

DECC Energy & CO₂ Emissions model

July 2009 results

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Introduction to the DECC Energy Model

What does the DECC Energy Model do?

The model projects:

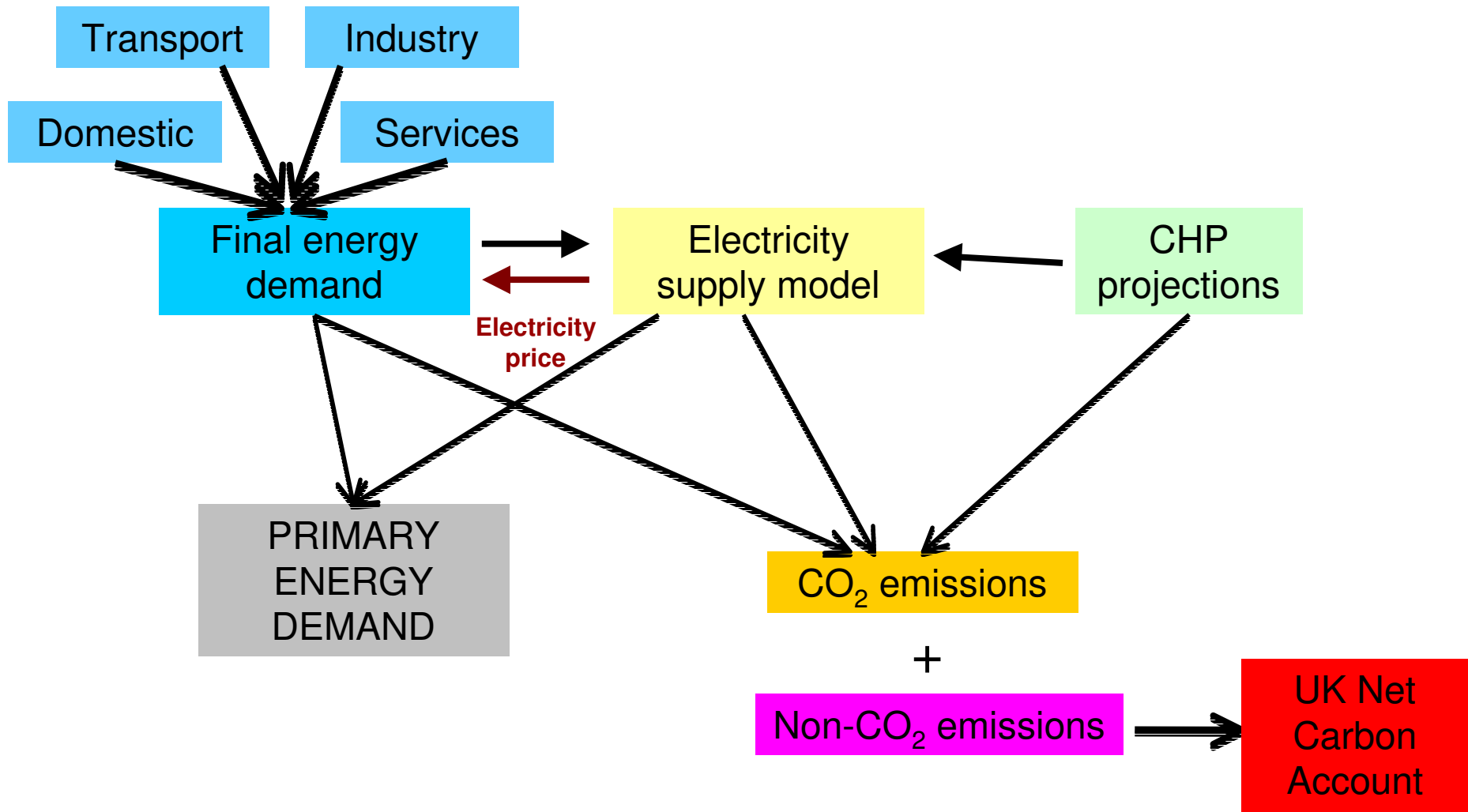
- Energy demand
- Electricity generation
- CO₂ Emissions
- *Projections of wholesale electricity prices*

DECC UK Low Carbon Transition Plan

- The latest projections include policy measures announced and proposed in the UK Low Carbon Transition Plan published 15 July 2009.



Structure of the DECC model?



