



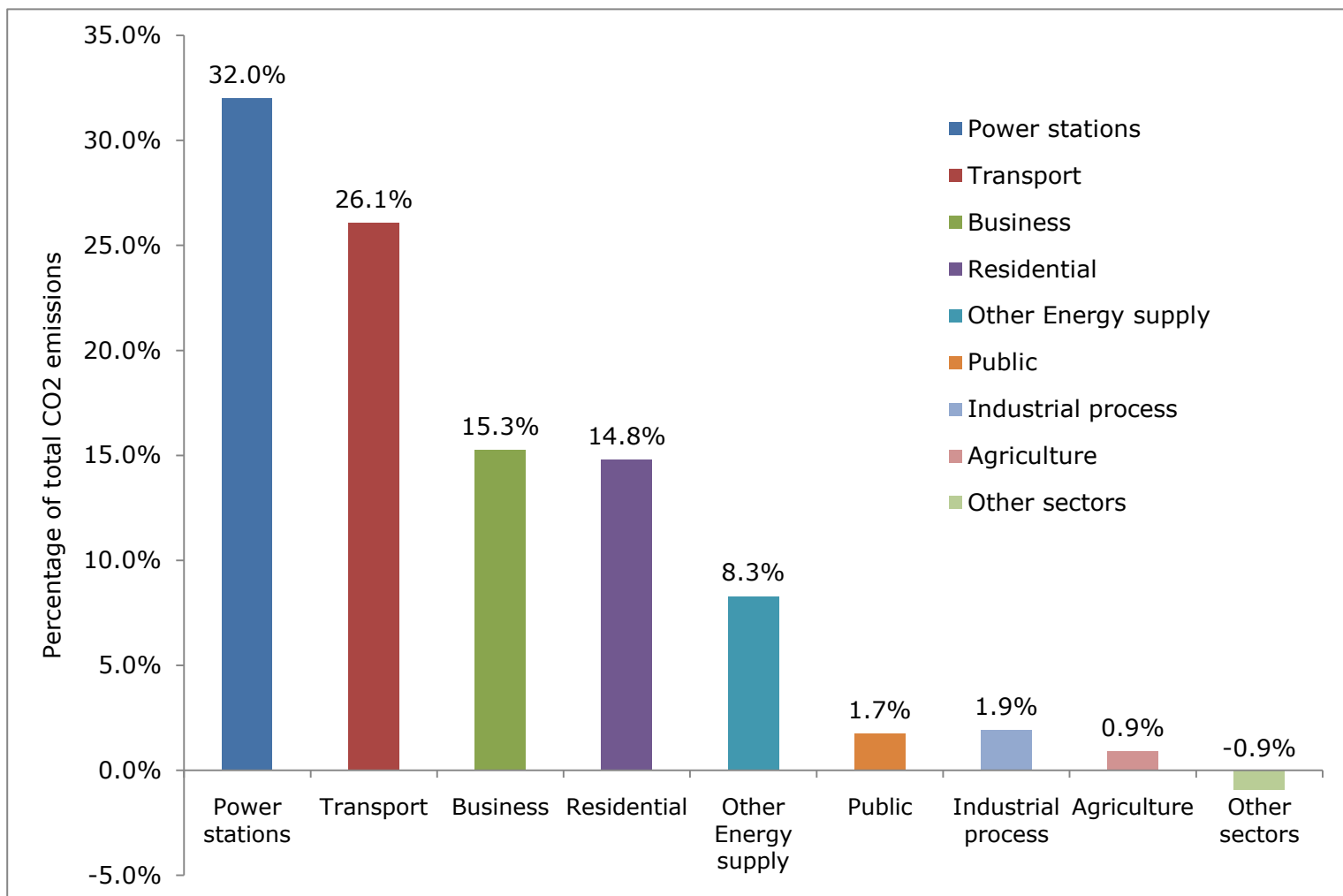
The UK Government and Devolved Administrations set out a strategy for sustainable development, *Securing The Future*, in 2005. Drawing on this framework and stakeholder feedback, we focus on the five themes which we think capture how the Gas and Electricity Markets Authority should contribute to the sustainability challenges of the 21<sup>st</sup> century.

The first of the five themes is managing the transition to a low carbon economy. We are responsible for the framework for the efficient functioning of gas and electricity markets. Our decisions on the industry rules governing the wholesale and retail markets and the regulation of monopoly networks facilitate the development of lower carbon technologies. We are clear that any assessment of economic efficiency should incorporate the environmental costs associated with a proposal.

