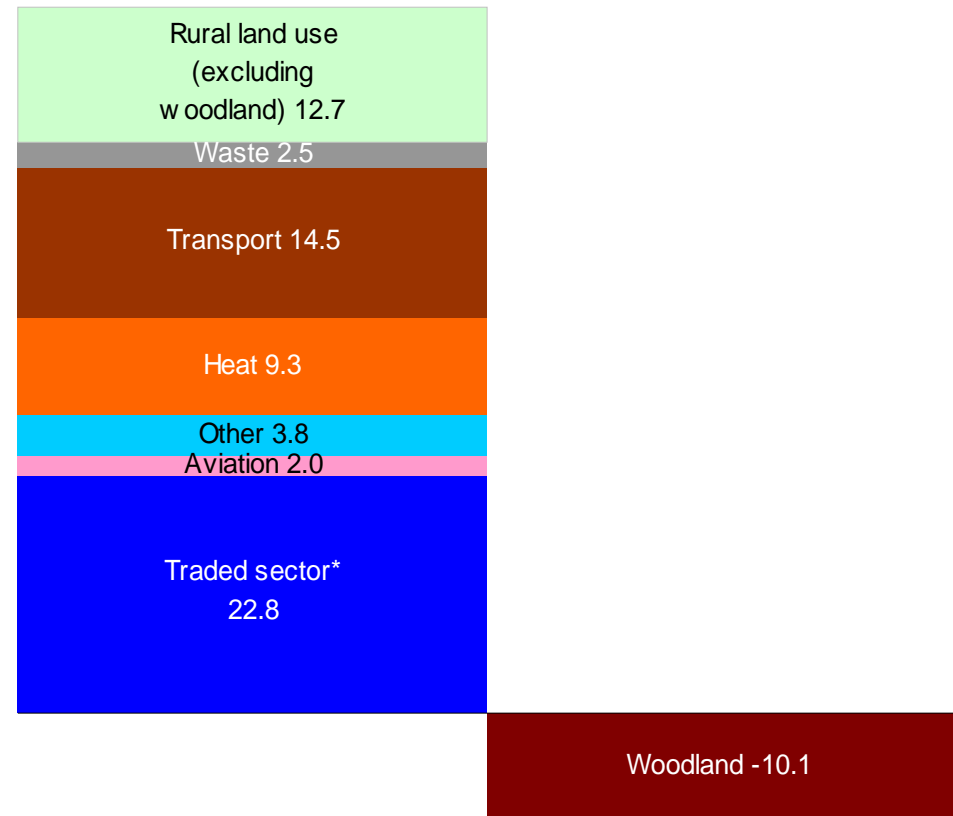


## Scotland's emissions:

- 70 MtCO<sub>2</sub>e in 1990
- 58 MtCO<sub>2</sub>e in 2006