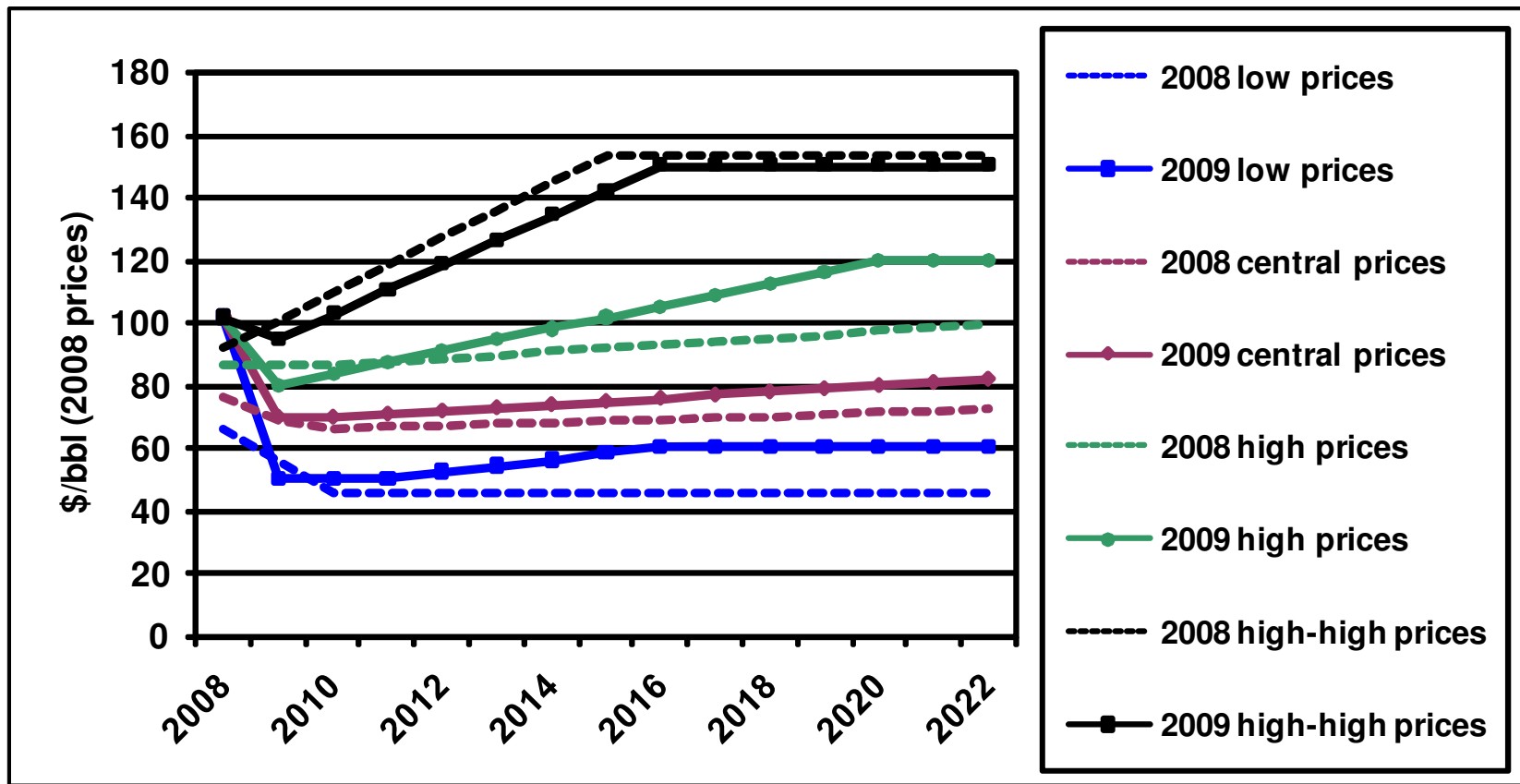
CHANGES IN ASSUMPTIONS & POLICY MEASURES

November 2008 (UEP32) to July 2009 (UEP38)