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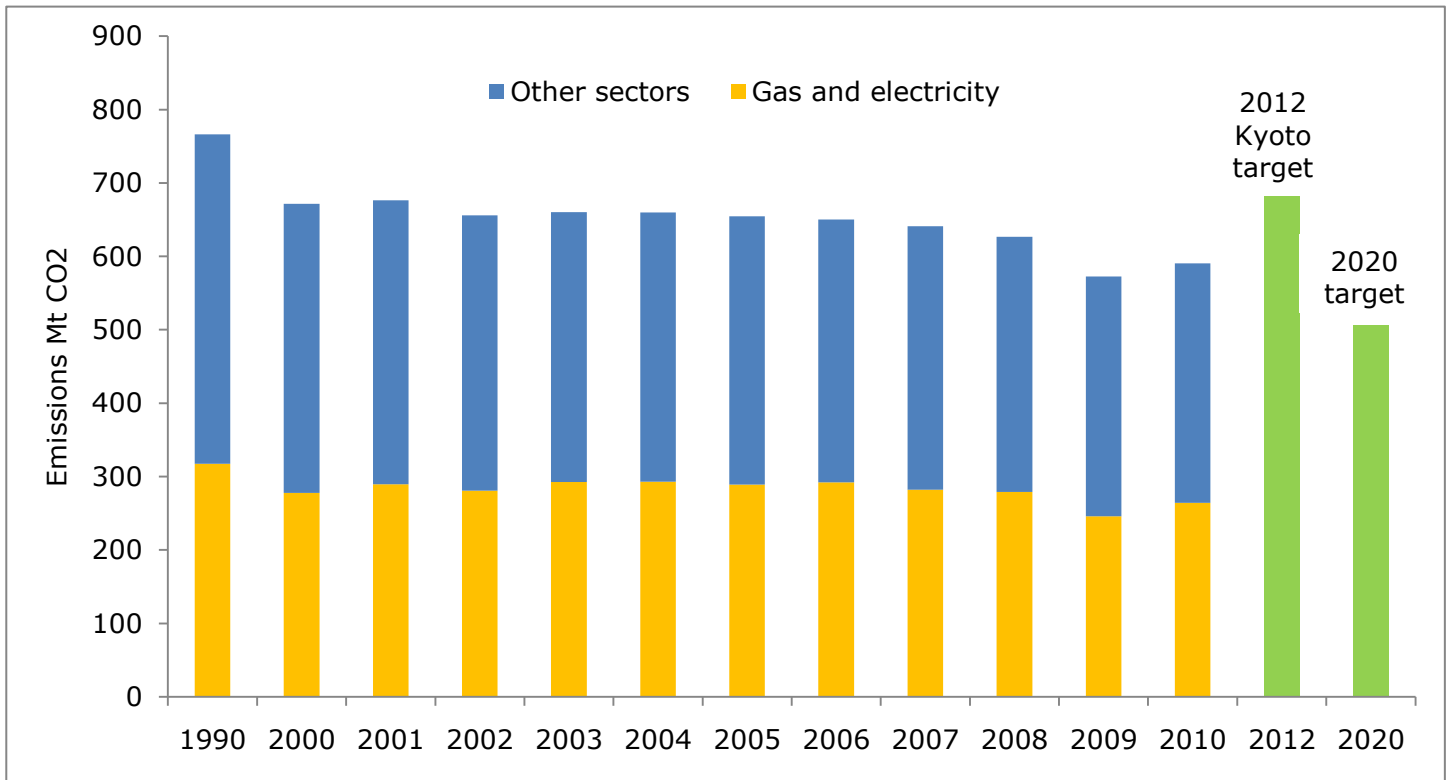
## Indicator 1: Electricity and gas sector greenhouse gas emissions



**Figure 1 - CO2 emissions by end user (updated July 2012)**

Source: DECC Energy Trends, 2011 predicted

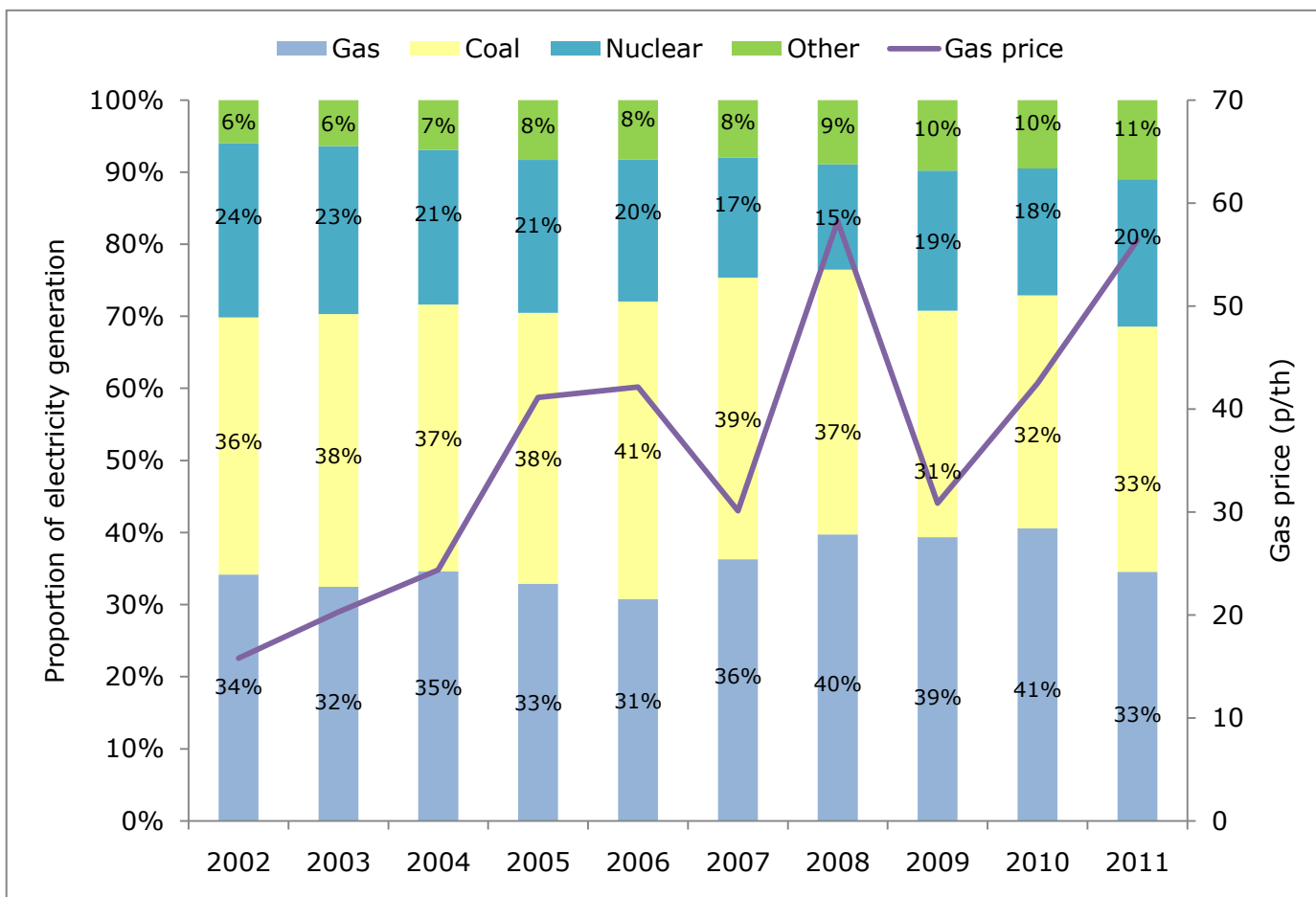
Power generation, transport, residential and business sectors remain the main contributors to greenhouse gas emissions according to predicted trends for 2011, although residential emissions have dipped below business emissions in the past year when measured as a percentage of total emissions.