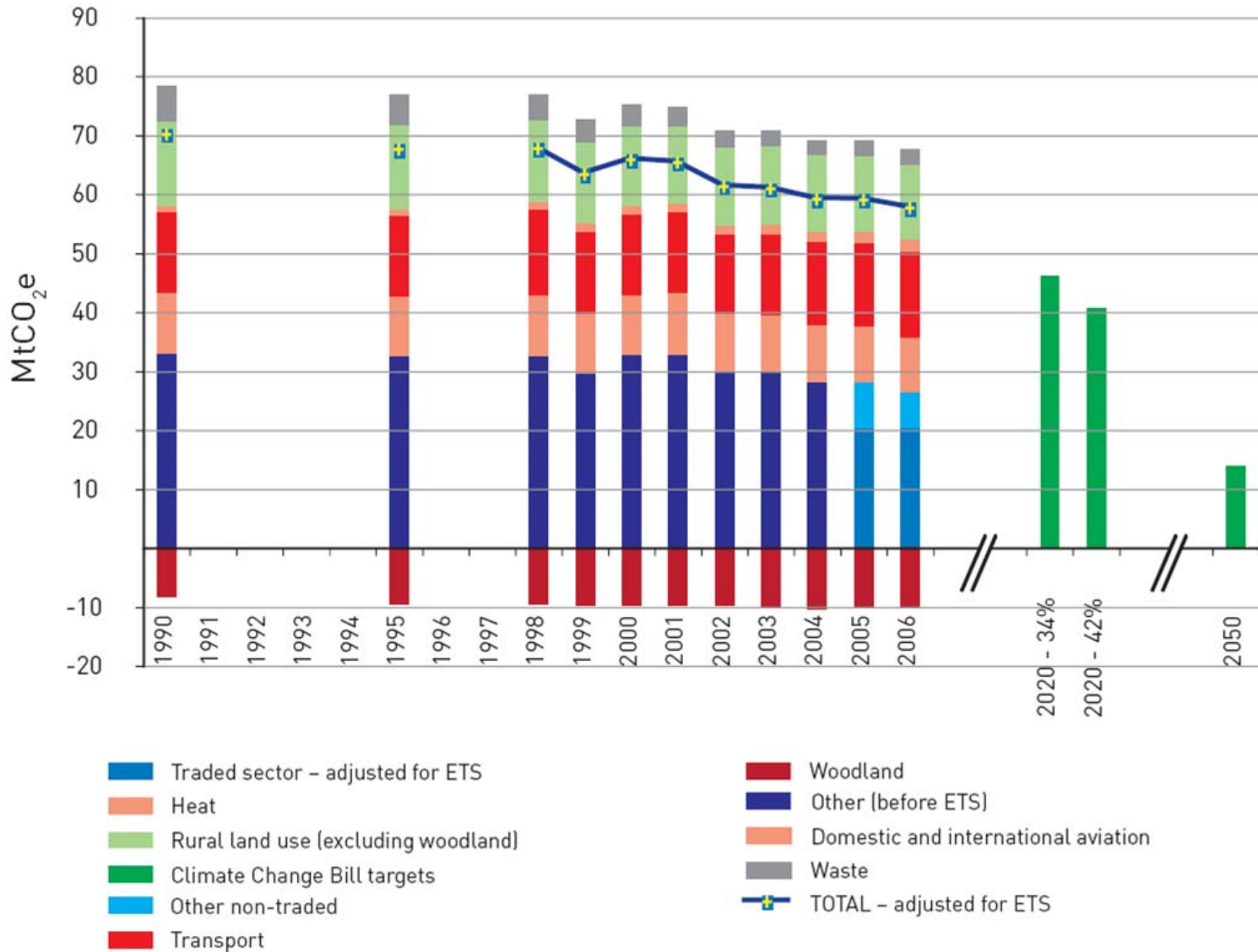
(Including international aviation and shipping and EU ETS)

