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Department
for Environment
Food & Rural Affairs

Improving air quality in the UK

Tackling nitrogen dioxide in our towns and cities

List of UK and national measures

December 2015

Llywodraeth Cymru
Welsh Government

DOE
Department of
the Environment
www.doeni.gov.uk

The Scottish
Government
Riaghaltas na h-Alba

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Any enquiries regarding this publication should be sent to us at

National Air Quality Team
Defra
Area 2C, Nobel House
17 Smith Square
London SW1P 3JR
Email address: *air.quality@defra.gsi.gov.uk*

Published by the Department for Environment, Food and Rural Affairs

Introduction

1. This document sets out UK measures that have and will help to achieve the nitrogen dioxide (NO_2) limit values in the EU Ambient Air Quality Directive (2008/50/EC)[1] in the shortest possible time.

2. This list of measures includes those in the UK overview document which should be read alongside the air quality plans themselves which cover the 38 UK air quality zones still to meet the NO_2 limits, and the technical report detailing the assessment methodology for the plans. All of these documents can be viewed on the Government publications website[2]. Together, they form the basis of the UK's submission to the European Commission in December 2015 setting out how the UK will meet the NO_2 limit values in the shortest time possible. The table of national measures submitted to the Commission contains slightly more detail[3], the key information is set out below.

3. The measures in this document cover either whole or part of the UK or are specific to England, Scotland, Wales or Northern Ireland. The measures listed have been introduced since the NO_2 limit values were agreed in 1999 and also include measures that have either just taken effect or will be implemented shortly. Where possible, costs of the measures have been included and efforts have been made to quantify their impacts.

4. The table is structured with UK measures first, then England, Wales, Scotland and Northern Ireland specific measures. These are divided into the following categories:

UK Measures

- Freight
- Rail
- Buses
- Shipping
- Sustainable Travel
- Local Authority Regulation
- Low Emission Vehicles
- Roads
- Climate Change Measures
- Cleaner Transport Fuels
- Vehicle Standards and Testing
- Communications Measures
- Research

England Only Measures

- Planning
- Local Authority Regulation
- Buses
- Sustainable Travel
- Roads

[1] *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:EN:PDF*

[2] *www.gov.uk/government/publications*

[3] Additional detail separated out where available on: indicators, NO_2 mean concentrations and comments, administrative level, spacial scale and implementation status.

Wales Only Measures

- Planning
- Local Authority Measures
- Climate Change Measures
- Roads
- Sustainable Travel
- Buses
- Freight
- Rail

Scotland Only Measures

- Policy
- Low Emissions Vehicles
- Sustainable Travel
- Local Authority Regulation

Northern Ireland Only Measures

- Sustainable Travel
- Low Emissions Vehicles

List of UK and national measures implemented or planned

Note that these are additional to implementation of existing and planned EU directives/regulations.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
UK MEASURES					
FREIGHT					
Modal Shift Revenue Support	2010-2015	Grant to offset the greater operating costs of transport by rail or inland waterway, compared to road, in order to encourage modal shift.	England - Approx. £87m 2010 – 31 March 2015.	Increasing volumes of traffic converting from road to rail / water. Grant paid only on delivery. Some routes have now become economically viable and no longer qualify for grant.	Together with the Waterborne Freight Grant, the MSRS Grant helps to remove over 800,000 lorry journeys from Britain's roads annually, saving more than 120,000 tonnes of carbon. Air quality benefit not quantified but improvements in air quality expected.
Rail Environmental	2007 –2010	Grant to offset the greater	England -	Increasing volumes of traffic	Not quantified

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Benefits Procurement Scheme		operating costs of transport by rail, compared to road, in order to encourage modal shift.	2007/08 approx £17m. 2008/09 approx £18m. 2009/10 approx £19m.	converting from road to rail / water with services becoming more productive and competitive over time. Grant paid only on delivery. Around 850,000 lorry journeys each year removed from the road. This is likely to significantly reduce emissions on roads and improve air quality.	but improvements in air quality expected.
Company Neutral Revenue Support / Track Access Grant	Up to 31 March 2007	Grant to offset the greater operating costs of transport by rail, compared to road, in order to encourage modal shift.	Approx. £145m for both schemes combined.	Encouraged freight traffic to convert from road to rail / water. Grant paid only on delivery. Around 825,000 lorry journeys / year removed from road. This significantly reduced emissions on roads and improved air quality.	Not quantified but improvements in air quality expected.
Waterborne Freight Grant	2009-2015	Grant to offset the greater operating costs of transport by coastal and short sea shipping, compared to road, in order to encourage modal shift. Up until 31 March 2010, this grant also covered inland waterways which since 1 April 2010	Approx.£1.5m 2010-2015.	Increasing volumes of traffic converting from road to water and for these water services to be viable without grant support within 3 years. Grant paid only on delivery. Approximately 35,000 fewer lorry journeys between 2010 and 2015	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		come under the Mode Shift Revenue Support scheme.			
Freight Facilities Grant	1990-2010 England, 1990 onwards Scotland and Wales.	Grant to offset the capital costs of rail or water freight handling facilities necessary to enable freight to move by rail or water, rather than by road. The scheme closed in England in 2011.	England – most recent spend 2007-08 £0.7m 2008-09 £0.5m 2009-10 £1.2m Since 2001 the Welsh Government has provided £4.8m.	Freight to be moved by road is instead taken by rail or water using the new facilities. Number of HGV journeys removed differs by scheme. Each scheme is monitored over a set period (usually 10 years) post grant being provided.	Not quantified but improvements in air quality expected.
CleanUp Programme England and Scotland	England 2000- 2006.	The CleanUp initiative provided a number of incentives for business to improve environmental performance by offering government grants to either fit emission reduction technologies or to convert large diesel vehicles to an alternative fuel. Grants of up to 75% were available to fit emission reduction technology or to convert diesel vehicles to	£38.5m	Funded 13,770 vehicles through the scheme which delivered reductions in emissions of NOx and Particulate Matter.	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		CNG. The CleanUp initiative also established block grants with trap manufacturers, which helped speed up the process of applying for a grant and reduced the administrative burden on hauliers.			
Quiet Deliveries Demonstration Scheme UK except Wales	Jan 2010 – March 2011	Retail sector. Research to evaluate the scope for benefits for the local environment from rescheduling deliveries out of peak periods, based on six trial locations.	Approx. £256,000	Expect environmental benefits in terms of reduction in congestion and therefore improved air quality and also noise. The value of these improvements in health terms would be worth at least double the cost to Government.	Not quantified but improvements in air quality expected
Guidance on use of Quiet Deliveries	2013-2014	Publication by the Department for Transport of guidance to local authorities, retailers, hauliers, residents and construction firms on use of quiet deliveries of goods outside peak delivery periods.	£49,000	Expect environmental benefits in terms of reduction in congestion and therefore improved air quality and also noise. There should also be improved delivery times for hauliers and greater availability of goods on shelves for residents.	Not quantified but improvements in air quality expected.
“Delivering the Goods” guide and toolkit	2006-07	Retail sector. Initial provision of guidance on	Not available because	Was taken forward by Freight Transport	Not quantified but