**Figure 2 - Gas and electricity sector contributions to UK emissions (updated November 2012)**

Source: DECC DUKES, NAEI emissions data and Government emissions target commitments.

Emissions fell sharply in 2009, thanks to a significant reduction in demand due to the recession affecting most sectors. This was followed by a slight rise in 2010 as the economy began to recover. Despite this, we are easily meeting our 2012 target and are well on the way to meeting the 2020 target.

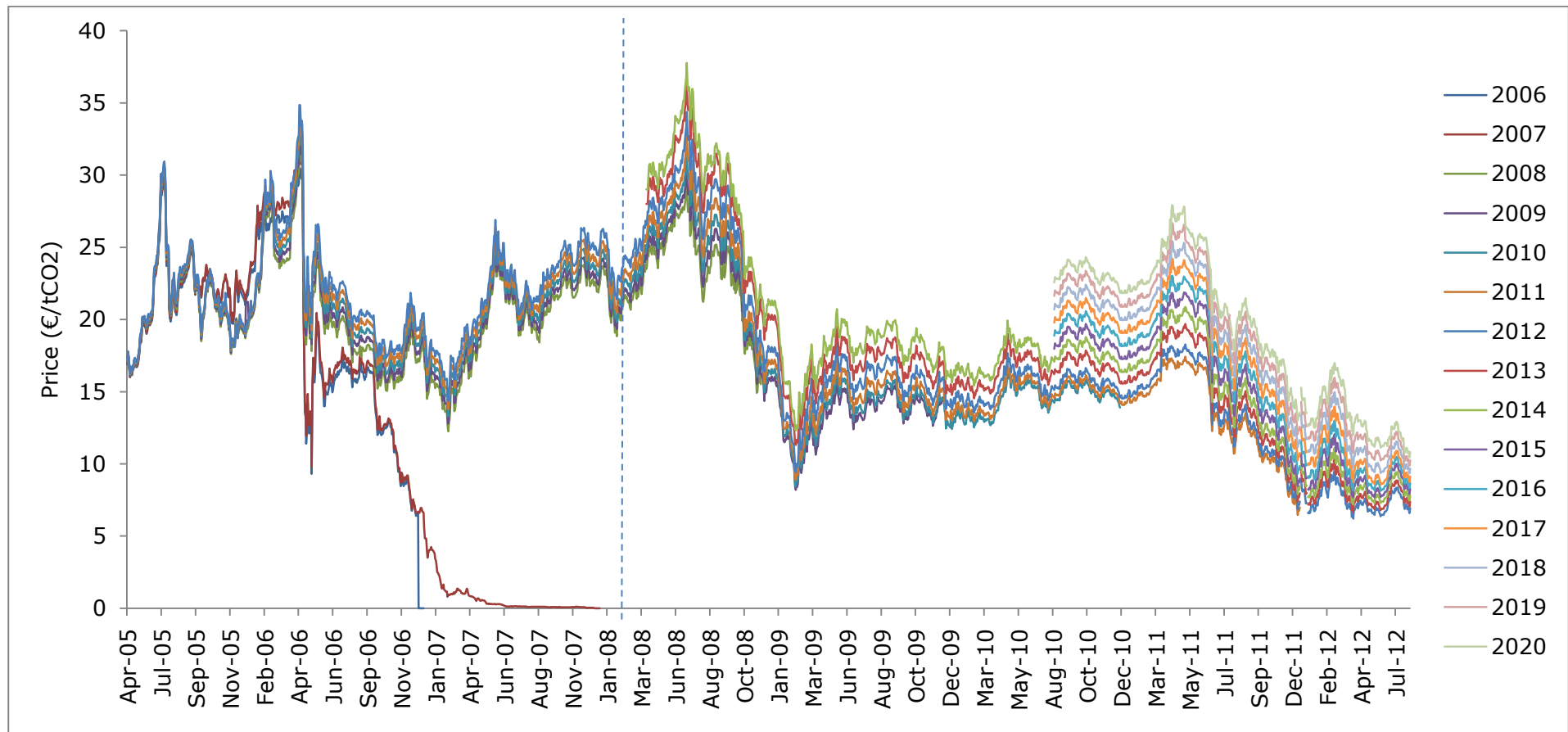


**Figure 3 - Fuel used in electricity generation (updated November 2012)**

Source: DECC Energy Trends table 5.1 and Bloomberg gas prices.

