ofgem **Theme 5**

Supporting improvement in all aspects of the environment

Sustainable Development Indicators

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 21st century.

The last theme is supporting improvement in all aspects of the environment. Beyond the climate change agenda, the gas and electricity industries affect the environment through other emissions and their impacts on our countryside and communities. We are committed to working with all stakeholders to ensure that we take these wider considerations into account in all of our decisions and provide advice where relevant.

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# Indicator 16: Impacts of electricity generation

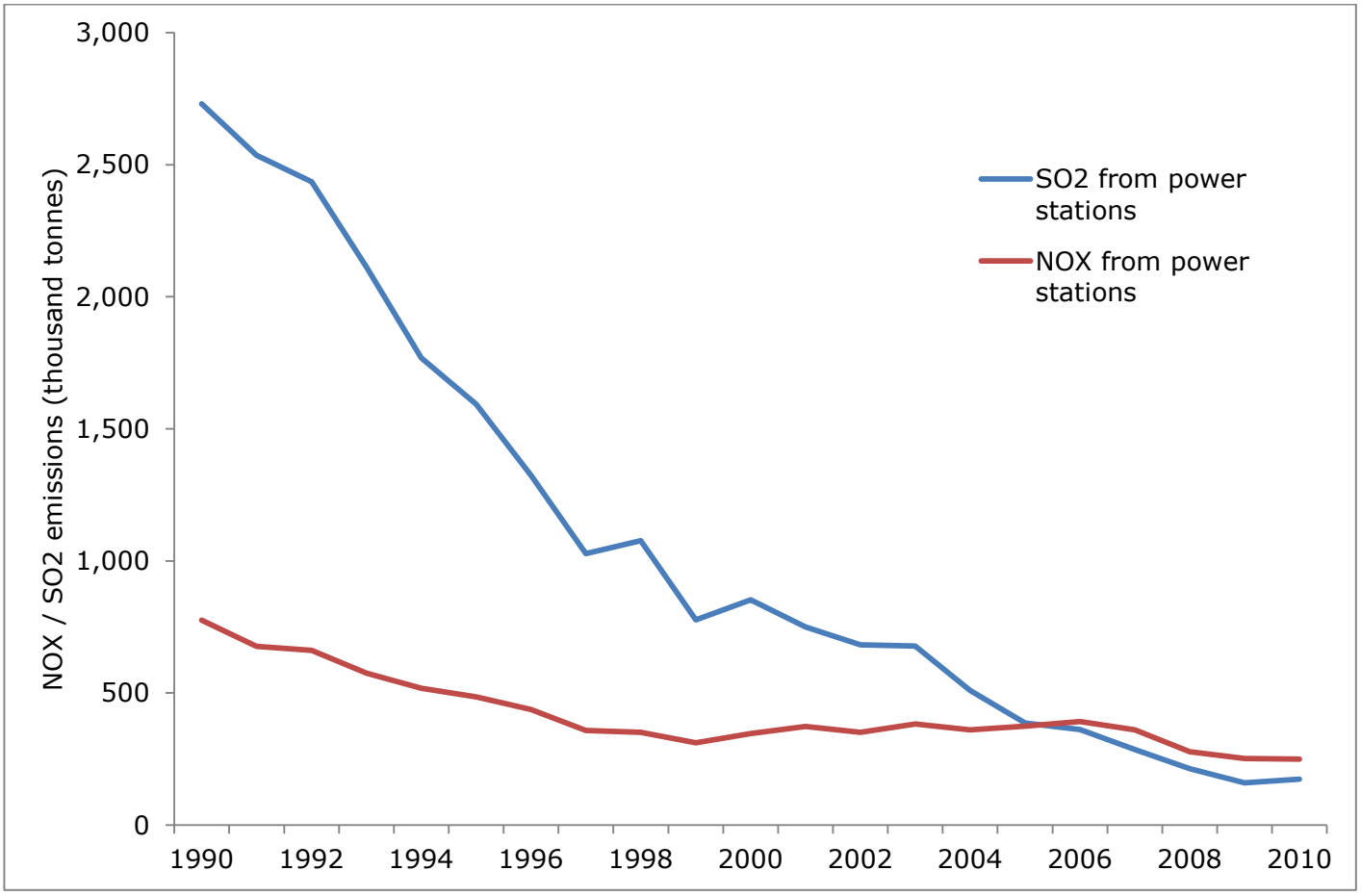


**Figure 28 - $NO_x$ and $SO_2$ emissions from power stations (updated February 2013)**
Source: Defra

$SO_2$ emissions from power stations have decreased to less than 6.4% of their 1990 values, and account for 43% of total UK $SO_2$ emissions. $NO_X$ emissions are now at their lowest levels since records began, and account for 23% of total UK $NO_X$ emissions. The legislative driver for this decreasing trend in $NO_x$ and $SO_2$ is the Large Combustion Plants Directive. This EU directive aims to reduce acidification, ground level ozone and particles throughout Europe by controlling emissions of sulphur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) and dust (particulate matter (PM)).