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		how to enable deliveries out of peak periods	measure is too far in the past.	Association and underpinned "Silent Approach" developed by FTA and Noise Abatement Society. "Silent Approach" trial in Wandsworth removed approx 700 lorries / year from peak traffic, with consequent reductions in congestion-related air pollution.	improvements in air quality expected.
Freight Consolidation Centre (FCC) research study	Study reported in July 2010. Also see section on Wales only measures.	FCCs are distribution centres, situated close to a town centre, shopping centre or construction site, at which part loads are consolidated and from which a lower number of consolidated loads are delivered to the target area.	Study cost the Department for Transport (DfT) £43,000.	The FCCs can provide significant economic and social benefits to local areas by reducing the overall number of lorry journeys on the "final mile" and thus reducing congestion and emissions and improving air quality. A DfT study identified potentially significant AQ benefits – scale dependent on location, nature of consolidation centre and manner in which "final mile" deliveries affected. DfT has published a report to assist	Not quantified but improvements in air quality demonstrated by trials.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
				industry and local authorities in considering the application of FCCs as part of their strategic planning process. This is available at: http://webarchive.nationalarchives.gov.uk/20121107103953/http://www.dft.gov.uk/publications/freight-consolidation-centre-study/	
Reduced Pollution Certificate (RPC) Scheme	1999-2030	Tax incentives to tackle pollution from road traffic. Operators of Heavy Duty Vehicles whose vehicles had either been modified by fitting an approved device to the exhaust system, had been re-engineered to a higher environmental standard or had been fitted or converted to run on petrol or gas were potentially eligible to be licensed in new taxation classes with lower (£500 less) rates of Vehicle Excise Duty (VED). The environmental standard required for licensing in the new taxation class was changed on 5 January 2001	Not quantified	Reductions in VED are an incentive for operators to use lower emission vehicles. Lower emissions should lead to an observed decrease in pollutant concentrations for those pollutants being regulated under the scheme.	Not quantified but should result in reduced emissions from diesel vehicles, and subsequent improvements in air quality.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		to fall in line with European Emissions Standards, and different procedures relate to vehicles first tested for compliance with the scheme before and after that date. To obtain a Reduced Pollution Certificate after January 2001 a vehicle had to be constructed or adapted so as to achieve a considerably higher standard of particulate matter or gaseous pollutant emissions than the standard required by the EU emissions directive in force at the time of manufacture.			
Trial of longer semi-trailers (LSTs)	2012-2022	A 10-year study to determine the environmental and economic benefits of using two length variants of LST and their benefit for reducing greenhouse gas emissions. The latest annual report of the trial was published in July 2015.	Approx £406,000 covering 2012-2016 of the trial (so past and future spend)	To determine the environmental and economic benefits of using two length variants of LST.	Some 3000 tonnes of carbon emissions are expected to be saved over the course of the trial from fewer lorries being needed to transport the same volume

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
					of goods. Reduced air quality pollutant emissions are also expected.
RAIL					
Passenger rail subsidy	1991/2 onwards.	The Government heavily subsidises rail travel, keeping fare prices and freight costs down, and thereby encouraging modal shift to rail.	Government support increased from approx £1.5bn to £5bn from 2000-2006.	By subsidising rail fares more passengers will choose this mode of transport if it offers savings over the use of private vehicles. Removing vehicles from the road reduces emissions, congestion and improves air quality.	Not quantified but improvements in air quality expected.
Further electrification of the railway network UK Not NI	2011-2018	Electrification of lines in England, Wales and Scotland including the Great Western Main Line. Enables replacement of diesel trains.	Part of the Government's £38bn investment programme to 2019 to maintain, operate and enhance our rail network.	To enable faster, more reliable electric trains to run on the line. No air pollutants directly emitted.	Air pollution reductions in and around major urban train stations along route as diesel trains are replaced.
Rail electrification programme - UK	2009-2023	The UK Government's commitment to electrification of the rail system to	Part of the Government's £38bn	Electrification of the railways to reduce emissions.	Electric trains are zero emission at

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		progressively replace diesel trains with electric equivalents On 30 Sept 2015, the Government announced that work to electrify TransPennine and Midland Mainline railways will resume as part of Sir Peter Hendy's work to reset Network Rail's upgrade programme. This is in addition to the ongoing electrification of the Great Western Main Line.	investment programme to 2019 to maintain, operate and enhance our rail network.		point of use
Intercity Express programme	2017-2020 Trains will come into service from 2017 on the Great Western Main Line and from 2018 on the East Coast Main Line. All trains will be in service by 2020.	An investment aimed at switching to low emission diesel engine power trains, by introducing state of the art electric and bi-mode trains to train fleet	The overall Intercity Express Programme has a value of £5.7bn	To reduce emissions through replacing trains.	The electric versions will be zero emission at point of use. The bi-mode trains will be zero emission when operating on the electrified rail network.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Future Railway Programme	2012-2019	A programme sponsored by the UK Government to support innovative rail projects including those that reduce carbon emissions and benefit air quality. For example, a recent battery powered train project demonstrated the feasibility of enabling electric trains to run on non-electrified lines.	Current DfT annual investment of about £16m though this is supplemented by other public and private sector contributions	To Reduce the carbon footprint of the railways	Not quantified but improvements in air quality expected.
BUSES					
Free bus travel for older and disabled people	2001 onwards in England and NI 2002 onwards in Wales 2006 - Scotland wide scheme	Eligible older and disabled people entitled to a bus pass giving access to free local bus travel anywhere in the country of issue. Over eleven million people are eligible for the concession. In Northern Ireland, eligible older and disabled people are entitled to a bus pass (SmartPass) which gives them access to free bus travel anywhere in NI. Over 280,000 people are eligible for the concession in NI. In Wales, disabled people who satisfy the issuing local authority that they require	£1bn on travel concessions - the majority from Central Government. Wales - approximately £69 m per annum. Northern Ireland- £32m. Local authorities receive funding from Government for the statutory scheme through Formula Grant	A 35% increase in bus travel – evidence taken from a Passenger Focus Research Report. By increasing public transport usage among older and disabled people the scheme contributes to reducing congestion and emissions.	Not quantified but improvements in air quality expected from reduction in car use. Welsh programme has delivered 48m journeys a year

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		extra help to travel by bus, may also apply for an escort pass to allow the escort to travel free when accompanying the disabled person. From 1 April 2011 eligibility was extended to seriously injured service personnel and veterans who are resident in Wales.	from the Department for Communities and Local Government (CLG) (not separately identifiable) and Special Grant from DfT of £223m in 2010/11.		
Low Emission Bus Scheme - England and Wales	Funding split across three years 2016/17, 2017/18 and 2018/19	A fund to help bus operators take up cleaner buses by bidding for low emission buses and supporting infrastructure	£30m has been provided for bus operators in England and Scotland	To support bus operators to reduce the emissions of their fleets	Not quantified but improvements in air quality expected
SHIPPING					
Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008	2000 onwards	Survey and inspection work, met through fees charged to the ship owner, is carried out to ensure implementation of the regulatory requirements. Applies to UK-flagged and foreign-flagged merchant ships.	No cost	Reduction in marine air pollution by NO_X, SO_X and ozone depleting substances, in line with international commitments (contained in Annex VI to the MARPOL Convention). Health benefits, especially to coastal and port communities.	Reduction in marine air pollution by NO_X, SO_X and ozone depleting substances. The Impact Assessment for the

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					Merchant Shipping Regulations estimated that implementing MARPOL Annex VI will result in 20 fewer deaths and a £26 million reduction in attendant economic loss annually.
Selective Catalytic reduction and exhaust gas recirculation in ships	A decision about when the North Sea becomes a NOx emission control area is expected shortly. Until then, we cannot confirm the dates.	Technologies directed at the shipping industry to enable engines to comply with MARPOL NOx Tier III standards	Not quantified.	Reduction in marine air pollution by NO_X	Not quantified but benefits in air quality expected.