Gas and coal now have an equal share in the generation mix, with the decrease in gas generation due in part to the increasing price of gas, which in 2011 was just shy of its 2008 peak.

## Indicator 2: Impact of carbon price on costs of generation

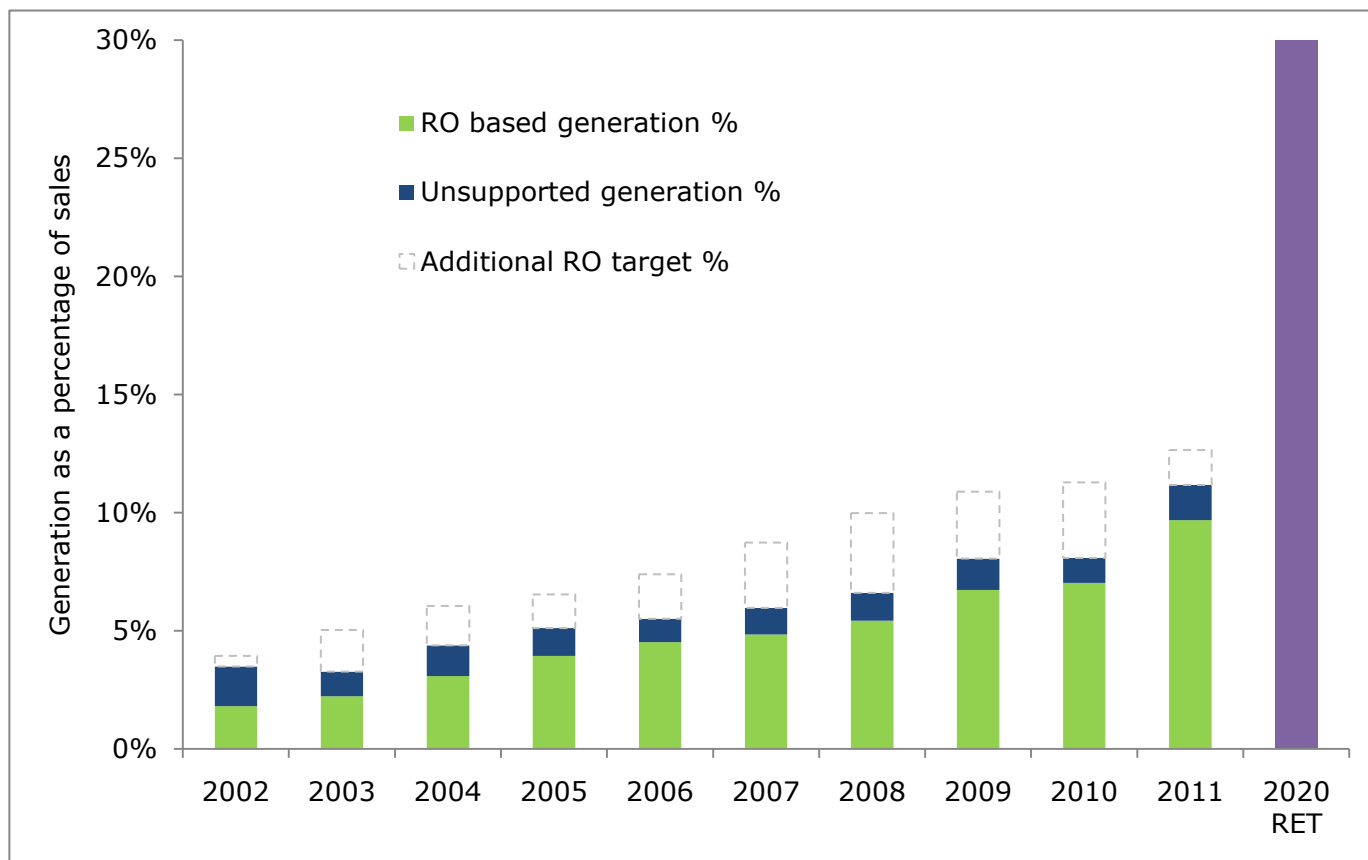


**Figure 4 - EU ETS carbon price (updated November 2012)**

Source: theice.com

The European Union Emissions Trading System (EU ETS) covers about half of the EU's carbon dioxide emissions and includes the power sector as well as much of heavy industry. Prices for 2015-2020 were introduced in August 2010. The sharp price decrease in June 2011 was due in part to discussions regarding new energy efficiency legislation in the EU which would increase the supply of (and therefore reduce demand for) carbon credit. Prices have been decreasing fairly steadily for the last year.