| Level of Waste | 2006 Inventory | 2007 Inventory | 2008 inventory | 2009 Inventory | 2010 Inventory | 2011 Inventory | 2012 Inventory | Change |
|---|---|---|---|---|---|---|---|---|
| Low-level waste | 28,200 | 196,000 | 242,000 | 281,000 | 66,000 | 113,000 | 157,000 | -215,000 |
| Intermediate-level waste | 90,200 | 92,500 | 96,200 | 100,000 | 94,300 | 96,700 | 98,900 | -5,700 |
| High-level waste | 1,890 | 1,730 | 1,700 | 1,720 | 1,620 | 1,520 | 1,430 | -100 |
| **Total** | **120,290** | **290,230** | **339,900** | **382,720** | **161,920** | **211,220** | **257,330** | **46,110** |

**Table 1 - Volume of radioactive wastes in stock (in cubic meters) (updated February 2013)**
Source: Nuclear Decommissioning Authority

This table shows the figures that have been calculated from the actual stock of conditioned waste in 2007 and increased by the estimated annual waste arising thereafter. The significant drop in low-level waste between 2009 and 2010 is due to the disposal of a large quantity of the 2009 stock. The increase in the volume since 2010 is due to the projected waste arisings from operations, and decommissioning and site remediation programmes being undertaken by a number of organisations.