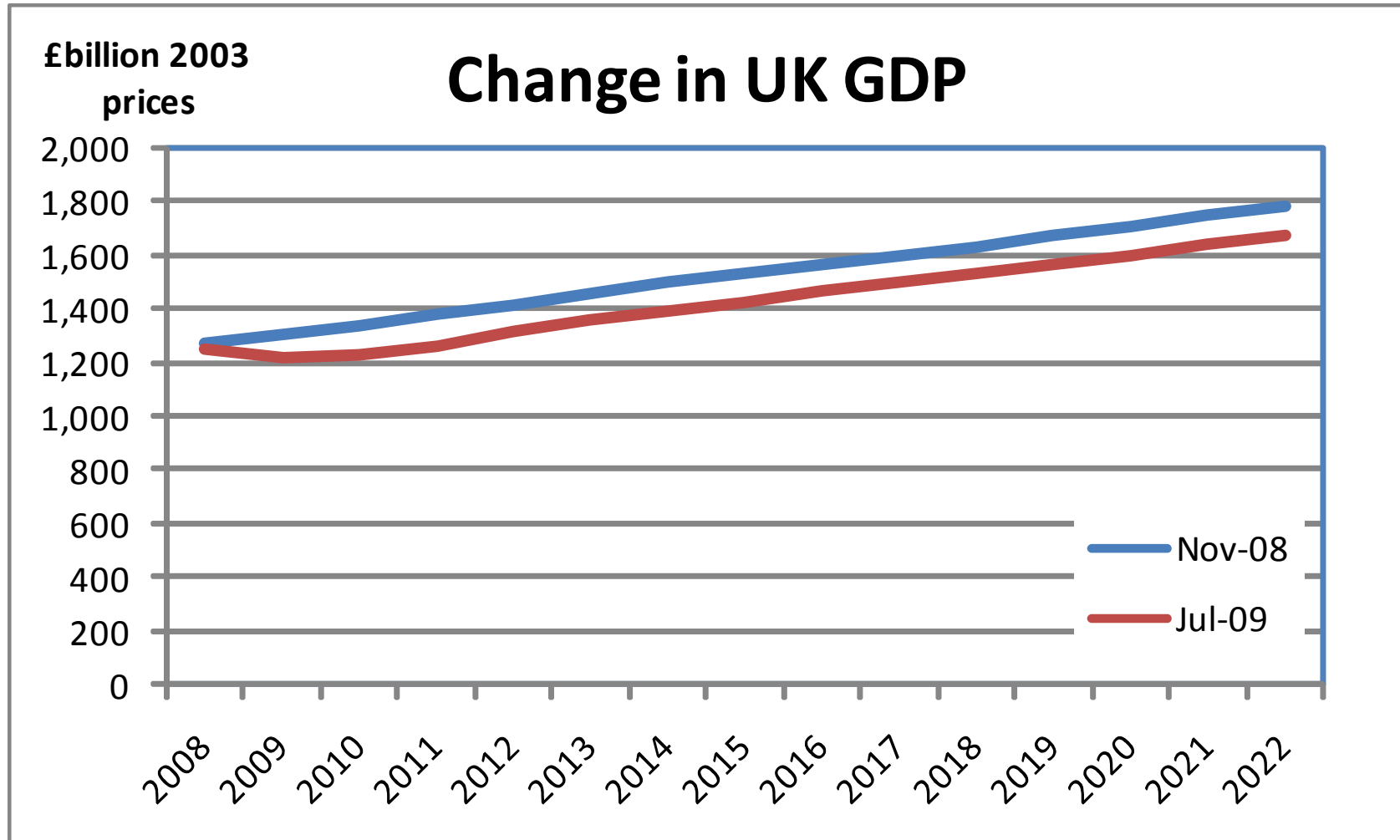
Change in fuel prices since Nov 2008



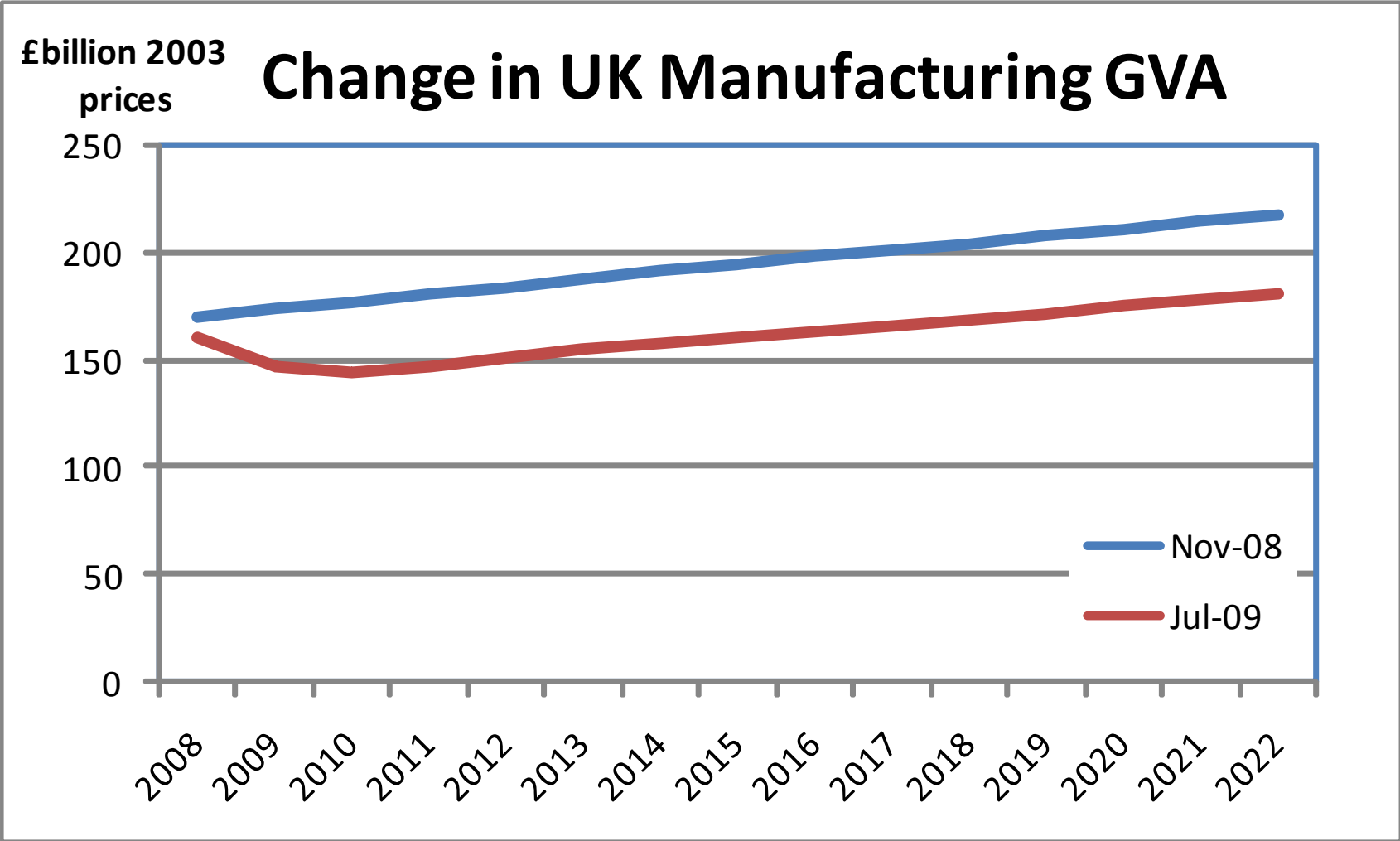
Changes in the oil price projections in different scenarios (\$/bbl)