## Indicator 3: Renewable electricity generation

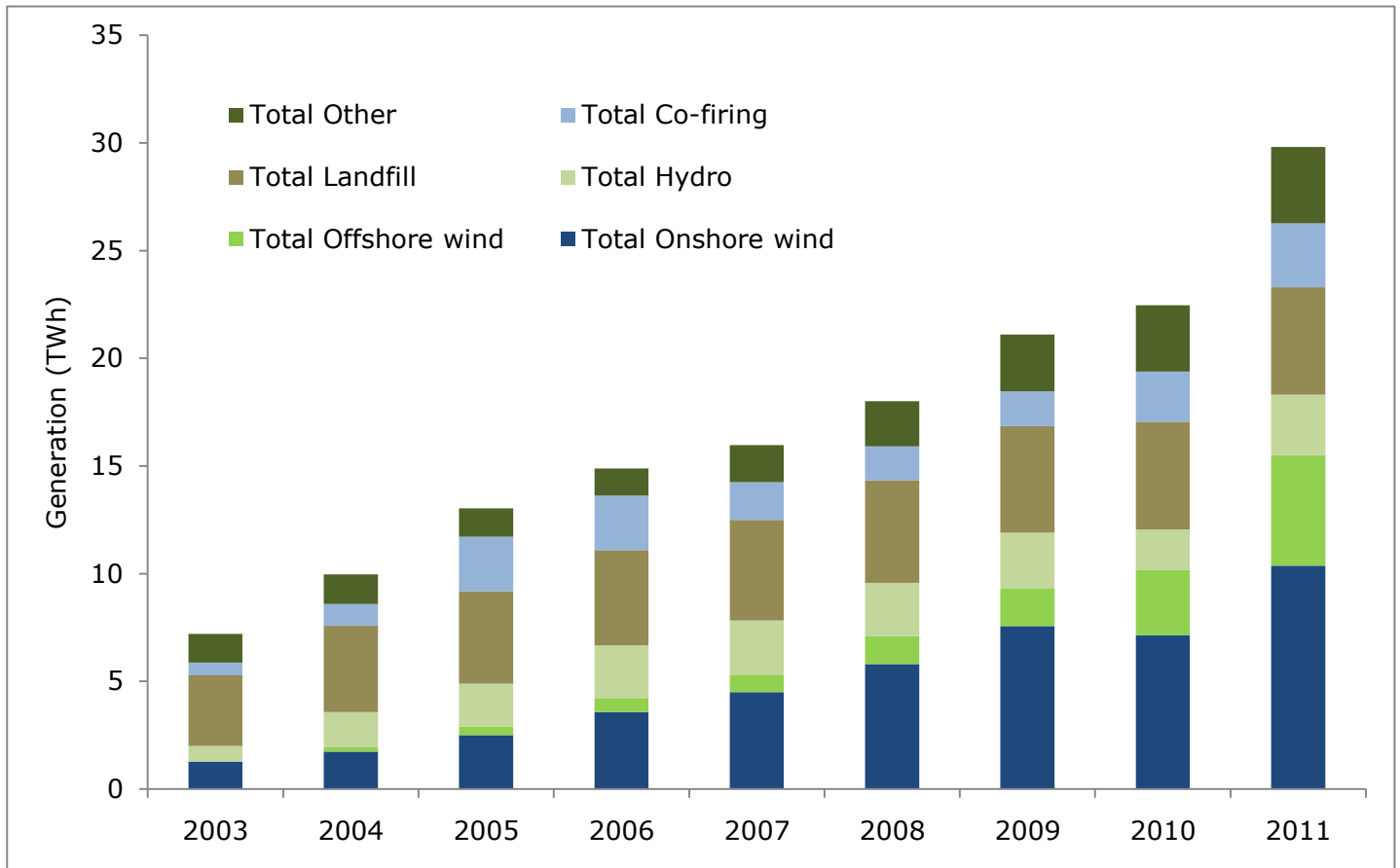


**Figure 5 - Renewable electricity generation (updated November 2012)**

Source: DECC DUKES

Over ten percent of UK electricity now comes from renewables. Renewable electricity generation supported by the Renewables Obligation (RO) is increasing year-on-year. Electricity generated from RO-eligible sources grew by 7.3 TWh in 2011, compared to 1.4 TWh in 2010.