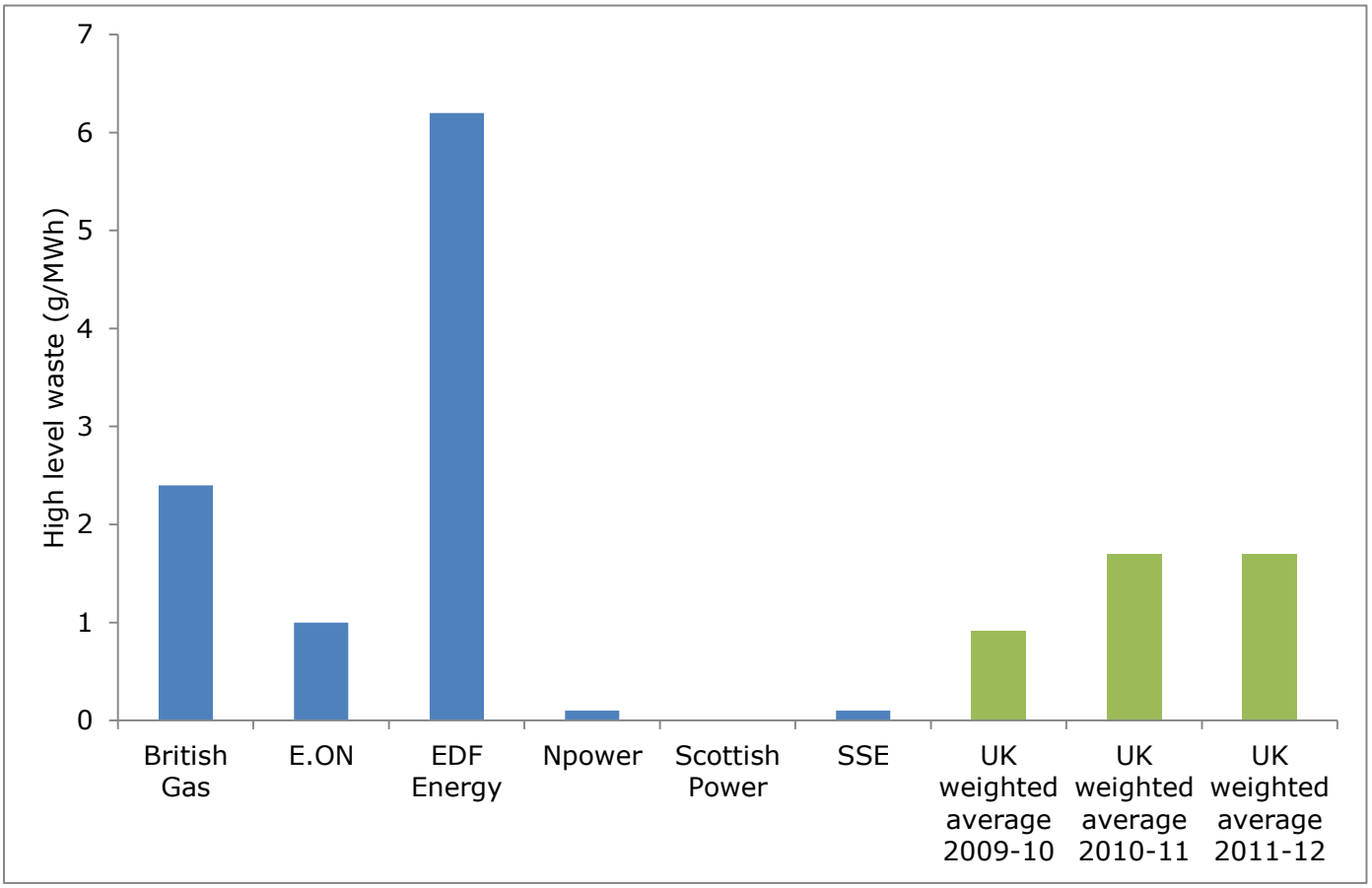


**Figure 29 - High level nuclear waste from energy suppliers and the UK average 2011-12 (updated February 2013)**
Source: electricityinfo.org

The chart above shows the proportion of high-level radioactive waste created per unit of electricity supplied by each of the 'Big Six' suppliers, as well as a weighted average across the UK. The UK weighted average increased significantly between 2009-10 and 2010-11, mostly due to the increase in EDF's creation of waste from 1.2 to 6.2 g/MWh, but it has remained the same into 2011-12.