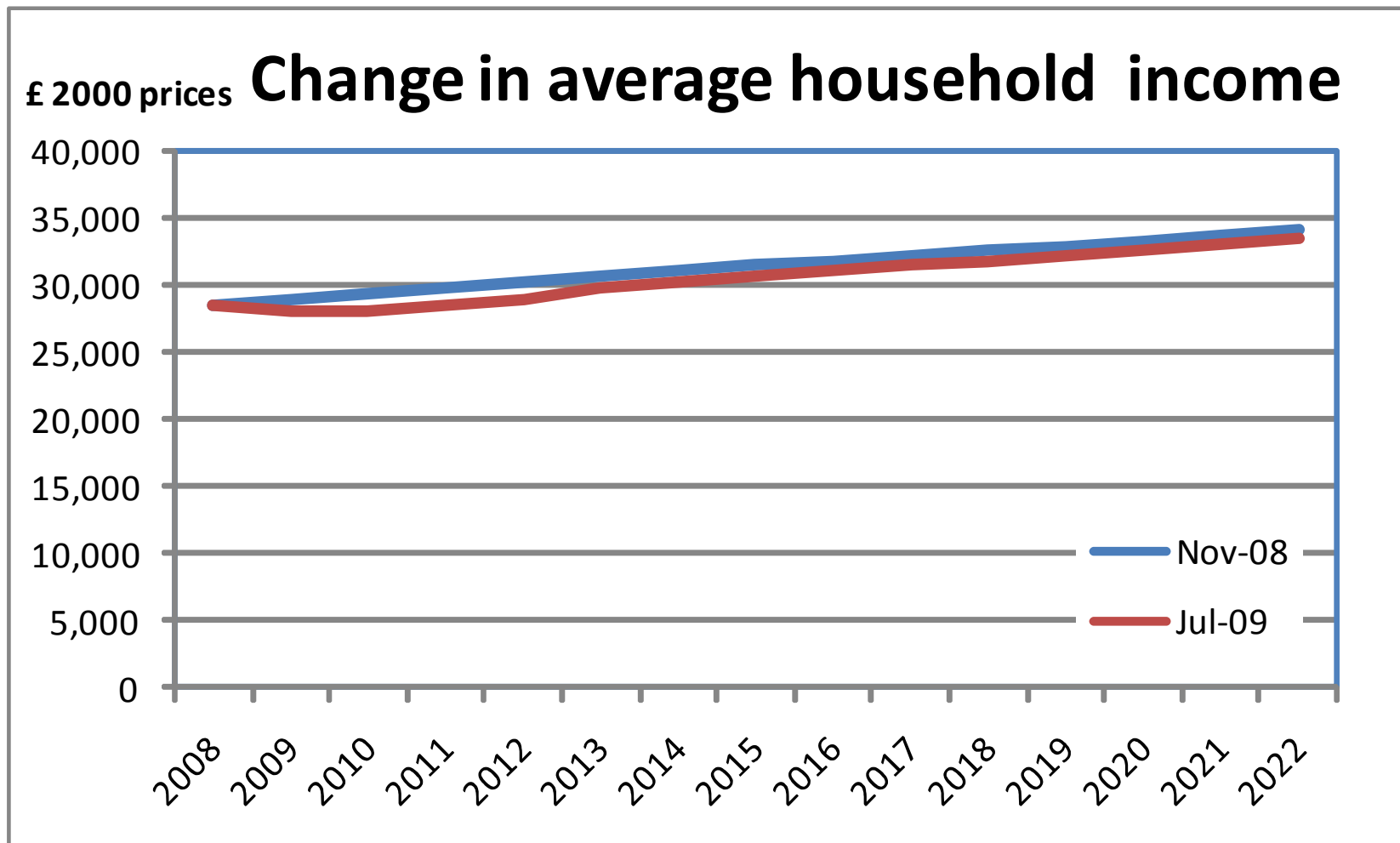
Economic growth: GDP



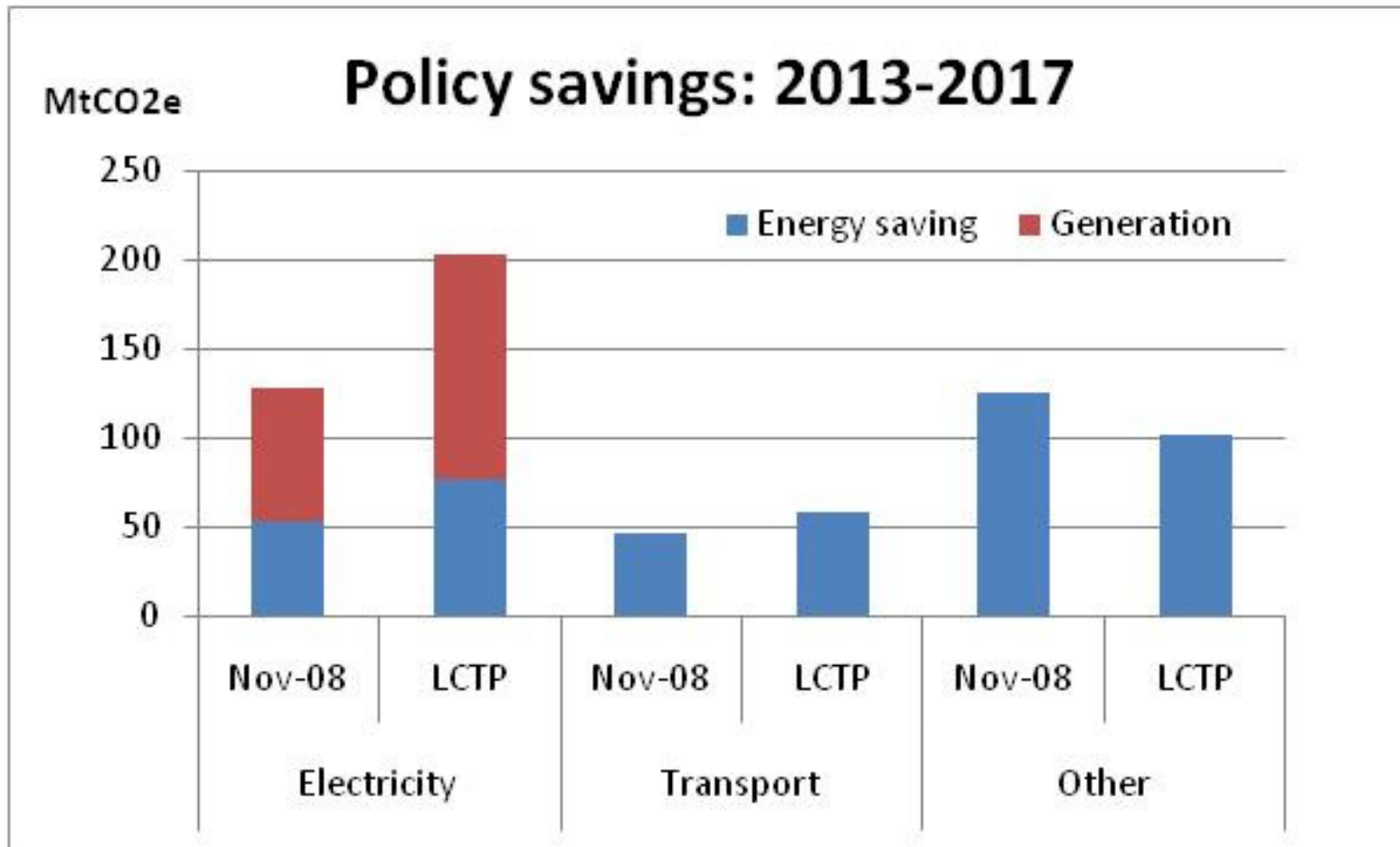
Economic growth: Manufacturing



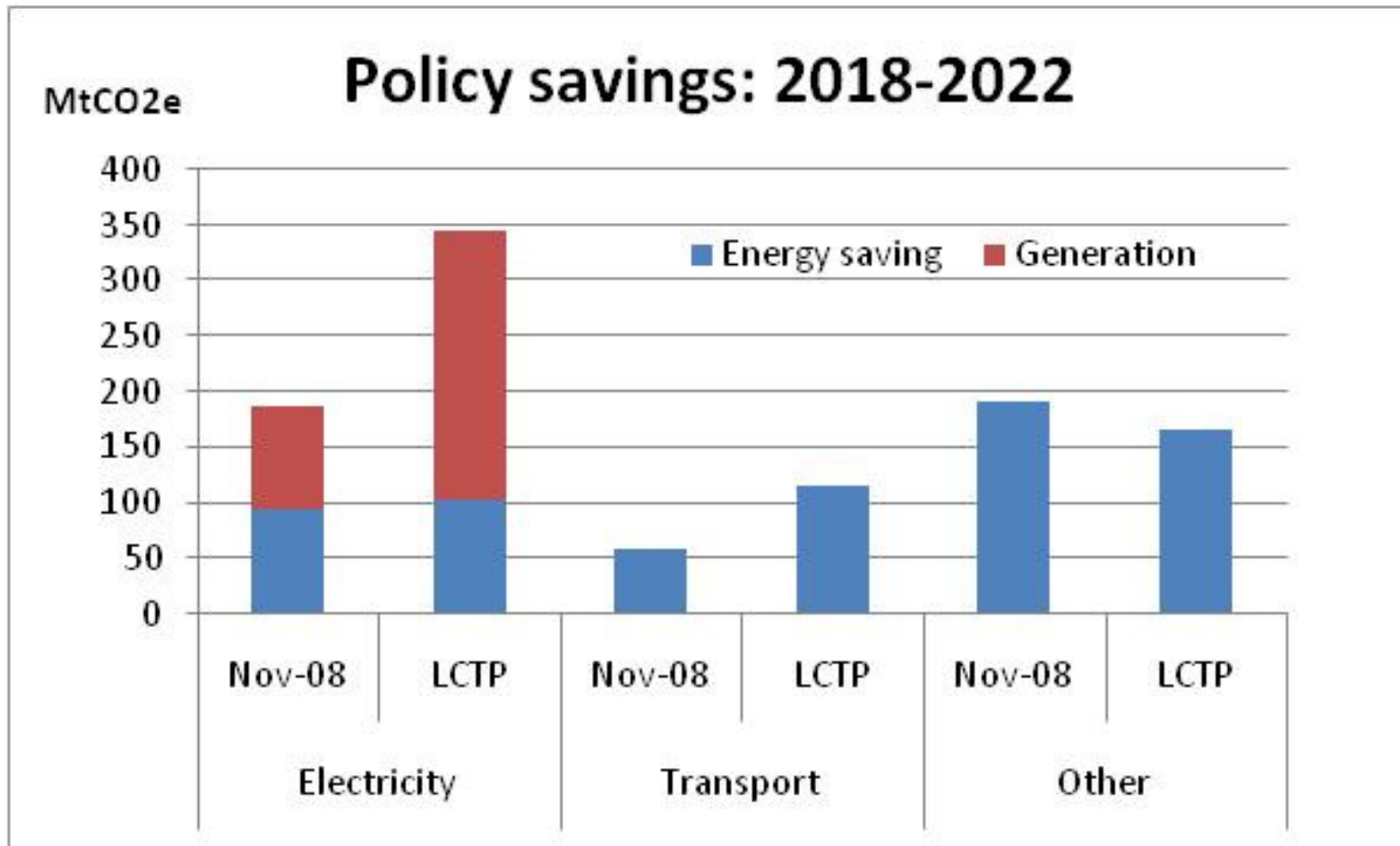
Economic growth: Household income



Policy impact: Budget 2



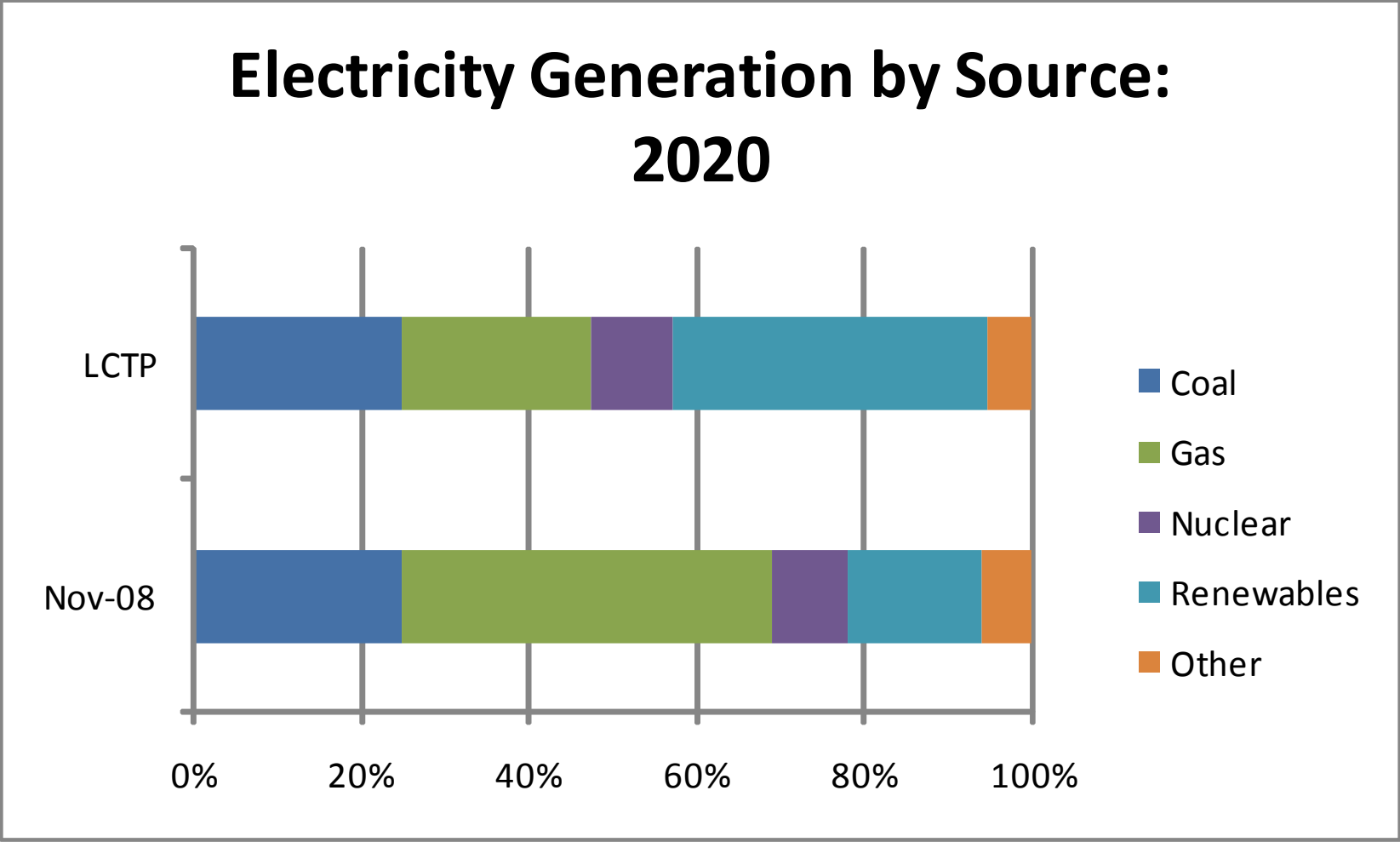
Policy impact: Budget 3



Changes in Electricity Generation

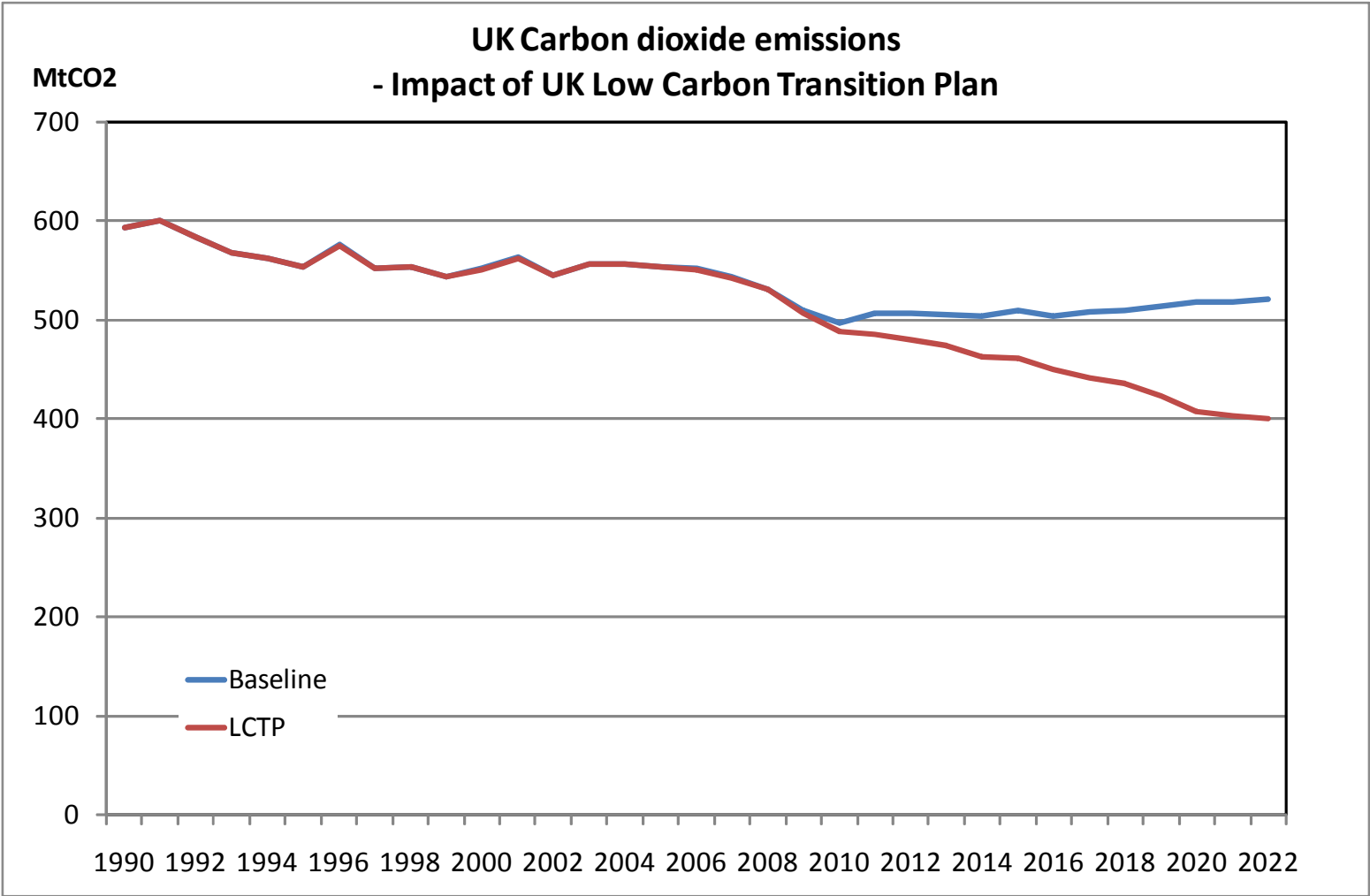


Electricity Generation by Source: 2020

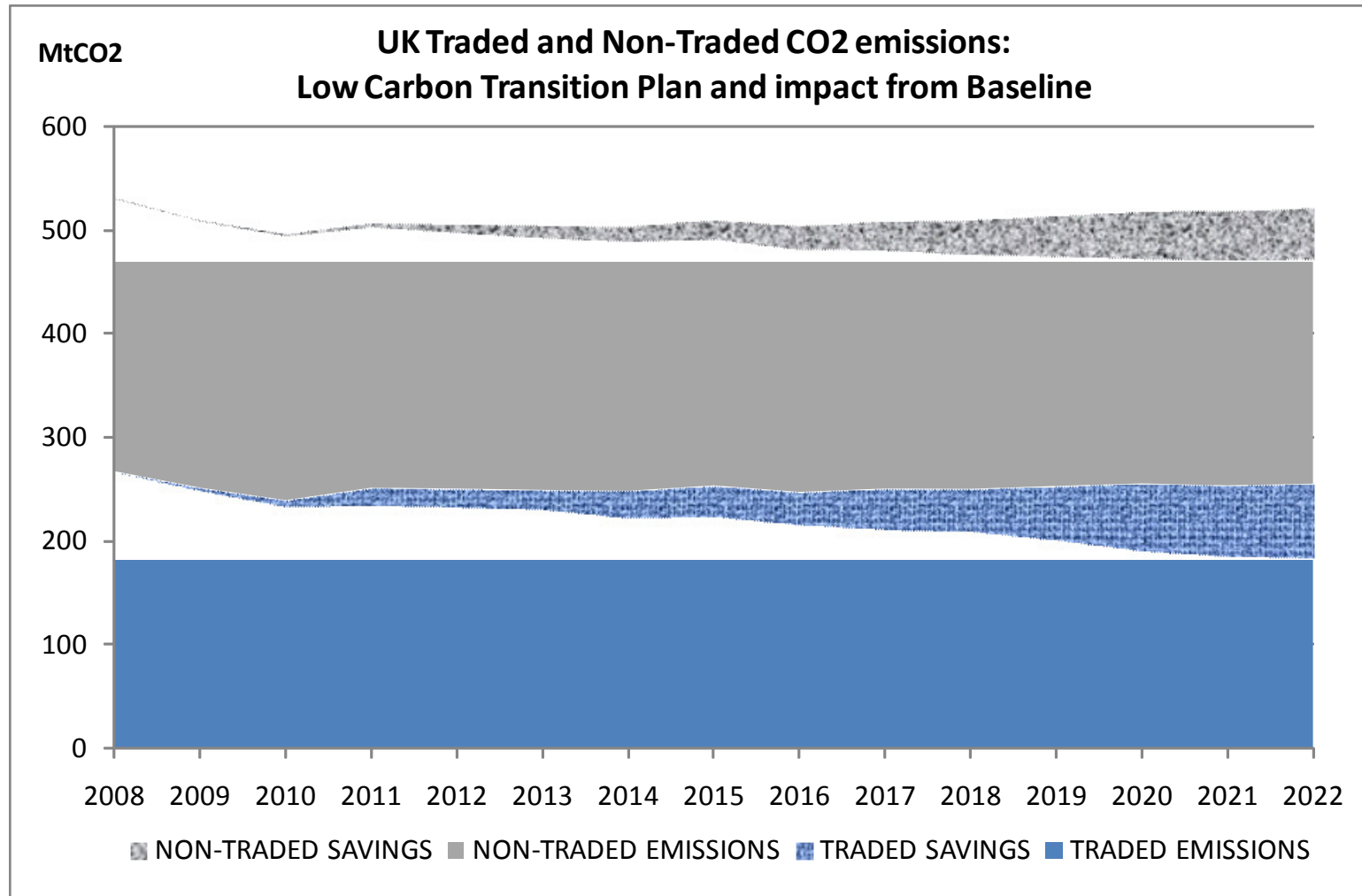


LATEST CO₂ PROJECTIONS

Updated CO2 projections