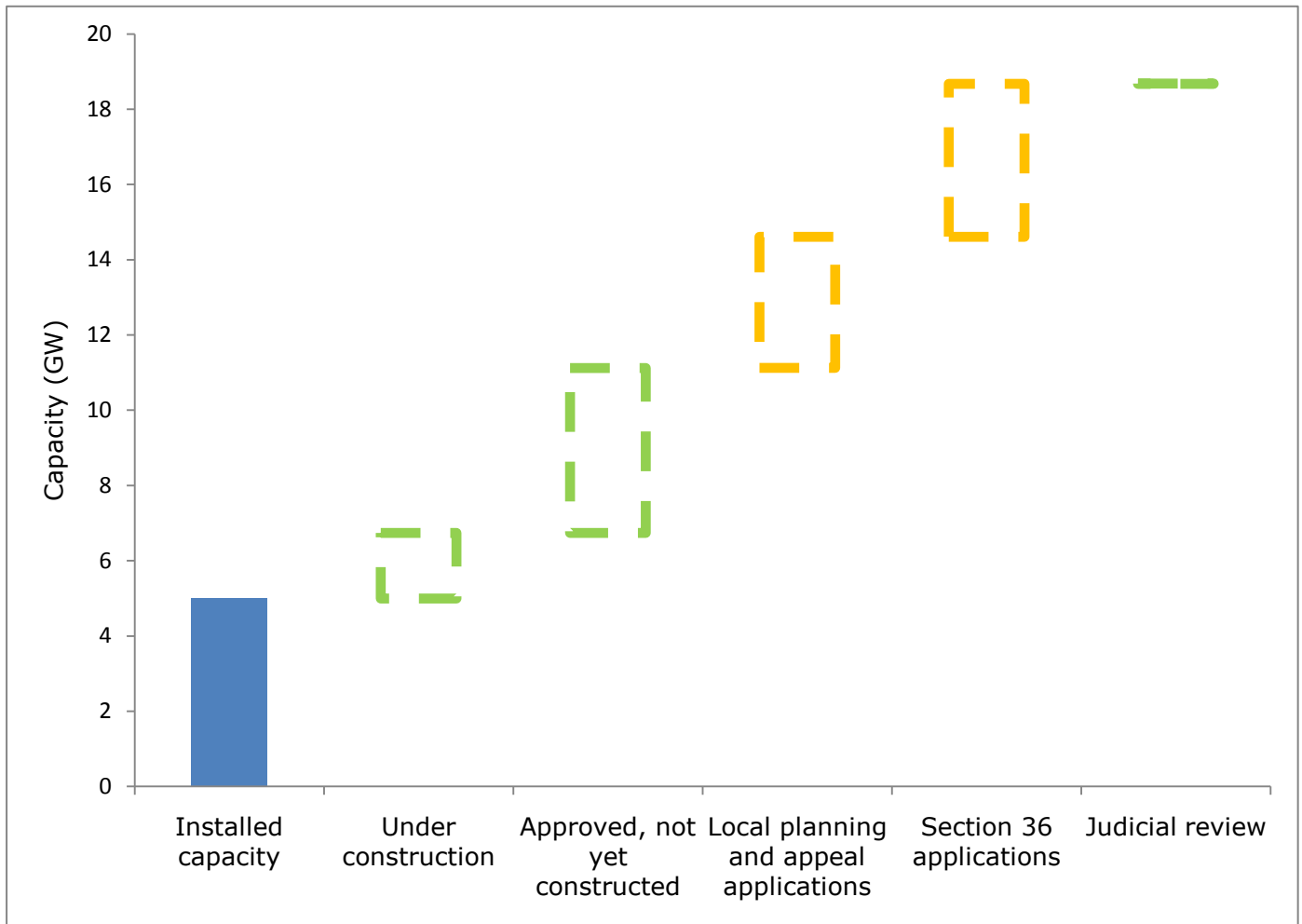
An indicative renewable energy target of 30% by 2020 is shown for context, but note that this applies to all energy, not only electricity.



**Figure 6 - Supported generation technologies (updated November 2012)**

Source: DECC

Wind is the fastest growing of the supported generation technologies; it has grown by 1206% since 2003 and accounted for 52 percent of renewable generation in 2011. Landfill generation has decreased slightly from its 2010 high of 5.1 TWh, but all other supported technologies increased generation in 2011.