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SUSTAINABLE TRAVEL					
Local authority Cycle Training Grants	2006/7 – 2010/11	Bikeability Level 2 is an approved cycle training course normally undertaken by children in years 5-6 (ages 10-11).	2006/7 0.66m 2007/8 1.19m 2008/9 2.99m 2009/10 5.53m 2010/11 6.04m Grant supplements LA funding of training.	Encourages children to cycle – and therefore provides an alternative transport form and modal shift. Health benefits from exercise. Reduces car and bus travel to school and therefore reduces emissions and concentrations of air pollution.	Not quantified but improvements in air quality demonstrated by trials.
Cycle City or Towns	2005/6-2010/11	Pioneer innovative ways to increase cycling in 18 cycle city and towns.	2005/6 1.36m 2006/7 2.95m 2007/8 3.18m 2008/9 9.58m 2009/10 26.8m 2010/11 18.99m Departmental funding is match funded by local authorities.	Encourages more people to cycle and therefore provides an alternative transport form and modal shift. Reduces car travel and therefore reduces emissions and concentrations of air pollution.	Not quantified but improvements in air quality expected
Bike and Rail Funding	2009 - 2010/11	Cycle access, improved cycle parking at rail stations and cycle hubs.	£14m package was launched to transform facilities for cyclists at rail stations.	Encourages more people to cycle and use train. Reduces car travel and therefore reduces emissions and concentrations of air pollution.	Not quantified but improvements in air quality expected.
Finding New Solutions	2009-2010/11	Grants to large employers, local authorities and tourist	£7.9m over two years for 3	Encouraging more people to cycle for everyday journeys	Not quantified but

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Work and Leisure projects		destinations. Work projects demonstrate the interventions that encourage staff to cycle to and from work. Leisure projects explore whether it is possible to convert leisure cyclists to everyday cyclists.	leisure projects and 9 work projects.	thereby reducing congestion, pollution and improving people's health through exercise.	improvements in air quality expected.
Local Sustainable Transport Fund - UK	2011-2015	Fund for local authorities to invest in measures that deliver economic growth and emissions reductions. 95 of the 96 projects funded through the LSTF between 2011 and 2015 contained an element of cycling or walking with some of the funding directly supporting Bikeability cycle training	Over £600m was committed between 2011 and 2015 (including a match funding of over £1bn of investment). Additional £64.5m in revenue funding has been committed for 2015-2016 supporting about 44 local authorities	Designed to tackle air pollution and reduce NOx emissions and create local growth; Fund has supported 96 projects across 77 local authorities between 2011and 2015 to increase use of buses, cycling walking etc**.**	Not quantified but improvements in air quality expected.
Incentivising cycling and walking - UK	2011-2015	One of UK's approach to improving air quality by encouraging shift to cleaner ways of travelling through increased cycling and walking.	Between 2011 and 2015 £374m was invested by the UK Government in cycling	Encouraging cycling and walking to replace use of vehicles and the associated emissions.	About 10% of people cycled recreationally in 2013/14 at least once per month; 42%

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			(including £151 m through the Local Sustainable Transport Fund above)		walked for at least 10 minutes at least once per week recreationally, and 50% for utility purposes at least once per week Air quality benefits not quantified, but benefits expected.
UK Government's Cycling and Walking Investment Strategy	2015-2016	The Investment Strategy will set out the Government's vision for cycling and walking, and future investment plans.	Not quantified.	Encouraging cycling and walking to replace use of vehicles and the associated emissions.	Not yet quantified but improvements in air quality expected.
LOCAL AUTHORITY REGULATION					
Local authority pollution prevention and control*	1991-2030	England, Wales and Northern Ireland have a system of Local Authority Pollution Prevention and Control (LAPPC) which regulates installations	Self-funding	Reductions in air emissions from installations	Not quantified, but 19,000 installations upgraded in line with BAT.

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		known as Part Bs (and Part C installations in Northern Ireland), such as smaller foundries, many solvent-using processes, timber activities, crematoria, car refinishing establishments and service stations. Scotland has an equivalent system for which SEPA is the responsible authority under the Pollution Prevention and Control (Scotland) Regulations 2000. These installations fall outside the scope of the IPPC Directive, but are in effect regulated following the same procedures, albeit only in relation to the control of air emissions, including releases of particulate matter. In England and Wales, the installations are regulated by local authorities having regard to national statutory guidance. Separate statutory guidance for each sector specifies emission limits, monitoring and other standards that constitute Best Available			

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		Techniques (BAT). There is equivalent guidance for Northern Ireland and Scotland.			
Local Air Quality Management (LAQM) Framework	Since 1996	Local authorities are required to assess their local air quality and those which do not meet the national air quality objectives (which are equal to or more stringent than the Directive's limit values) are required to produce Action Plans containing measures to work towards meeting the objectives. Defra provides guidance and advice on measures to improve air quality including advice on low emission zones; retrofit of abatement equipment and promoting low emission vehicles; Defra also supports and promotes the use of low emission strategies to bring about reductions in NO_X emissions including through the control of land use planning and development. For further details see:	The 2007 Air Quality Strategy estimated the admin burden of LAQM as £10m annually.	An assessment framework targeting local hotspots which might not otherwise be detected by the national assessment. Measures undertaken at a local level will be specific to the local circumstances and must work towards meeting the UK air quality objectives. Having Air Quality Management Areas ensures a more robust assessment of developments by local authorities, cleaner air and a reduction in overall UK emissions impacting on human health and the wider environment. Low emission strategies and Land use planning policies reduce the need to travel; have potential to influence modal shift etc and help to improve building energy efficiency. These measures all support reductions in	Not quantified but improvements in air quality expected.

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		http://www.defra.gov.uk/environment/quality/air/air-quality/laqm/		emissions of NOX and other pollutants For further details see *http://www.lowemissionstrategies.org/downloads/LES_Good_Practice_Guide_2010.pdf*	
Clean Air Act (1993)	1993 - 2022	The Act enables local authorities to designate Smoke Control Areas within their area and prohibits emissions of smoke within these areas unless when an exempted appliance or authorised fuel is in use. The Government is currently reviewing the Act to ensure that it continues to be effective in tackling air quality challenges	Not quantified.	Providing powers for local authorities to control smoke emissions	Not quantified but improvements in air quality expected.
LOW EMISSION VEHICLES					
Plug-in Car Grant	2010-2015	Consumers able to apply for a discount, currently up to £5,000 to help purchase a qualifying electric, plug-in hybrid, or hydrogen fuel-cell vehicle.	£127m from 2010/2011 – 2014/2015	Greater uptake of zero tailpipe emission vehicles including through plug-in hybrids driven in electric mode. This is likely to reduce emissions of pollutants in urban areas and improve air quality. When compared with	Not quantified but some improvements in air quality expected in urban areas.

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				a Euro 4 standard equivalent, an electric vehicle driving in an urban environment could provide average annual savings of 3000 grams of NOx per annum.	
Plugged-in Places	2010-2013	Government allocated money to fund the development of recharging infrastructure needed to support usage of electric vehicles. LAs providing matched funding.	Not quantified.	Greater uptake of zero tailpipe emission vehicles including through plug-in hybrids driven in electric mode. This is likely to reduce emissions of pollutants in urban areas and improve air quality.	Not quantified but improvements in air quality expected.
PowerShift programme	1997-2006	The PowerShift programme provided grants covering the purchase of LPG, natural gas, hybrid and electric vehicles, as well as grants towards the cost of converting vehicles to LPG and natural gas. From FY 2003/4 LPG vehicles received a fixed £700 grant. Hybrids were allocated a standard grant rate (originally £1,000, reduced	Total PowerShift grants costs - £32m Total PowerShift management costs - £14m Total PowerShift programme cost - £46m Funded primarily by the Department for Transport (DfT), Scottish	The PowerShift programme had a remit to reduce air pollution emissions through the promotion of cleaner alternative fuels, such as LPG and Natural Gas, and to promote new cleaner technologies such as Electric Vehicles and Hybrids	Total lifetime NOx saved - 2776 Tonnes

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		to £700). Electric Vehicles' grant values were historically based on battery leasing costs, but were changed in March 2003 to a fixed grant of £200-£1,500 depending on vehicle type and size.	Executive and Welsh Government.		
Incentivising ultra low emission vehicles - UK	2015-2020	To encourage the development, manufacture and uptake of battery electric vehicles, hydrogen fuel cell vehicles and plug-in hybrids in the UK.	Commitment of £600m over the next five years, in addition to £400m committed between 2010 and 2015 to support the uptake of ultra low emission vehicles	Intention that nearly every car and van to be a zero emission vehicle by 2050	Not quantified but aims to grow the market for the long-term – which will have AQ benefits once at scale.
ROADS					
Traffic Officer Service (England and Wales only)	April 2004. In Wales since 2009 on M4 Motorway and A55 Expressway .	The Traffic Officer Service was launched in 2004 in the West Midlands and now covers all 2025 miles of motorway in England from seven regional control centres and 32 outstations. Traffic Officers patrol the whole of England's	Unknown.	By clearing incidents quickly, Traffic Officers reduce the impact of incident related congestion and also reduce the risk of secondary incidents. Reduced emissions from idling vehicles caught up in congestion.	Not quantified but improvements in air quality expected.