Impact of LCTP

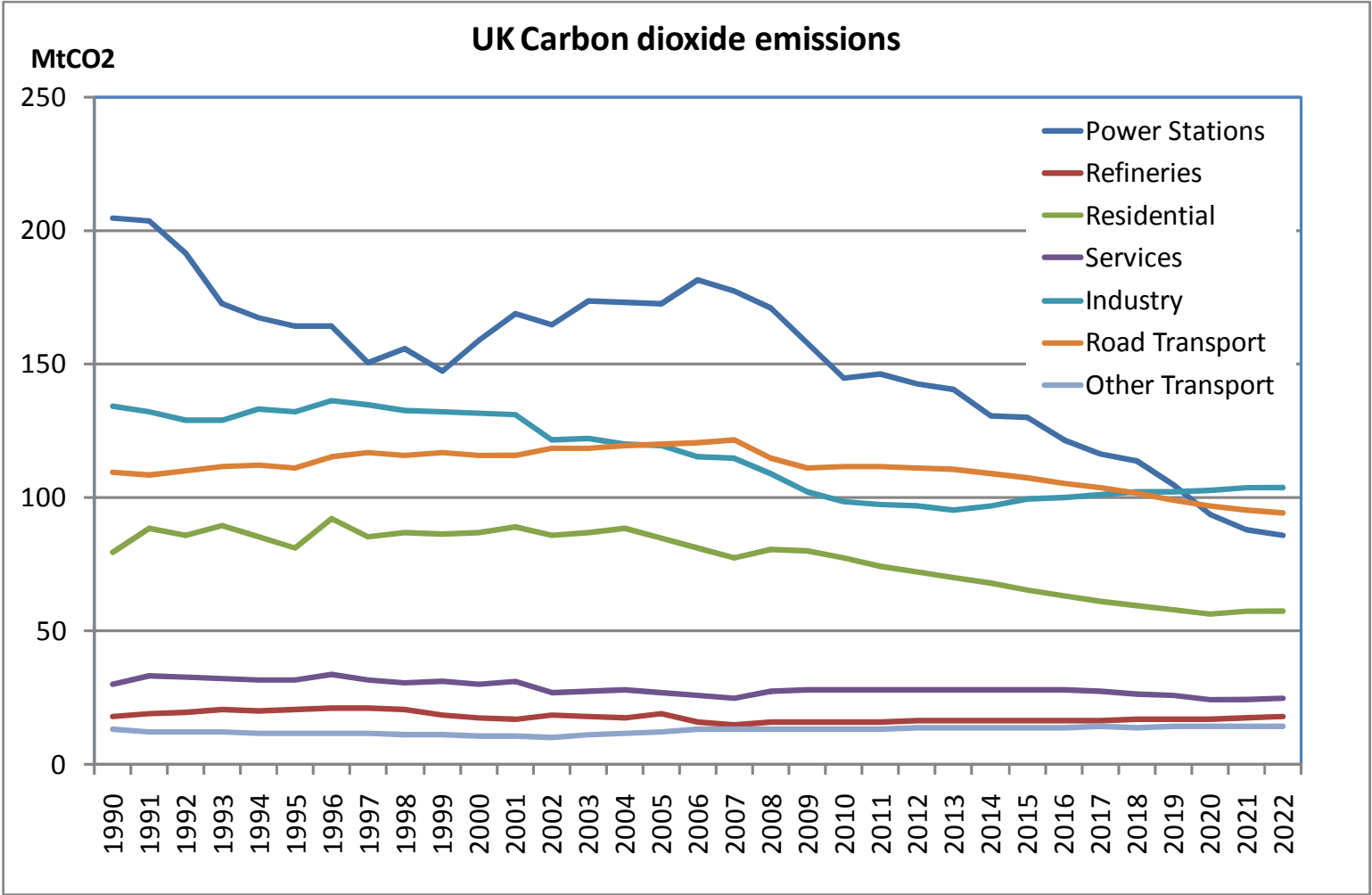


Current disaggregation on IPCC basis



MtCO ₂	1990	2007	2010	2015	2020
CARBON DIOXIDE					
Power Stations	205	177	144	130	94
Refineries	18	15	16	17	17
Residential	80	78	77	65	56
Services	30	25	28	28	24
of which: public	13	10	10	10	8
of which: commercial	12	11	13	13	12
of which: agriculture including ag&forestry fuel use	5	4	5	5	5
Industry	135	115	99	100	103
of which: industrial combustion	89	70	60	65	70
of which: industrial processes	18	14	13	12	12