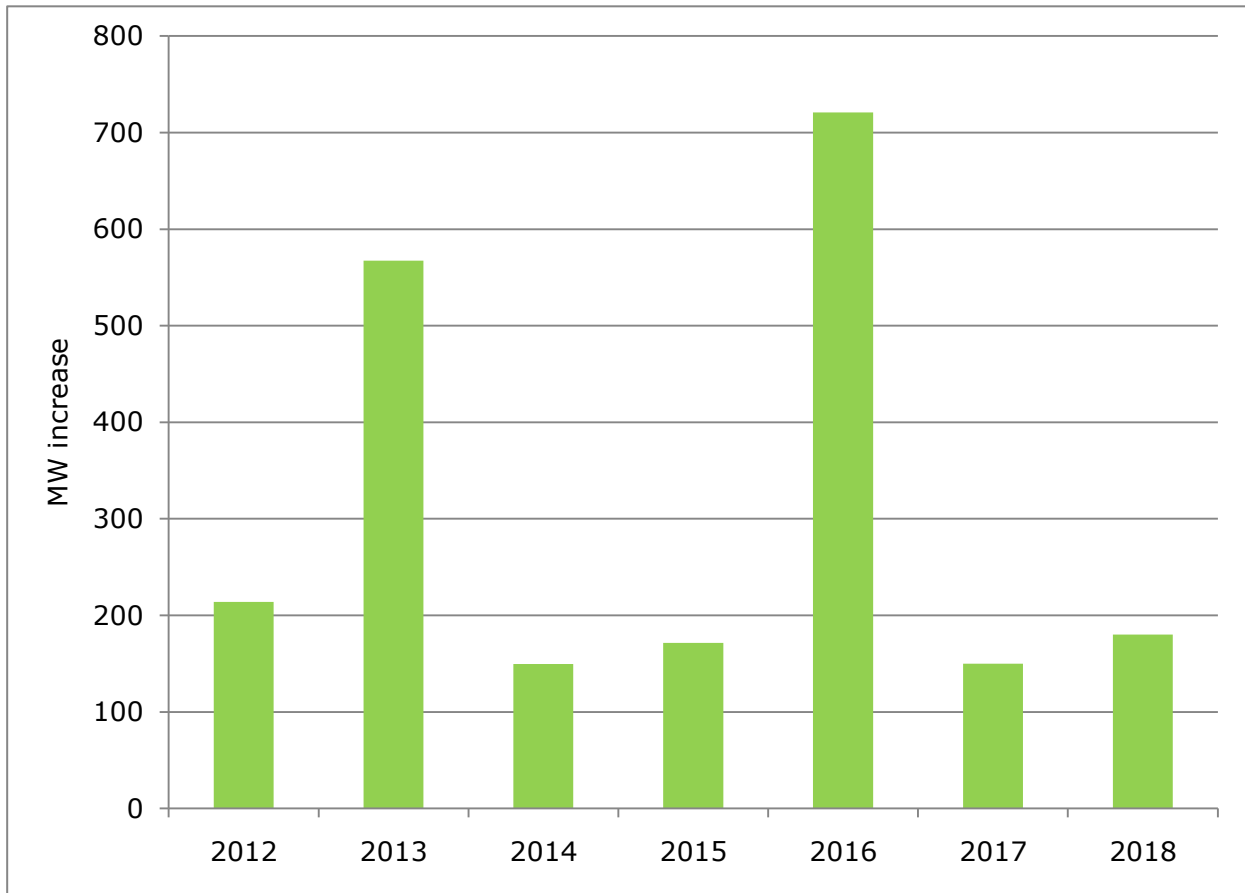


**Figure 7 - Onshore wind developments at July 2011 (updated November 2012)**

Source: Renewable UK

Installed onshore wind capacity, capacity under construction, and capacity at the planning and appeal stages have all increased from 2010-11. In particular, installed capacity has increased by 18% and there is 28% more capacity under construction than there was a year ago.



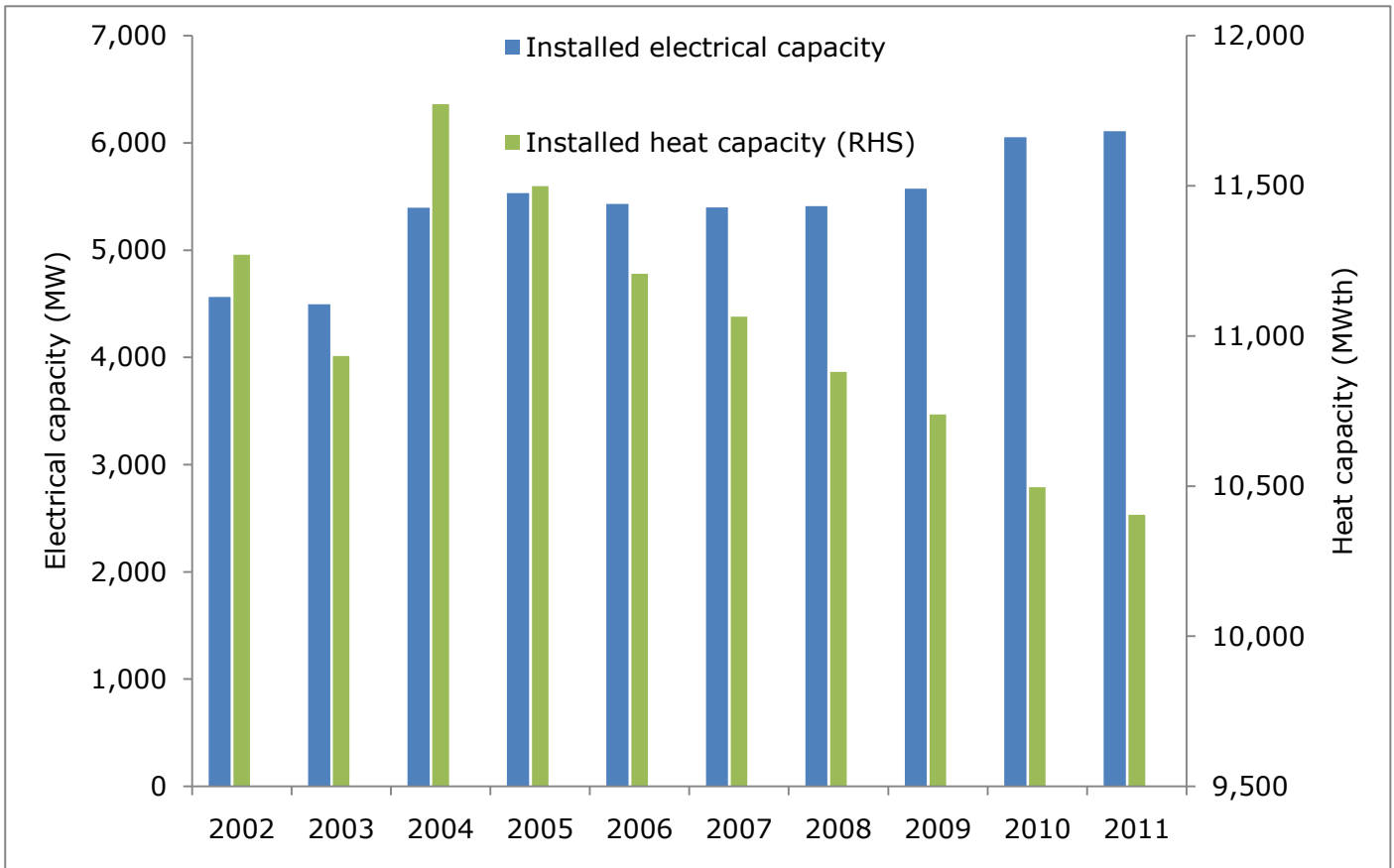


**Figure 8 – Required volume of grid upgrades for onshore wind generation in Scotland (updated November 2012)**

Source: National Grid

This graph shows the amount of onshore wind generation which has a contract with National Grid and has its consents to be built and connected in the period 2012 to 2018. This will help to enable the transmission of electricity from increasing onshore wind in Scotland. The surge in 2016 is due to increases at the Kergord grid supply point in Shetland.