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		motorway network. There are around 1,500 Traffic Officers and team managers based on road and in the control rooms working to reduce incident related congestion, improve journey time, reliability, improve safety and free up police resources to focus on criminal activity, 24 hours a day, seven days a week.			
The Road Traffic (Vehicle Emission) (Fixed Penalty) (England) Regs 2002	Introduced 2002 ongoing	The Regulations enable Local Authorities with designated Air Quality Management Areas to test vehicles at the roadside and to issue fixed penalties to drivers whose vehicles fail to meet the prescribed emissions standards – the prescribed fixed penalty amount is £60. LA's can also issue a fixed penalty (£20) to drivers who leave their engines idling unnecessarily.	No costs data available.	Reduce levels air pollution caused by poorly maintained vehicles and vehicles idling unnecessarily.	Not quantified but improvements in air quality expected. .
CEEQUAL (Civil Engineering Environmental Quality Awards) Scheme. For	2009 onwards.	CEEQUAL is the assessment and awards scheme for improving sustainability in civil	Unknown at this stage. The range is between £2,995	Dependant on type of civil engineering project. Different design concepts for waste water treatment works or	Not quantified but improvements in air quality

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Major Works Projects.		engineering projects. The scheme rigorously assesses performance across 12 areas of environmental and social concern. It rewards project teams in which clients, designers and constructors go beyond the legal and environmental minima to achieve distinctive environmental and social standards.	for projects up to £2 million, and £2,700 per £100 million.	road schemes. Reduction in emissions during site works and during operation of facility / infrastructure.	expected.
CLIMATE CHANGE MEASURES					
The UK Carbon Plan	2011-2027	The UK Carbon Plan, first published in March 2011, is a UK-wide plan of policies and proposals for action on tackle climate change to meet legislated carbon budgets and to reduce emissions by 80% in 2050. See: http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/carbon_plan/carbon_plan.aspx	Still to be quantified.	To set out the steps the UK Government will be taking to deliver a low carbon economy and meet the UK's statutory carbon budgets.	Compared to 1990, by 2020 the UK will have reduced CO_2 emissions by at least 34% and by 2027 50%.
The Carbon Capture and Storage (CCS) demonstration project	Decisions on whether Government	The CCS Competition makes available capital support and operational	The CCS Competition makes available	Carbon Capture & Storage is a mitigation technology essential in tackling global	Not quantified but improvements

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	will support one, two or no CCS project will be made in 2016 subject to value for money and affordability.	support through a project specific Contract for Difference for up to 2 CCS commercial scale plants subject to value for money and affordability considerations.	up to £1 billion in capital support and operational support	climate change, and ensuring a secure energy supply. Without CCS, limiting a rise in global temperature to 2°C will be that much more difficult and costly; up to 70% more according to the International Energy Agency (IEA).	in air quality expected.
The Renewable Heat Incentive (RHI) (http://www.decc.gov.uk/rhi)	2011-2020	The Renewable Heat Incentive policy to revolutionise the way heat is generated and used in buildings and homes. This is the first financial support scheme for renewable heat of its kind in the world.	Around £430m per year to date	The RHI's objective is to increase the level of renewable heat used in the UK. Increasing renewable heat is key to the UK meeting its renewable energy targets, reducing carbon emissions, ensuring energy security and helping to build a low carbon economy. The Renewable Heat Incentive (RHI) will help accelerate deployment by providing a financial incentive to install renewable heating in place of fossil fuels. The RHI helps to sustain and build the supply-chains needed to deliver our	Reduced emissions and air quality benefits as combustion technologies are replaced and renewed by non-combustion renewable.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
				aspirations for renewable heat in 2020 and beyond.	
Feed in tariffs for renewable electricity	2010-2030	A system of feed-in tariffs to incentivise small scale (less than 5MW), low carbon electricity generation. The scheme will require Licensed Electricity Suppliers (FIT Licensees) to pay a generation tariff to small scale low-carbon generators for electricity generated (whether or not such electricity is exported to the national grid) and an export tariff to them where such electricity is also exported to the national grid. It is intended that FITs will open up low-carbon electricity generation beyond the traditional energy companies by making it more cost effective for communities and householders to buy the units.	The cost of the feed in tariff is not borne by Government. It is a levy on Licensed Electricity Suppliers who pass this cost on to their customers.	Reduced emissions and air quality benefits as combustion technologies are replaced by low carbon, and in some cases non combustion energy generation techniques**.**	Not quantified but improvements in air quality expected.
Domestic energy efficiency measures – The Carbon Emissions	2008-2012	The Carbon Emissions Reduction Target (CERT) was one of the	Most of the costs are met by energy suppliers	The primary aim of CERT is to make a contribution to the UK's legally binding target	Not quantified but improvements

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Reduction Target (CERT)		Government's key mechanisms for improving energy efficiency in homes. The Carbon Emissions Reduction Target (CERT) required all domestic energy suppliers with in excess of 50,000 customers to make savings in the amount of CO_2 emitted by householders. Suppliers were required to meet their CO_2 reduction targets by promoting the uptake of energy efficiency measures thereby assisting householders to reduce the carbon footprint of their homes. There were also sub targets (a Priority Group and Super Priority Group) aimed at vulnerable and low income homes)	which can be passed onto energy consumers. There were some small costs to DECC and Ofgem in administering the scheme.	under the Kyoto protocol (to cut greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012) and the Climate Change Act 2008 requirement (to cut emissions of green house gas emissions by 80% below 1990 levels by 2050).	in air quality expected.
Domestic energy efficiency measures – Green Deal and Energy Company Obligation	2013-2030	The Green Deal is a market led energy efficiency scheme with a new innovative financing	Most of the costs are met by energy suppliers which can be	Improved domestic energy efficiency with consequent carbon emissions reductions and affordable warmth	Not quantified but improvements in air quality

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
(ECO)		mechanism in place for households and small businesses. The Green Deal was designed to work in tandem with the ECO, which requires domestic energy suppliers with a customer base exceeding 250,000 and delivering a certain amount of gas or electricity to reduce carbon emissions from homes by promoting the uptake of energy efficiency measures thereby assisting householders to reduce the carbon footprint of their homes and reduce heating costs for low income and vulnerable households. As part of the Green Deal, the Department of Energy and Climate Change (DECC) launched Green Deal Home Improvement Fund, an incentive scheme open to all householders in England and Wales, helping to support the installation of energy efficiency measures such as solid wall insulation	passed onto energy consumers. There were some small costs to DECC and Ofgem in administering the scheme.	improvements.	expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		and new heating systems.			
Domestic energy efficiency measures – Warm Front	2000-2013	A range of heating and insulation measures to private sector households that are in receipt of particular income related benefits.	Not quantified.	The aim of the scheme was to alleviate fuel poverty and improve thermal efficiency of customer's property in England. The scheme closed in January 2013.	Not quantified but improvements in air quality expected.
Carbon Reduction Commitment Energy Efficiency Scheme (CRC)	2010-2030	The scheme features a range of reputational, behavioural and financial drivers which aim to encourage organisations to develop energy management strategies that promote a better understanding of energy usage. Revenue from the sale of CRC allowances, from April 2014, will deliver around £700 million per annum to the UK government, forecast to fall to around £570 million by 2016, and £470 million by 2020 (as the level of emissions fall) to support the public finances, including spending on the environment.	Approximately £348k a year to cover enforcement costs	To improve energy efficiency and therefore cut CO_2 emissions in large public and private sector organisations. These organisations are responsible for around 10% of the UK's CO_2 emissions.	Improvements in energy efficiency will also have positive impacts on air quality. CRC is projected to deliver carbon emissions reductions of at least 18 $MtCO_2$ by 2027
Smart meters		The Government has a	The latest	Reduced energy use,	Not quantified