of which: other energy supply	20	23	20	17	16
of which: off road construction	7	8	6	5	5
Road Transport	110	122	112	107	97
Other Transport	13	13	13	14	14
of which: civil aviation (domestic landing and take off)	0	1	1	1	1
of which: civil aviation (domestic cruise)	1	1	2	2	2
of which: railways	2	2	2	2	2
of which: national navigation	4	5	6	6	6
of which: military aviation & shipping	5	3	3	3	3
of which: aircraft support	0	0	0	1	1
LULUCF	3	-2	-1	1	3
TOTAL CARBON DIOXIDE EMISSIONS	593	543	488	461	408

CO2 projections by sector



Uncertainty in the projections



UPPER BOUND

Components of Uncertainty	2008-12	2013-17	2018-22
Modelling	44%	32%	20%
Fuel prices	4%	4%	2%
Growth	1%	3%	2%
Policy	0%	7%	41%
LULUCF	1%	2%	3%
Non-CO2 GHG	50%	52%	33%
TOTAL	100%	100%	100%
Upper range (MtCO2e)	106	129	165

Carbon Budgets



UK Net Carbon Account: Central LCTP scenario

MtCO ₂ e	July 2009		
Sector	Budget 1 2008-2012	Budget 2 2013-2017	Budget 3 2018-2022
Greenhouse gases			
Traded sector (CO₂)	1,233	1,078	985
Non-Traded sector (CO₂)	1,276	1,188	1,102
Non CO₂ Greenhouse gases	464	452	418
Net UK carbon account	2,974	2,718	2,505
CARBON BUDGET	3,018	2,782	2,544
Shortfall (negative implies emissions under budget)	-44	-64	-39
<i>Shortfall uncertainty range</i>	<i>-145 to +62</i>	<i>-184 to +61</i>	<i>-168 to +93</i>

The future



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- Next UEP projections – starting spring 2010 (Provisionally)
 - Sub-national projections (Devolved Administrations ...)
 - 2050 consideration

ANY QUESTIONS?