## 2006 emissions (MtCO<sub>2</sub>e)



\*Electricity generation and energy intensive industry

# Scotland's Emissions Profile



# Scotland's 2020 Target



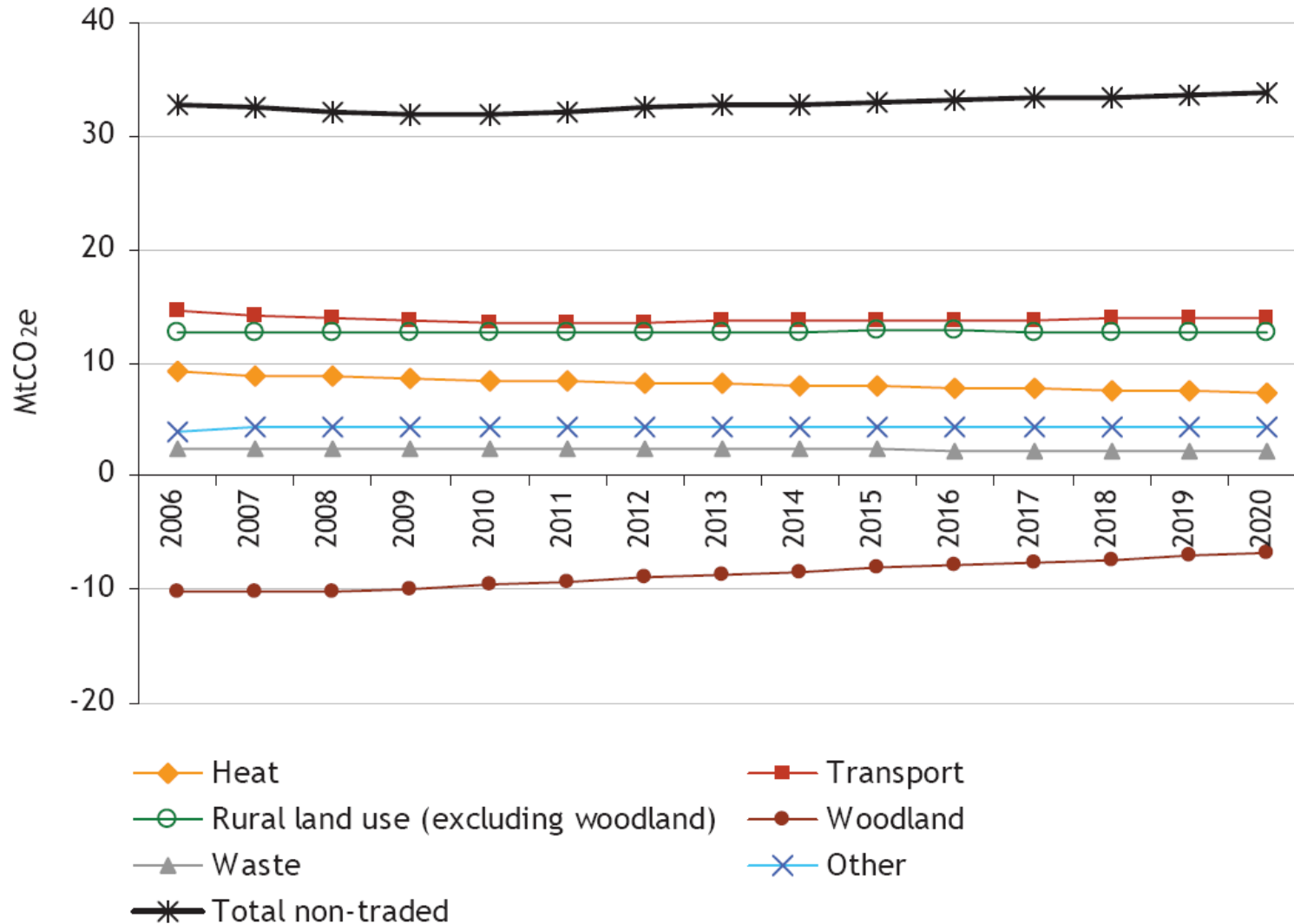
## 42% target in 2020

- Emissions of no more than 41 MtCO<sub>2</sub>e
  - 17 MtCO<sub>2</sub>e reduction from 2006 levels
  - 9 MtCO<sub>2</sub>e from the traded sector
  - 8 MtCO<sub>2</sub>e from the non-traded sector

## Delivery Plan measures are for 34% and 42% targets

- 42% target assumes EU moves to a 30% emissions reduction target
- If this doesn't happen, traded sector only delivers 5 MtCO<sub>2</sub>e  
=> measures in Delivery Plan only give 36% reduction

# “Business as Usual” Emissions to 2020



# Transformational Outcomes



1. Decarbonised electricity generation sector by 2030
2. Decarbonised heat sector by 2050 with significant progress by 2030
3. Almost complete decarbonisation of road transport by 2050 with significant progress by 2030
4. Comprehensive approach to ensure that carbon is fully factored into decisions about rural land use

# Measures to Deliver the Targets



Strategic measures needed to meet 2020 targets and deliver transformational change in five key sectors:

- The traded sector (electricity generation and energy intensive industry)
- Heating buildings
- Transport
- Agriculture, land use and forestry
- Waste