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		manifesto commitment to 'ensure that every home and business in the country is offered a smart meter by 2020, delivered as cost effectively as possible'. The roll-out of smart meters is an important national modernisation programme that will bring major benefits to consumers and the nation as a whole. Domestic customers will be offered an In-Home Display (IHD) enabling them to see what energy they are using and how much it is costing.	updated Impact Assessment, published in January 2014, estimates that the rollout will generate £6.2 billion of value to the British economy, by delivering total benefits of around £17.1 billion through investment of £10.9 billion. It is the energy industry, not the Government, which is making the investment that will enable the rollout	therefore reduction emissions from combustion and improvements to air quality.	but improvements in air quality expected.
Community Energy Saving Programme (CESP)	2009-2012	CESP was an area-based scheme that targeted households across Great Britain, in areas of low income, to improve energy efficiency standards, and reduce fuel bills. CESP is funded by an obligation on	Costs met by energy suppliers which can be passed onto energy consumers. There were	CESP requires all licensed gas and electricity suppliers that have at least 50,000 domestic customers (2009 and 2010) 250,000 domestic customers (from 2011) and all licensed electricity generators that have	Reduced energy use, therefore reduction emissions from combustion and improvements

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		larger energy suppliers and large electricity generators.	some small costs to DECC and Ofgem in administering the scheme.	generated on average 10 TWh/yr or more in a specified three year period to meet a carbon reduction obligation.	to air quality.
Boiler Scrappage Scheme	2010 only	Grant scheme with vouchers for residents to assist with boiler scrappage and upgrading old G rated boilers for a new A rated boiler.	England, £2.5m in Wales, £3m in Scotland, £2m Northern Ireland).	Scheme's objective was to tackle fuel poverty but it will also reduce emissions of combustion product pollutants in urban areas and therefore improve air quality. Scheme also increases efficiency so less fuel is used	Not quantified but improvements in air quality expected.
Large Combustion Plant and Industrial Emissions Directives	2010-2016	Part of the regulatory frameworks put in place to ensure that the UK will continue to meet international and emissions ceilings for emissions of NO_x and for emissions to continue to decline. IED introduced in 24 Nov 2010 and will completely replace in phased approach LCP by 1 January 2016.	The cost of meeting the directive is borne by the plants that do not meet the ceilings outlined within the IED/LCP and potentially passed onto consumers. There would be some cost to regulators for monitoring/enforcing the emission	To ensure that the UK will continue to meet international and emissions ceilings for emissions of NOx and for emissions to continue to decline.	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
			ceilings.		
Carbon budgets(5-yearly)	2008-2027	Framework sets a limit on UK emissions over each five year period from 2008-2027	Not quantified.	Reduction in emissions	Provisional figures for 2014 show that CO_2 emissions fell by 8.4% between 2013 and 2014
UK Government Procurement - Government Buying Standards for Vehicles	Initial GBS in place from 2010 and updated in 2012.	Standards for public sector procurers to encourage the purchase of ultra-low emission vehicles. The GBS is currently being updated to take account of NOx in addition to CO_2 emissions and will be published early in 2016	Not quantified.	Designed for central and local government , to encourage purchase of ultra-low emission vehicles with an award criteria for CCS eAuctions and a fleet average for CO_2 (134g/km).	NO_x benefits will start to be realised in 2016
European Eco-design Regulations (with effect from 2020 for Solid fuel boilers, and 2020 for Solid fuel local space heaters)	2020-2022	The new regulations will introduce efficiency and emission criteria for solid fuel boilers and local space heaters, and set emission criteria for key pollutants including NOx, for solid fuel appliances up to 500KW rated thermal output. Its implementation should contribute to further reduction of NOx emissions	Not quantified.	Reduced emissions from solid fuel boilers and local space heaters	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		across the UK by ensuring new products conform to emission limits. The standards will apply in Smoke Control Areas.			
Energy efficiency project in Schools (Dept for Education)	2013	Since 2013 nearly £32m has been invested by the Department for Education and the Education Funding Agency and has enabled over 800 energy efficiency projects in 670 Schools to be funded through Salix loans	Total of £63m projects have been funded	Energy efficiency and associated reduction in emissions.	283,000tCO_2 carbon savings is expected over the life time of the projects Not quantified but improvements in air quality expected.
Industrial Pollution Prevention and Control Implementation Guidelines	1997-2030	The Department for Environment Food and Rural Affairs (Defra), the Welsh Government, the Scottish Environment Protection Agency (SEPA), and the Northern Ireland Environment Agency have produced detailed guidance for regulators and operators to ensure effective implementation of the IPPC Directive (2008/1/EC). For	Not quantified.	Reduced emissions from industry required to abate air pollution with Best Available Technologies as a condition of their operating permit. Cleaner air, notably in urban areas and a reduction in overall UK emissions impacting human health and the wider environment.	21% reduction in NOx emission between 2000 and 2009 estimated in Wales.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		IPPC guidelines relating to England and Wales, see: http://www.defra.gov.uk/environment/quality/industrial/, for guidelines concerning Scotland, see: http://www.sepa.org.uk/air/process_industry_regulation/ippc_directive.aspx; for guidelines concerning Northern Ireland, see: http://www.ni-environment.gov.uk/pollution-home/ippc.htm.			
CLEANER TRANSPORT FUELS					
Fuel duty incentives for ultra low sulphur diesel	From 1999 (in advance of EU 2005 mandatory date for ULSD introduction) to 2008 when duty was simplified	To reflect concerns over local air quality, and to encourage the manufacture and use of ultra-low sulphur diesel, the tax (duty plus VAT) on diesel rose in 1998 to by 5.5 pence per litre, and on ultra-low sulphur diesel by 4.4 pence per litre. The duty differential between diesel and ultra-low sulphur diesel was increase to 3 pence per litre. In 1999. In 2008 the fuel duty rate structure was simplified to a single rate for diesel and	Not quantified.	Led to an immediate market switch to ultra low (50mg/kg) sulphur fuels and therefore reduced SO2 emissions. The virtual removal of sulphur should improve the efficiency and prolong the life of exhaust catalysts. Additionally, sulphur-free petrol is "enabling technology" in that it can optimise the efficiency of new direct injection petrol engines that improve fuel efficiency and reduce emissions of carbon dioxide	Reduced tailpipe emissions and lower concentrations of SO_2. Some positive impacts (not quantified) on NO_X emissions.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		petrol.		when combined with de-NO_X exhaust catalysts. Sulphur-free diesel should also slightly reduce nitrogen oxide emissions from diesel engines and assist the efficiency of vehicles fitted with re-generative particulate filters within the exhaust system.	
Low Carbon Truck Trial	2012-2016	£11.3 million Government funding with match funding from industry for around 350 potentially low carbon vehicles and refuelling infrastructure. Trial is directed at operators to help establish and run fleets of low carbon HGVs with most using natural gas or dual fuel system (diesel and gas) and a minority trialling used cooking oil. Data is being collected on carbon and air pollutant emissions, fuel efficiency and operational performance. Latest report was published in July 2015.	£11.3 million has been provided by Government, with match funding from industry.	Primary focus is on CO_2 emissions but the trial is also expected to deliver AQ benefits.	Not yet quantified but expected to have AQ benefits.
Hydrogen for Transport Advancement	2015	Match funding to facilitate initial network of 12	Funded as part of Incentivising	To encourage cleaner transport fuels	Not yet quantified but