## Indicator 4: Capacity for combined heat and power

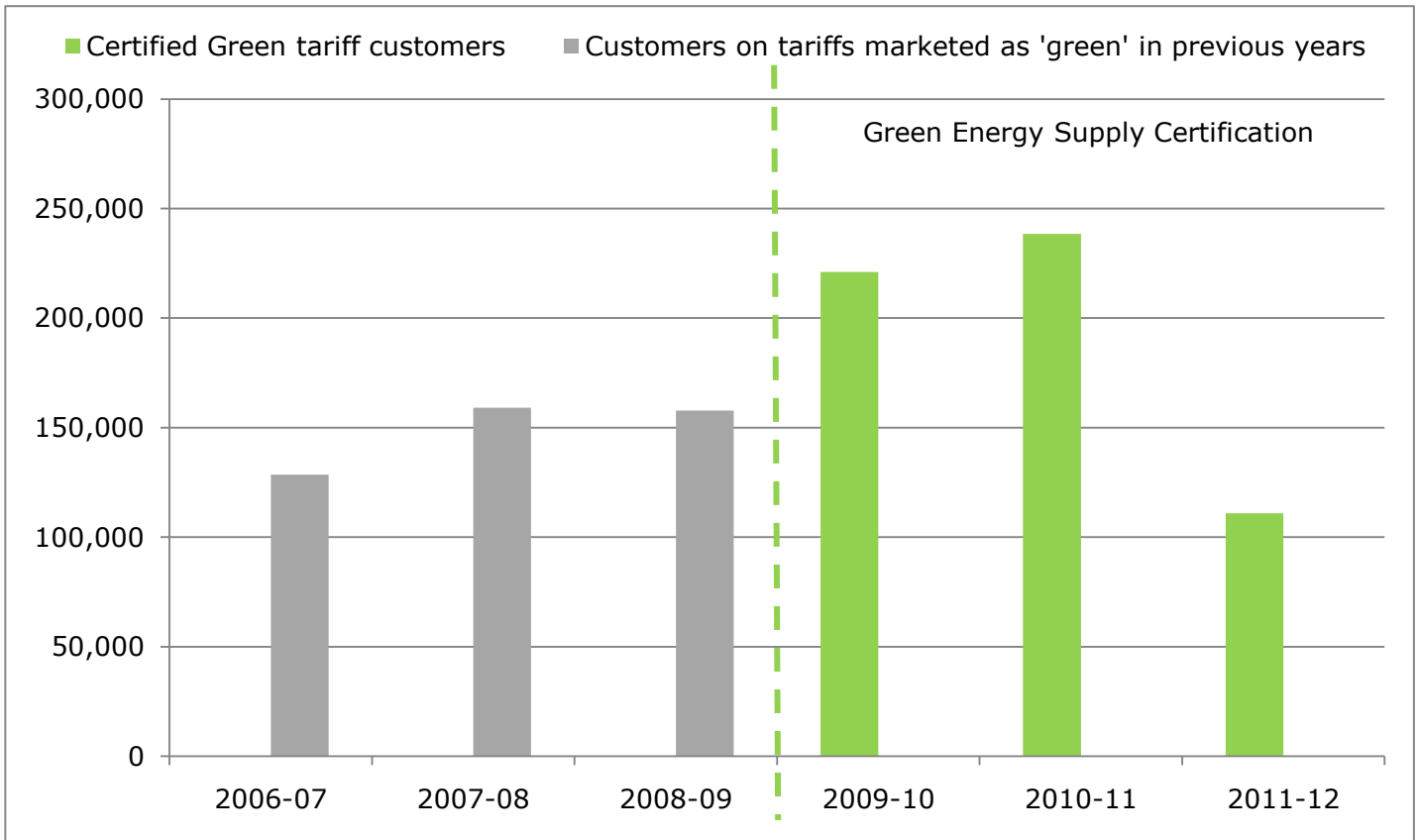


**Figure 9 - CHP capacity 2002 - 2011 (updated November 2012)**

Source: DECC DUKES

Over the last 13 years, a higher proportion of Combined Heat and Power (CHP) output has been in the form of electricity rather than heat. Over the last decade, heat capacity has fallen by 866MWth, whilst electricity capacity has risen by 1,546MW.

## Indicator 5: Green tariffs



**Figure 10 - Number of customers signed up to Certified Green Tariffs (updated November 2012)**

Source: energy suppliers

The graph shows the number of customer accounts signed up to a tariff marketed as having an environmental attribute over the last five years. In February 2010 the Green Energy Supply Certification Scheme and associated 'Green Energy Certified' label was launched. Since that point we have shown the number of accounts signed up to certified tariffs. The drop between 2010-11 and 2011-12 is due to the certification of two tariffs not being renewed.

Figures prior to 2011-12 have been revised due to receipt of more accurate information.