# Indicator 17: Impacts of electricity and gas networks

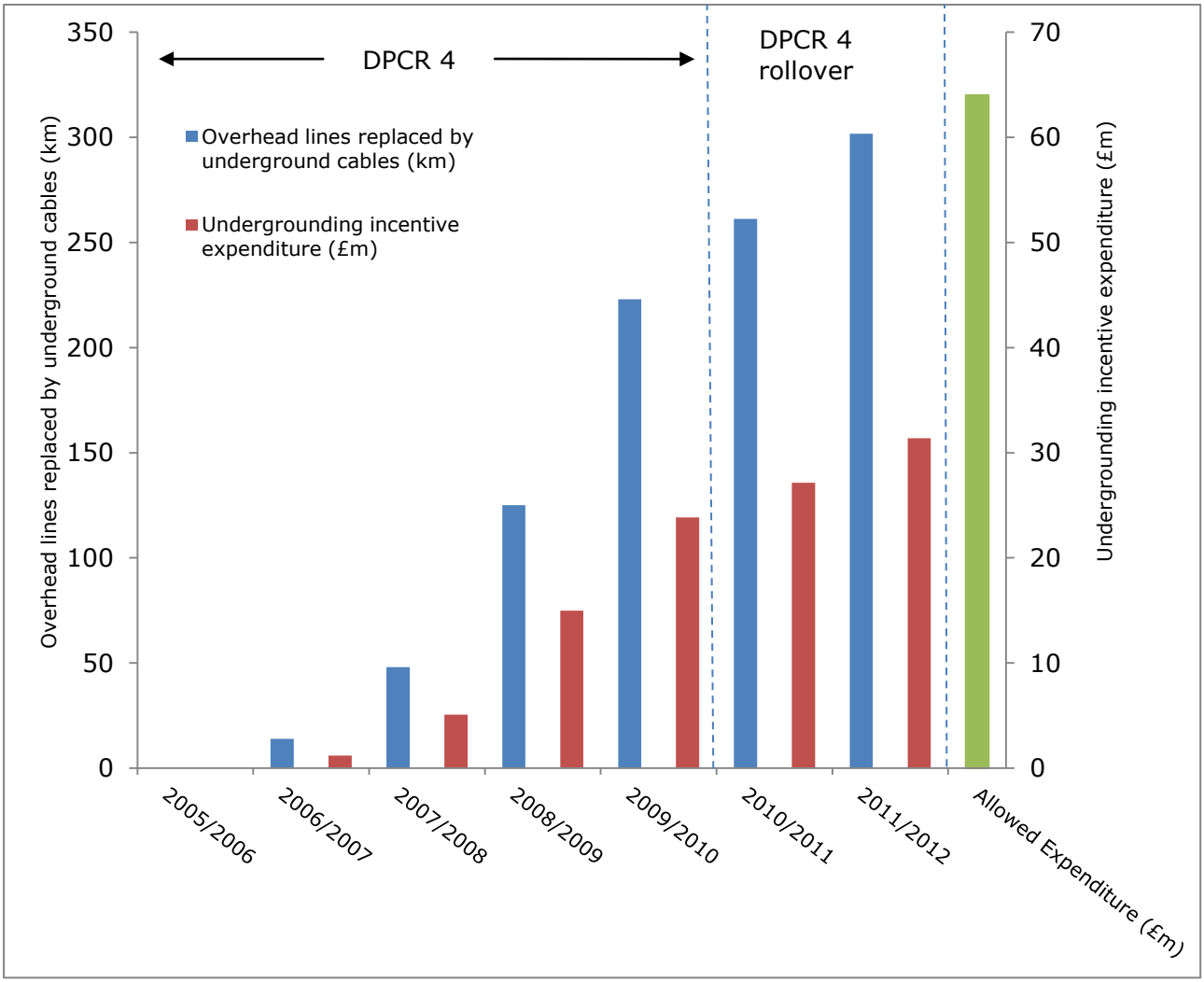


**Figure 30 - Cumulative Electricity distribution visual amenity incentive (updated February 2013)**
Source: Ofgem

The undergrounding displayed in this graph was incentivised by the fourth Distribution Price Control Review (DPCR4), under which distribution network operators (DNOs) were permitted to spend up to £64m on undergrounding cables. DPCR4 came to an end in 2010 and the new 2010-2015 price control arrangements, DPCR5, have retained the visual amenity incentive. In DPCR5 DNOs are permitted to spend up to £60.6m. Also, unused visual amenity allowance from DPCR4 can be rolled over, hence the spend of just over £3m in 2010/11.

| Network Type | Year | Fluid-filled cables in use (km) | Volume of fluid used to top-up cables (l) |
|---|---|---|---|
| Distribution | 2006/2007 | 6,600 | 451,939 |
| | 2007/2008 | 6,495 | 452,353 |
| | 2008/2009 | 6,475 | 372,303 |
| | 2009/2010 | 6,378 | 381,462 |
| | 2010/2011 | 7,967 | 399,235 |
| | 2011/2012 | 7,854 | 382,965 |
| Transmission | 2006/2007 | 982 | 43,132 |
| | 2007/2008 | 972 | 27,528 |
| | 2008/2009 | 971 | 34,617 |
| | 2009/2010 | 939 | 26,519 |
| | 2010/2011 | 918 | 8,786 |
| | 2011/2012 | 901 | 14,139 |
| Total | 2006/2007 | 7,582 | 495,071 |
| | 2007/2008 | 7,467 | 479,881 |
| | 2008/2009 | 7,446 | 406,920 |
| | 2009/2010 | 7,318 | 407,981 |
| | 2010/2011 | 8,885 | 408,021 |
| | 2011/2012 | 8,755 | 397,104 |

**Table 2 - Use of insulating oil in fluid-filled cables (updated February 2013)**
Source: Ofgem

From 2009 onwards for distribution there has been quite a large increase in the length of fluid-filled cables. This is due to a more thorough audit of their fluid filled cable population last year. There has also been an overall decrease since 2006/2007 in the volume of top-up fluid used by transmission companies; this is because sections which were leaking in previous years have now been repaired or removed. The general trend is that the total length of fluid-filled cables in use is increasing but the total volume of fuid used to top-up cables is decreasing.