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Programme		hydrogen refuelling stations, enabling the uptake of fuel cell electric vehicles.	ultra low emission vehicles - UK		expected to have AQ benefits.
VEHICLE STANDARDS AND TESTING					
HGV emissions testing protocol	2014-2016	Research project to develop a testing protocol to measure GHG and AQ emissions from gas and dual fuelled (diesel/gas) HGVs.	£150k to develop the protocol and a further £150k for vehicle testing during 2016	This work will inform government policy on future use of gas as an HGV fuel.	Not yet quantified but expected to have AQ benefits.
Revised standards for Non Road Mobile Machinery (NRMM)	This is expected to come into force in 2017 and to be mandatory from 2019.	Engines for sale for NRMM must be approved to demonstrate compliance with pollutant emission standards including NOx. The European Commission has proposed measures to further cut emissions and improve the legal framework including an extension of the scope to cover all sizes of petrol and diesel engines.	Not quantified.	Emissions reductions from NRMM	Revised standards are expected on average to lead to approximately a 4.0kt reduction in NOx (and 1.6kt of PM) per year in the UK between when the regulation comes into effect in 2019 and 2040
INDUSTRIAL POLLUTION					
Medium Combustion Plant Directive (MCPD)	Directive expected in	The framework for regulating combustion	Not quantified.	New plant will be required to meet the ELVs with effect	Not quantified but

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
	Jan 2016 with 2 years to transport into domestic legislation by Jan 2018	plants, with a rated thermal input of between 1MW – 50 MW (there are about 11,000 such plants in the UK, 90% of which are within the 1-5MW range and currently unrated). The MCPD is likely to come into force in January 2016 and will introduce a system of registration/permitting, regular monitoring and emission limit values for plants. The MCPD is expected to improve air quality by reducing emissions of NOx as well as other pollutants. It will also help to deliver compliance with revised National Emission Ceilings.		from 12 months after the transposition deadline and existing plants by 2025 for those greater than 5MW, and 2030 for those below.	improvements in air quality expected.
COMMUNICATIONS MEASURES					
Daily Air Quality Index of 5 pollutants accompanied by health messages for at risk individuals and for the general population	Ongoing daily	Real time information for a range of pollutants including NO_2, provided on the UK-Air website and directed at members of the public so that that they can take action to mitigate the short term effects of air pollution on their health . Separate	Not quantified.	To reduce the health impacts of air pollution by providing the public with current information.	Reduced exposure of vulnerable persons Indirect benefits not quantified

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		sites are provided by the devolved governments.			
Public Health Outcomes Framework	2010-2016	The PHOF includes an air quality indicator the percentage of mortality attributable to particulate (PM2.5) air pollution. The indicator is intended to raise awareness of the impact of air pollution on public health so that action to improve air quality can be prioritised appropriately.	No direct cost	To raise awareness of the impact of air pollution on public health so that action to improve air quality can be prioritised appropriately.	Indirect benefits not quantified.
RESEARCH					
Research and development - UK	2009-2020	Funding for industry-led Ultra Low Emissions Vehicles R&D projects, delivered through InnovateUK.	2010-15 £82 million grant funding committed to over 120 industry-led ULEV R&D projects, delivered through InnovateUK. Further projects to be supported 2015-20 funded from the £600m for Incentivising	To encourage the development of ultra low emission vehicle technology	Long term benefits expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
			ultra low emission vehicles - UK		
ENGLAND ONLY MEASURES					
PLANNING					
National Planning Policy Framework (2012) - England	From 2012 ongoing	The NPPF is clear that planning policies should sustain compliance with and contribute towards EU limit values for pollutants including NO_2. Local authorities are required to take account of the NPPF in developing their local and neighbourhood plans and is a material consideration in planning decisions. To support the NPPF, linked planning practice guidance on air quality provides guiding principles on how planning should take account of the impact of new development on air quality.	Not quantified.	Air quality considerations are embedded within the NPPF to safeguard people from unacceptable risks from air pollution.	Not quantified but improvements in air quality expected.
National Networks National Policy Statement (2014) - England	2014 onwards	NNPS provides advice on how decisions on road and rail infrastructure should take account of air quality thresholds including those	No cost	To ensure air quality is considered in decisions taken on road and rail infrastructure	Indirect benefits not quantified

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		for NO_2 and how mitigation measures should be secured to ensure that there is no breach			
Progressive strengthening of the energy efficiency standards in building regulations	2013 onwards	One of the range of energy efficiency measures by the UK devolved administrations to reduce emissions from buildings by improving and decarbonising homes and realising the associated air quality benefits	unknown	Emissions reductions through standards.	Not quantified.
LOCAL AUTHORITY REGULATION					
Defra's Air Quality Grant Scheme – England	1997 onwards	The AQ Grant support expenditure by local authorities in England on measures to improve air quality. LAs can apply if they are an English authority who has exceeded limits for nitrogen dioxide in their area or are at risk of exceedance of the daily limit for PM10.	The scheme has awarded over £52m since it started in 1997 and £10.5m in the last 10 years with £0.5m being made available for 2015	Support for Local Authorities in exceedance of NO_2 limits to improve their emissions.	Not quantified but improvements in air quality expected. .
BUSES					
Green Bus Fund	2009- 2013	Grant has helped bus operators and local authorities in England put over 1,200 cleaner buses on	£89m was awarded to schemes between 2009	Replacing older buses with high emissions with lower emissions vehicles.	In conjunction with the Scottish Green Bus Fund, it is

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		the road	and 2013		estimated a 0.004% reduction in total road transport NO_X emissions in 2011 and in 2015.
Clean Bus Technology Fund - England	2013-2016	Grant support to local authorities to reduce emissions from older more polluting buses operating in congested areas to upgrade with NOx emission reducing technologies	In 2013 DfT committed £7.3m to local authorities. An additional £5m has been allocated to the 2015 Fund	Replacing older buses with high emissions with lower emissions vehicles.	Not quantified but improvements in air quality expected.
SUSTAINABLE TRAVEL					
Infrastructure Act 2015 (Work is currently underway to develop the first Strategy) – England	2016-2019	The Act requires the Secretary of State for Transport to set a Cycling and Walking Investment Strategy for England and to make financial resources available to meet the objectives	No cost	To promote low/no emission travel alternatives	Not yet in place
The Department of Health's Walking Cities programme - England	2013 - ongoing	The programme which includes funding is designed to increase walking and	Five English Authorities (Cambridge,	To increase walking and encourage sustainable modes of transport	Not quantified but improvements

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		encourage sustainable modes of transport e.g. health walks, community street audits, walking challenges	Leeds and Bradford, Manchester, Birmingham and Norwich) were awarded £1.2m between 2013 and 2015		in air quality expected.
Government's Cycle City Ambition programme	2013-2019	The programme seeks to increase the numbers of cyclists in eight English cities (Birmingham, Bristol, Cambridge, Leeds, Manchester, Newcastle, Norwich and Oxford)	• First phase of programme was awarded £77m with project to be completed by March 2016 • Second phase was awarded £114m to run from 2015 through to 2017-2018 • £12m a year has been invested in Bikeability, a scheme to provide children and teenagers with the skills and confidence to cycle	Reducing emissions from vehicles by increasing cycling	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
			• In 2011-2015 £35m has been invested in improving cyclist safety at junctions in England including £15 to improve cycle safety in London • In 2013-2015 £30m has been invested improving cycle-rail links and £15m will be invested in 2015/16 to improve cycle facilities at railway stations. • £100m of long-term funding was provided to Highways England through the Roads Investment Strategy to improve the conditions for		

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
			cyclists and walkers alongside and crossing the Strategic Road Network		
National Health Service's Sustainable Resilient, Healthy People and Place Strategy	2014-2020	The strategy sets out the NHS ambition to reduce environmental impacts and promote healthy behaviours e.g. walking, cycling which have direct health benefits and reduce emissions. The strategy is based on the legal limits set by the Climate Change Act 2008.	Not quantified.	Primarily improvements in health with knock on benefits for air quality.	Not quantified but improvements in air quality expected.
ROADS					
Clean Air Zones (CAZ)-England	Consultation in 2016	Clean Air Zones are areas where only the cleanest vehicles are encouraged (through the use of vehicle emission standards) and action is focussed to improve air quality. They are geographically defined areas allowing action and resources to be targeted to deliver the greatest health benefits. CAZs are grouped into classes	Details of the CAZ framework to be determined in 2016	CAZs will bring together action to enhance public transport and accelerate the transition to ultra low emission vehicles, both to increase local uptake and to support national ambition. They will create places which encourage walking and cycling for short journeys or as part of a longer journey and make the most of public transport.	We have modelled the impacts of CAZs on concentrations in a number of zones across the UK. An average reduction in concentrations of around 1.5µgm-3 was