# What This Means by Sector



	1990	2006	2020 emissions - 34% world			2020 emissions - 42% world		
	emissions	emissions	% change against ...			% change against ...		
	MtCO <sub>2e</sub>	MtCO <sub>2e</sub>	MtCO <sub>2e</sub>	1990	2006	MtCO <sub>2e</sub>	1990	2006
<b>Traded sector allocation<sup>1</sup></b>		<b>22.8</b>	<b>17.5</b>	-	<b>-23%</b>	<b>14.2</b>	-	<b>-38%</b>
Phase I traded sector		20.4						
Not traded in 2006 but traded in Phase II		2.4						
<b>Aviation - domestic and international</b>	<b>1.1</b>	<b>2.0</b>	<b>1.8</b>	<b>+69%</b>	<b>-9%</b>	<b>1.8</b>	<b>+69%</b>	<b>-9%</b>
<b>Other, non-traded<sup>2</sup></b>		<b>3.8</b>	<b>4.3</b>	-	<b>+13%</b>	<b>4.3</b>	-	<b>+13%</b>
Other, before ETS introduced	33.2							
<b>Heat</b>	<b>10.2</b>	<b>9.3</b>	<b>5.4</b>	<b>-47%</b>	<b>-42%</b>	<b>5.0</b>	<b>-51%</b>	<b>-46%</b>
Domestic Buildings	7.8	7.3						
Non-domestic buildings	2.4	2.1						
<b>Transport</b>	<b>13.7</b>	<b>14.5</b>	<b>11.2</b>	<b>-18%</b>	<b>-23%</b>	<b>10.0</b>	<b>-27%</b>	<b>-32%</b>
Road	9.2	10.5						
Rail	0.2	0.3						
Off-road	1.6	1.6						
Shipping - domestic and international	2.6	2.2						
<b>Waste</b>	<b>5.7</b>	<b>2.5</b>	<b>1.5</b>	<b>-73%</b>	<b>-39%</b>	<b>1.5</b>	<b>-73%</b>	<b>-39%</b>
<b>Rural land use (excluding woodland)</b>	<b>14.5</b>	<b>12.7</b>	<b>12.0</b>	<b>-17%</b>	<b>-6%</b>	<b>11.4</b>	<b>-21%</b>	<b>-10%</b>
Agricultural and other land use - net sources <sup>3</sup>	16.9	15.7						
Agricultural and other land use - net sinks	-2.4	-2.9						
<b>Woodland</b>	<b>-8.2</b>	<b>-10.1</b>	<b>-7.4</b>	*	*	<b>-7.7</b>	*	*
<b>TOTAL after adjustment for EU ETS</b>	<b>70.1</b>	<b>57.6</b>	<b>46.3</b>	<b>-34%</b>	<b>-20%</b>	<b>40.5</b>	<b>-42%</b>	<b>-30%</b>

# The Traded Sector



## Basic Measures

- 50% electricity generation from renewables by 2020
- Energy efficiency measures and Combined Heat and Power (CHP) for industry

## Transformational Outcomes

- Delivery of significant wave and tidal energy (2030)
- All fossil fuel power stations use Carbon Capture and Storage (CCS)





## Basic Measures

- Loft and cavity wall insulation plus 10% solid wall insulation
- All new homes are low carbon
- Meet 11% renewable heat target

## Advanced Measures

- As above but 40% solid wall insulation

## Transformational Outcomes

- Significant progress on decarbonising the heat sector by 2030 e.g. all off-grid homes using low carbon heat
- Complete decarbonisation of heat supply by 2050 – little use of natural gas

# Non-Domestic Buildings



## Basic Measures

- All energy efficiency measures costing less than forecast carbon price plus some microgeneration/CHP
- All new buildings low carbon by 2016/7

## Transformational Outcome

- Complete decarbonisation of heat supply by 2050 – little use of natural gas





## Basic Measures

- Improved car efficiency
- Eco-driving, Smarter Choices, demand management
- Biofuels
- Inclusion of aviation in the EU Emissions Trading Scheme

## Advanced Measures

- Greater adoption of eco-driving
- Improved van and HGV efficiencies
- Reduced national speed limit

