

# nuclear sector plan

2011 Environmental  
Performance Report  
Summary



We are the Environment Agency. We protect and improve the environment and make it **a better place** for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

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## Foreword

This is the seventh annual report on the environmental performance of the nuclear industry in England and Wales. It describes the performance of the industry measured against the objectives and indicators set out in the Nuclear Sector Plan.

The Nuclear Sector Plan sets out environmental challenges facing the nuclear industry over the next few years, and how we can work together to address them. It encourages operators to consider environmental issues and to improve their environmental performance beyond the minimum standards of regulation. It also commits the Environment Agency to continue our work to be a 'better regulator', focusing on significant issues and streamlining regulation as appropriate.

The plan is currently being revised and updated to reflect continuing progress against objectives and new developments in the nuclear industry, particularly in the areas of environmental leadership, legacy waste issues and sharing best practice. We are delighted that the industry continues to support the use, and further development of, the Nuclear Sector Plan. We want the industry to use it as a basis for regular dialogue between operators, and to encourage greater sharing of lessons learned and innovative thinking in order to make further improvements in environmental performance.

This report was written in 2012, based on 2011 data supplied by operators. The industry took action in 2011 in response to the accident at the Fukushima nuclear power plant in Japan, which was caused by a large earthquake and tsunami. Operators of all licensed nuclear sites in the UK carried out a number of safety investigations at their sites, commonly referred to as the 'stress tests'. The tests were introduced throughout the European Community following the Fukushima accident. They involved reassessing safety margins for each site in the light of extreme natural events. The process identified enhancements that will strengthen resilience further and will provide a positive contribution to the nuclear industry in the UK.

The industry has continued to perform and progress well against the Nuclear Sector Plan objectives in 2011, while at the same time maintaining good relationships and sharing best practice.

Logos of organisations participating in this initiative are shown below.

### Ed Mitchell - Environment Agency



## Summary

This report describes the environmental performance of the nuclear industry in England and Wales. It measures performance against the objectives and performance indicators set out in Issue 2 of the Nuclear Sector Plan, published in July 2009. The data are provided by the operators of the sites or are taken from national inventories. The operators as a group judge their performance against the objectives. Overall, the environmental performance of the industry during 2011 was good, with improvements made in a number of areas. In this summary we highlight how the industry performed against its eight main environmental objectives during the year, and since 2005 when we started reporting. The 'traffic light' indicates the status of each objective as follows:

-  Poor performance
-  Areas where performance is adequate
-  Good performance
-  Positive trend in performance since 2005
-  Negative trend in performance since 2005

<b>Minimise the amount of natural resources used</b>		
Although energy generation and fuel reprocessing increased in 2011, there was no substantial change in energy and water use. In 2011 the industry used just under seven million megawatt hours of electricity (two per cent more than in 2010) and just over 13 million cubic meters of water (almost the same as in 2010). Energy use has fluctuated since 2005 and water use has seen a decline.		
<b>Recognise the impact of climate change</b>		
In 2011 the nuclear industry in England and Wales generated nearly 49 TWh of electricity, which if produced by fossil fuels would have released around 30 million tonnes of CO <sub>2</sub> . Compared to 2010, greenhouse gas emissions (measured as CO <sub>2</sub> equivalent) from the nuclear industry as a whole increased by 23 per cent, as a result of decreased operating efficiency at some major plant and changes to the way in which the emissions were calculated. However some sites substantially decreased their CO <sub>2</sub> emissions in 2011.		
<b>Minimise discharges to air and water</b>		
Discharges to air and water remain low, with several sub-sectors of the nuclear industry already achieving their 2020 targets in the UK Discharge Strategy. Some emissions increased in 2011 (discharges of beta/gamma, tritium and Technetium-99 activity to water and alpha and beta/gamma activity to air). Some emissions decreased (discharges of alpha activity to water and emissions of tritium to air). The increases are mostly due to an increase in fuel reprocessing in 2011. Overall discharges generally remain low in comparison to 2005 levels.		
<b>Minimise and manage solid waste</b>		
During 2011 the industry avoided sending 87 per cent of its Low Level Waste (LLW) to the national repository - compared to 78 per cent in 2010. Operators continue to recycle a very high percentage of their inert and non-hazardous wastes. Progress in the retrieval, conditioning and packaging of 'legacy waste' and other Intermediate Level Waste (ILW) is slow (it has remained below 25 per cent since 2005). New facilities are currently being built at Sellafield to facilitate processing of intermediate level wastes.		
<b>Demonstrate sound environmental management and leadership</b>		
Nuclear operators continue to maintain robust environmental management arrangements at their sites.		

<b>Manage land quality and biodiversity</b>		
The number of sites with land quality management plans has increased since 2010. Biodiversity plans are being implemented at most nuclear sites, with a number of operators achieving biodiversity benchmarks.		<b>+</b>
<b>Improve or maintain a very high level of regulatory compliance</b>		
The nuclear industry continues to maintain a high standard of regulatory compliance, with far fewer incidents than other regulated sectors. The total number of incidents and breaches increased in 2011, but most had no environmental impact and the remainder had only minor environmental impact. There were no incidents or breaches with major or significant environmental impact.		<b>—</b>
<b>Achieve better regulation</b>		
The Environment Agency continues to make good progress against each of its improvement goals. In 2011 we drafted Site Environment Reviews for all nuclear sites, to increase transparency in how we regulate. We introduced a series of themed audits at nuclear sites, beginning with a focus on asset care and maintenance. Together with the Office for Nuclear Regulation and the Scottish Environment Protection Agency (SEPA), we published our joint guidance to industry on 'The Management of Higher Activity Radioactive Waste on Nuclear Licensed Sites'. We also made progress on MCERTS standards for monitoring of liquid effluent flow and radioanalysis of waters. Feedback to operators within two months of notification of an event has increased to 70 per cent.		<b>+</b>

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