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		covering different vehicle types depending on the fleet mix and air quality levels in the particular area. Vehicle owners will be required to pay a charge if they enter a CAZ which has a standard for their type of vehicle and it does not meet that standard.		It is intended that the introduction of a CAZ will also have an impact in the wider area and guide investment for example for integrated public transport networks based on low emission vehicles or park and ride schemes.	found for Class A CAZs, for class B there was a further 1µgm-3; for class C, 1.6µgm-3, and class D an additional 7µgm-3 on average. (NB These reductions are not cumulative but reflect the difference from the preceding class of CAZ).
Road Investment Strategy –England	2015-2021	RIS is part of Government's action for reducing air pollution to support the development of innovative solutions to bring about changes in air quality. Highways England have committed to undertaking 10 studies to help deliver on the Government's commitment including looking at causes of pollution, building a clear	£100m of funding has been committed over the next 6years	It is aimed at reducing pollution from vehicles that drive on the national road network.	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		picture of pollution and exploring ways of managing the use of the road network and local options for reducing pollution.			
WALES ONLY MEASURES					
PLANNING					
Planning Policy Wales		When preparing strategies for future growth and allocating land for particular uses in their local development plans, local planning authorities should consider the effects which proposed developments may have on air quality, as well as the effects that air quality in an area would have on the acceptable future use of land.	Not quantified.	Avoiding or minimising the adverse effects of any environmental risks on present or future land use, including air quality, is an inherent part of Planning Policy Wales.	Not quantified but improvements in air quality expected.
National Transport Finance Plan - Wales	Covering the period 2015-2020.	The plan sets out the Welsh Government's priorities for investing in transport infrastructure and services , including in specific, sustainable highway improvements to the trunk road network to reduce congestion, such as relief roads and bypasses, public	Not quantified.	Reducing congestion	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		transport and active travel measures which will improve air quality.			
Welsh Government's Fuel Poverty Strategy	2010	The strategy sets out the actions that the Welsh Government will take to tackle fuel poverty. The key action is to improve the energy efficiency of the homes of low income households through demand-led and area-based schemes	Not quantified.	The Welsh Government has a statutory obligation to eradicate fuel poverty as far as is reasonably practicable in all households in Wales by 2018.	Not quantified but improvements in air quality expected.
LOCAL AUTHORITY REGULATION					
Welsh Government Local Authority Single Revenue Grant	2015 onwards	Local authorities are responsible for allocating money from a single pot earmarked for environment and sustainable development work, including the implementation of measures identified in air quality action plans.	Funding allocated from the overall pot to air quality measures is determined annually by each individual local authority	Environmental and sustainable development, including air quality improvements.	Not quantified but improvements in air quality expected.
CLIMATE CHANGE MEASURES					
Welsh Government Warm Homes	Home energy efficiency schemes have been	The current schemes sit under the Welsh Government Warm Homes brand and include the demand-led Nest scheme	£150 million invested from 2012/13 to 2014/15 Over £50 million to be	From 2012/13 to 2014/15, Welsh Government Warm Homes improved the energy efficiency of over 27,000 homes across Wales.	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
	in place in Wales since 2000. The figures provided relate to work undertaken from 2012/13 only.	and area-based Arbed scheme. Under Welsh Government Warm Homes, households in Wales have access to free, impartial advice and support to reduce their energy use and energy bills and maximise their income. Qualifying households who are on low incomes or living in the most deprived areas of Wales can also benefit from a package of free home energy efficiency improvements.	invested in 2015/16		
ROADS					
Intelligent Transport System (ITS) and other innovative technological systems on strategic road network in Wales		ITS and other innovative technological systems on strategic road network in Wales	Not quantified.	Reducing congestion	Not quantified but improvements in air quality expected.
M4 Motorway Variable Speed Limit Scheme		Operates between Junction 24 at Coldra and Junction 29 at Castleton and specifically aims to reduce congestion, improve safety and improve air quality along the M4 motorway corridor near Newport.	Not quantified.	Reducing congestion	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Upgrading of existing steelworks access road at Llanwern	Stage 2 opened July 2013.	Improving access road to reduce traffic on M4	Not yet known	A reduction of traffic on the existing M4.	Pre-scheme predicted reduction of 37.5 tonnes NOx per year.
Traffic Officer Service in Wales	From 2009	Officers assist in ensuring congestion is minimised on M4 Motorway and A55 Expressway.	Ongoing.	Reducing congestion	Not quantified but improvements in air quality expected.
M4 Junction 28 Tredegar Park Area	By 2020	Improvements to junction to enable better traffic flow	Not quantified.	Improving traffic flow	Not quantified but improvements in air quality expected.
M4 Corridor around Newport - motorway & related improvements	Opening year for new section of motorway is Autumn 2021, works to existing motorway completion 2022	A new section of motorway and complementary measures, including links to walking and cycling infrastructure.	£1bn	Improving congestion and promoting sustainable modes of transport	Unknown, but traffic modelling and air quality assessment work has commenced
Llandeilo Bypass	Post 2020	New road to bypass existing	Not yet known	Easing congestion	Air quality

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		routes through Llandeilo and Ffairfach			assessment not yet commenced
A55/A494 Deeside	Post 2020 – early stages of development	Scheme to improve the A494/A55/A548 Deeside corridor	Not yet known	Easing congestion	Air quality assessment not yet commenced
A483/A489 Newtown bypass	Post 2020	Reduced congestion and traffic volume in Newtown due to diversion of traffic onto new road.	£62.1m	Transfer of traffic from the town onto the bypass	Concentrations of NO_2 are predicted to fall below the annual mean objective within the current Air Quality Management Area (AQMA) which would remove the requirement for its designation.
A470 Upper Boat Gyratory	Spring/ summer 2016	Improving traffic flow through junction improvement	£1.9m	Easing traffic congestion	Not quantified but improvements in air quality expected.

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
SUSTAINABLE TRAVEL					
Welsh targeted promotion of sustainable ways to travel	2013	Part of the Welsh Sustainable Travel Centres Initiative: A range of active travel and integrated transport infrastructure improvements to promote active travel through better integration of transport interchanges, between bus services and railway stations e.g. park and ride, park and share facilities, cycling routes etc.	Not quantified.	Increase use of low emission/no emission transport methods.	A 2% to 11% reduction in emissions across the UK was estimated in 2011.
Improved integration at transport interchanges in Wales.			Around £21.5m capital	To encourage modal shift away from private vehicles.	Not quantified but air quality benefits expected
Welsh Personalised Workplace and School Travel Planning Programme	Completed in 2014-15.	Part of the Sustainable Travel Centres Initiative, to encourage people to walk, cycle and use public transport for more of their local everyday journeys. Provided personalised travel planning in Cardiff and Mon a Menai areas. Also developed school and workplace travel planning toolkits.	Around £4m	Previously estimated a 10% reduction in car trips in target areas. The results from Smarter Journeys project state that those actively travelling to school increased from 65.5% to 72.5%. In Cardiff, the average mean households that stated they travelled by car dropped from 44% in 2011 before the interventions, to 40% after	Not quantified but air quality benefits expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
				the project was completed.	
Welsh travel Planning and provision of personalised travel information	2010-ongoing	Travel Plan Coordinator, Traveline Cymru and Sustrans Cymru delivery of Travel Champion Training.	Regional Travel Plan Coordinators. Approx £200k per year. Since 2015-16 £120k per year	Encouraging sustainable transport	Not quantified but air quality benefits expected
Welsh Walking and Cycling Action Plan 2009 2013	2009-2013. Now picked up by Active Travel Plans.	Encourage more people to walk and cycle more safely and more often. Action Plan will explain how the Welsh Government and our partners are supporting walking and cycling in Wales.	£18 million	Rates of walking and cycling in Wales increased with modal shift from motorised to active travel.	Not quantified but air quality benefits expected
Traffic Management Act 2004	2010-ongoing	Taking forward measures under the Act to provide local authorities with civil enforcement powers to control inconsiderate car parking as well as bus priority and moving traffic contraventions	No cost	To give local authorities more powers to control traffic and parking	Not quantified but air quality benefits expected
Welsh Regional Transport Plans	2010-2014 replaced by Local Transport Plans	Regional Transport consortia in Wales have a delivery plan of integrated transport schemes detailing walking and cycling, road safety schemes, smaller	£85 million from 2010/11 – 2013/14	Encouraging modal shift	Not quantified but air quality benefits expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		highways improvements			
Welsh Local Transport Plans	2014 onwards	Local authorities in Wales including walking, cycling, public transport and highways schemes. Applications to deliver schemes are assessed and supported by Welsh Government through the local transport fund.	£15 million per annum since 2014/15	Encouraging modal shift	Not quantified but air quality benefits expected
Implementation of the Active Travel (Wales) Act 2013	2015 - ongoing		Unknown at this stage – local authorities required to produce annual reports on expenditure on delivering the Act so will be known in future.	Encouraging modal shift	• Cardiff Bike it project has resulted in 31% uptake of cycling • Average car occupancy in Cardiff has increased to 1.41 (compared to 1.37 in 2007) • Travel by car has dropped from 44% in 2011 to 40% after the initiative