## Transformational outcomes

- Wholesale switch to electric cars and vans by 2030

# Rural Land Use



## Basic Measures

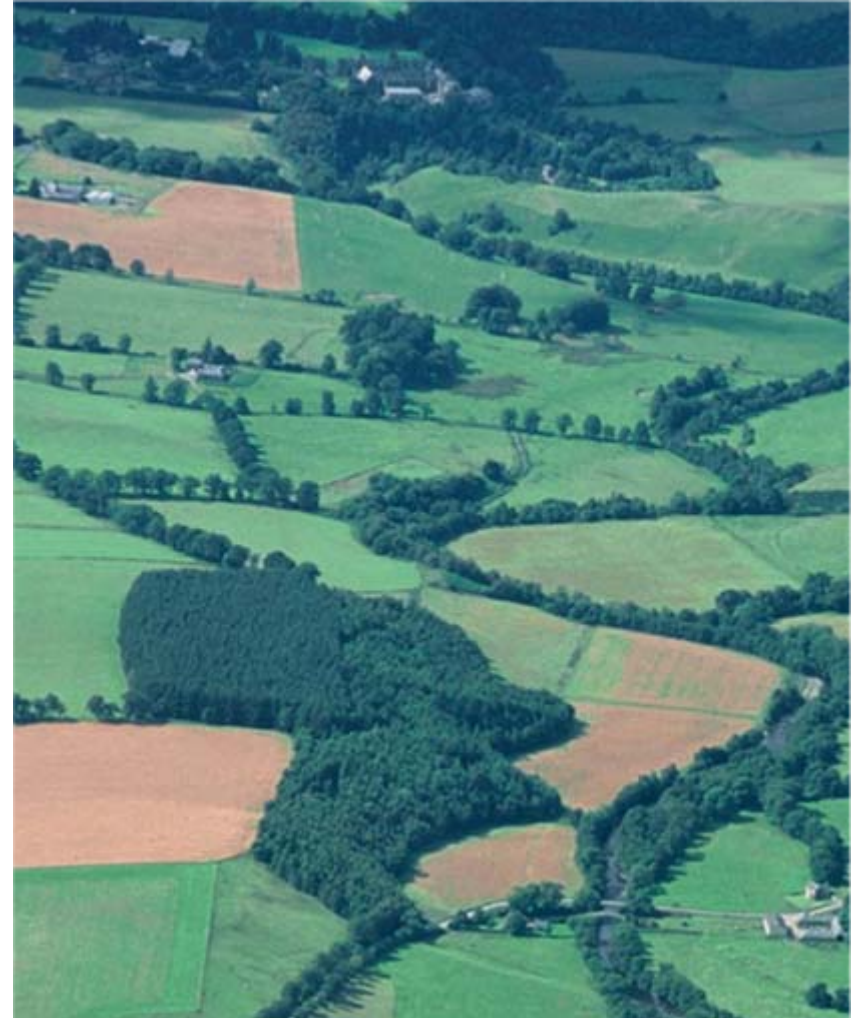
- Improvement in livestock genetics and diet
- Best practice in nutrient management regimes
- Further development of anaerobic digestion
- Protecting high carbon soils
- Afforestation of 10 000ha/yr

## Advanced Measures

- Greater uptake of agric. measures
- Afforestation of 15 000ha/yr

## Transformational Outcomes

- Fully incorporate carbon into land use decision-making



# Waste



## Basic Measures

- Minimise biodegradable waste to landfill
- 60% municipal waste to recycled/composted by 2020
- Anaerobic digestion for biodegradable waste
- Up to 25% Energy from Waste
- Reuse or recycle 70% of construction/demolition waste by 2020



# Challenge of a 42% target...



- Additional costs, delivering less cost effective measures
- More radical/disruptive
- Not all within SG competency
  
- EU ETS trajectory will only decline fast enough if global deal agreed at Copenhagen
- UK levers are for 34% target
  - Carbon Reduction Commitment
  - CERT
  - Renewable Heat Incentive



# But also opportunities...



## Economic opportunities in:

- Renewable energy
- Carbon Capture and Storage
- Energy efficiency products and services
- Low carbon technologies

**Stern** – doing nothing and suffering the consequences of irreversible climate change is much more expensive than tackling emissions

## Vision for a low carbon future

# Next Steps



- Show leadership internationally in run-up to Copenhagen (December 2009)
- Detailed report on proposals and policies by summer 2010
  - Further work on projections and abatement potential
  - Advice from the Committee on Climate Change
  - Building on measures in Delivery Plan
  - More detail on delivery, costs
- Public engagement strategy