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
BUSES					
Support for Local Bus Services in Wales	2010 onwards	Through Bus Service Operators' Grant (BSOG) and Local Transport Services Grant (LTSG) that help support commercial and socially desirable bus services. In 2010-11 increased the rate of BSOG for bio- fuels. Looking at changes to the BSOG scheme to better target broader outcomes such as reducing emissions. Bus priority and moving traffic contraventions.	£11m for LTSG in 2011-12. Provided around £21.5m in BSOG to bus operators in 2010-11.	Reducing emissions from bus fleets as well as supporting commercially and socially desirable bus services.	Not quantified but improvements in air quality expected.
Bwbca Bus Project		An innovative demand responsive transport scheme that provides community bus services in rural Carmarthenshire. Looking at plans for expansion of the operational area.	£350,000	Encouraging bus use	Not quantified but improvements in air quality expected
Bus Services Support Grant (BSSG)		Supports non-commercial bus and community transport services..	£25m pa	Supports modal shift from cars.	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
Discounted bus travel for younger people in Wales	Sept 2015 onwards	Increasing public transport usage amongst 16-18 year olds..	£5 million in 2015-16, £9.7 million 2016-17	Contributes to reducing congestion and emissions	Not quantified but improvements in air quality expected
Removing pinch points on road network causing reliability issues for buses in Wales		Removing pinchpoints on road network causing reliability issues for buses in Wales	Not quantified.	Improving bus service reliability to encourage use	Not quantified but improvements in air quality expected
FREIGHT					
Welsh Freight Mode Shift Revenue Support	2011-2015	Welsh grant to offset the greater operating costs of transport by rail or inland waterway, compared to road, in order to encourage modal shift.	Approx. £100,000 by 2011	To encourage modal shift.	Delivered. Estimated 0.3% to 0.7% reduction in total road transport NO_2 emissions per annum between 2011 and 2015.
Welsh Freight Facilities Grant	2001 onwards	Welsh grant to offset the capital costs of rail or water freight handling facilities necessary to enable freight to move by rail or water, rather than by road.	Since 2001 the Welsh Government has provided £4.8m.	Modal shift	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
RAIL					
The Cardiff City Region Metro Project, including Valley Line Modernisation (South Wales)	In development	The priorities for this investment are: faster journeys / reduced generalised journey times; increased public transport use; higher quality of service; reduced operating and maintenance costs; improved reliability; capacity to meet demand; accessibility improvements; park and ride improvements; reduced CO_2 equivalent emissions; and direct services to economic centres	In development	Modal shift from road to rail.	Figures not currently available. Modelling underway.
Pan-Wales rail infrastructure enhancement schemes and schemes for improving passenger services	In development	Improvements to railway infrastructure.	In development	Will support a modal shift from road.	Not quantified but improvements in air quality expected
Electrification and gauge enhancement of the South Wales Main Railway Line.	In development.	Electrification and gauge enhancement of the railway line.	In development.	Rail electrification in itself can represent a 35% decrease in carbon emissions compared to diesel. Faster and more regular services and gauge enhancement will support a	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
				modal shift from road for both passengers and freight.	
SCOTLAND ONLY MEASURES					
POLICY					
Cleaner Air for Scotland	2015-2030	Strategy to coordinate policies across Scottish Government portfolio that impact on air quality and reduce NOx emissions.	unknown	Coordination of policies aiming to improve air quality in Scotland.	Not quantified but improvements in air quality expected
LOW EMISSION VEHICLES					
Switched On Scotland: A Roadmap to Widespread Adoption of Plug-In Vehicles	2013-2030	Strategy for almost complete decarbonisation of Scottish vehicle fleet by 2050	Not quantified.	Decarbonisation of Scottish vehicle fleet.	Not quantified but improvements in air quality expected
SUSTAINABLE TRAVEL					
National Walking Strategy - Scotland	2014-2030	Scottish Government's vision of a Scotland where everyone benefits from walking	Not quantified.	Modal shift away from vehicle use towards walking.	Not quantified but improvements in air quality expected
LOCAL AUTHORITY REGULATION					
Air Quality Grant-Scotland	1997-2030	To support expenditure by local authorities in Scotland on measures to improve air	£0.5m annual budget for air quality monitoring; and	Improvements in air quality in Scotland.	Not quantified but improvements in air quality

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
		quality	£1m annually to support action plan measures		expected
NORTHERN IRELAND ONLY MEASURES					
SUSTAINABLE TRAVEL					
Bicycle Strategy - NI	2015 – 2040 split into 5 year delivery plans	NI Cycling Strategy 2000 has been replaced by 'Northern Ireland Changing Gear – a Bicycle Strategy for Northern Ireland'. This Strategy was published in August 2015 and will be followed up by a series of five year Bicycle Strategy Delivery Plans.	The Bicycle Strategy highlights a suggested annual spend on cycling of around £12.5 million per annum within five years (2020) and £18 million per annum within ten years (2025)	It is expected that measure will allow a move to more sustainable travel and reduce emissions from fewer car journeys.	Not quantified but improvements in air quality expected
Active School Travel Programme - NI	The current programme concludes in 2016 but consideratio n is being given to a further programme beyond	This programme is jointly funded by DRD and the Public Health Agency (PHA) and involves a planned programme of activities in schools (including some cycle training) which is designed to bring about long term behavioural change that will get more young people cycling and walking	The current programme (which will conclude in 2016) costs £400,000 per annum and is jointly funded by DRD and the Public Health	It is expected that measure will allow a move to more sustainable travel to school and reduce emissions from fewer car journeys	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
	2016.	more often.	Agency (PHA)		
Travelwise NI	Ongoing	An initiative to encourage the use of sustainable transport options such as walking, cycling, public transport or car sharing	The current budget for Travelwise is circa £100,000 per annum	The measure will allow an increased awareness of the health, environmental and economic benefits of active travel and opportunities to engage in active travel and should encourage modal shift and therefore reduction in car journeys leading to lower emissions and concentrations.	Not quantified but improvements in air quality expected
Park and Ride - NI	2009-2016	Park and ride schemes to encourage use of public transport for onward travel to congested urban centres	Not quantified.	Designed to encourage use of public transport for onward travel to congested urban centres	Not quantified but improvements in air quality expected
LOW EMISSION VEHICLES					
E-car charging infrastructure – NI	2010-2011	Infrastructure for electric vehicles to encourage their uptake.	£3.2m Consortium project with funding from OLEV and Europe - Infrastructure commercialised with effect from 30 July 2015 [note that some of this is OLEV	Designed to encourage the purchase and use of electric vehicles with zero tail-pipe emissions	Not quantified but improvements in air quality expected

Name	Dates and Scope	Description	Cost to Government	Scheme Objective	Air Quality Benefits
			funding already referenced elsewhere]		