Aiming to improve our environmental performance
SEPA’s Sustainability report 2013-2014
Welcome to SEPA’s second comprehensive report on our own sustainability performance. We’ve been working towards bringing all our reporting together against our own environmental targets, against the three public bodies’ duties within the Climate Change Act, and against the guidance given to us by Government on sustainability. This year I think we’ve achieved a high quality, seamless and, I hope, interesting report. We have also presented some of the key headlines from this report in an interactive guide [hyperlink].

The past year has been very significant for SEPA, particularly with the passing of the Regulatory Reform (Scotland) Act 2014, which gives us a new, wider, general purpose to undertake our duties to protect and improve the environment in a way that also contributes to the health and well-being of the people of Scotland and to delivering sustainable economic growth. Acting sustainably is therefore at the heart of our business and maintaining our own wider environmental performance is as important as ever. So it is encouraging that emissions from our transport last year reduced by a further 10%, continuing a sustained downward trend. For example, the business miles travelled by our staff in cars has almost halved in the past five years. And we have achieved waste recycling rates of 72% for the year, well above the national average.

I’ll admit straight away, however, that I’ve been frustrated in past years by the reporting of failure against one of our headline corporate targets: to reduce by 2020 our own business carbon emission by 42%, against a 2006-2007 baseline. So I’d like to meet that one head on here, and in more detail in an article in SEPA View [hyperlink].

We are expected to be an exemplar in Scotland in tackling climate change, and our approach to reducing carbon emissions should be at the forefront of current thinking. It is absolutely clear that to reach Scotland’s target of an 80% reduction in national carbon emissions by 2050 then, amongst other things, much of the heating of all buildings will have to be by electricity - and electricity drawn from a grid powered very substantially by renewable sources, which Scotland is well on the way to providing. So, in SEPA, we have been increasingly and consciously modifying our buildings, as far as we are able, to be fewer, smaller, more energy-efficient, and efficiently electrically heated.

To evidence this conviction we have, for the first time, made our own estimate of SEPA’s emissions using a carbon conversion factor for a Scottish electricity grid rather than the UK grid, to better reflect of our real-world impacts. I’m really pleased to report that our estimate of overall emissions using this approach is a 32% reduction against our 2006-2007 baseline, well on the way towards our corporate target of 42% reduction by 2020. We are currently committed to using a UK grid conversion factor, so have reported our performance using both factors in the interests of openness and consistency, but in the coming year we will investigate ways to address this anomaly.

“There is really no way for the world to achieve radical reductions in carbon emissions without fundamentally decarbonising electricity and applying electricity to a wider set of activities throughout the economy”

Lord Adair Turner, Former chair of the UK Climate Change Committee, BBC Radio 4, 16 Oct 2014
The past year was also a significant in that we made the biggest change to our estate since SEPA’s formation, moving about 350 staff to a new combined laboratory and office in North Lanarkshire, while closing, or reducing occupancy at, three major buildings. The Angus Smith Building was designed, with a high degree of staff input, to provide a high quality and ergonomic workspace, and create a positive cultural ambiance, and also to reduce environmental impacts. As a result, it was awarded a BREEAM “Excellent” rating.

If you dip further into this report I hope you’ll be interested in many of the other stories. We are putting a lot of effort into helping Scottish communities adapt to climate change – our contribution is predominantly focused on planning for flood risk, understanding and mapping potential flood zones and preparing strategies to reduce flooding risk.

We’re also promoting citizen science, not just in Scotland but across Europe. In particular, we’re involving anglers in monitoring river water quality, school pupils in assessing and understanding their local air quality and associated health impacts, and created mobile phone apps to allow people to record and map invasive species.

Sustainable development demands, by its very nature, much partnership working, to break down barriers between traditional structures, disciplines and cultures and deliver the multiple benefits of creative thinking.

We continue to work closely with business sectors within, for example, HydroNation and the new Green Growth Group, and are active in advocating the transition towards a circular economy in Scotland.

Finally, I’d like to mention our achievements internally. SEPA attained a Bronze Healthy Working Lives award – a scheme supporting positive approaches to staff well-being – and is well on the way to the Silver award. Our People Strategy sets out clearly SEPA’s commitment to staff as an employer, and what we expect in return.

If there is one measure of which I am proudest, it is the engagement score achieved in our staff survey of 2013. Our staff engagement stands at 79%, 4% above the level two years previously, and well above the public sector benchmark of 69%. This is a compound measure of staff commitment, motivation and loyalty. If an organisation gets that right then, I believe, just about everything else follows on.

James Curran, SEPA Chief Executive
Welcome

Welcome to SEPA’s Sustainability report for 2013–2014. This report sets out how we have acted during the year to improve our own environmental performance and also how we have met our duties to contribute to the Scottish climate change targets and to act sustainably. This report shows our progress against our environmental targets as required under guidance from the Scottish Government on sustainability reporting. We also present a summary of activities taken forward during 2013–2014 to meet the requirements of the Public Bodies’ Duties under the Climate Change (Scotland) Act.

In March 2014, we published our new climate change plan – Our climate challenge – which sets out our direction for addressing climate change for the next five years. A key ambition is to act as an exemplar in managing our own performance to the highest standards.

This report adapts the main themes from Our climate challenge and uses them to cover five key areas:

1. Acting as an exemplar – where we explain our direct environmental impacts and our management of fossil fuel energy and greenhouse gases, reporting on the targets we have set and the progress made;

2. Acting as a climate change leader and adviser – where we discuss our work to provide clear advice on climate change and its impacts, particularly in relation to our monitoring and scientific understanding of Scotland’s environment;

3. Helping Scotland to adapt – where we demonstrate our work in helping Scotland to become more resilient to a changing climate, particularly with respect to sustainably managing flood risk;

4. Working with Scottish business – where we summarise some of the work we do to help Scotland move to a low carbon economy and use resources efficiently;

5. Acting sustainably – where we provide examples of how we have acted to promote sustainability through our day to day business.

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2 The guidance covering sustainability reporting can be found on the Scottish Government’s website here:
http://www.scotland.gov.uk/Publications/2013/07/4721

3 For full details and for draft statutory advice, go to: www.scotland.gov.uk/Publications/2014/05/9242/0
To help us manage our own environmental impacts, we are audited against the internationally recognised Environmental Management System (EMS) standard ISO 14001. We maintain certification to this standard for all sites and all activities, covering both our direct environmental impacts and our core services. We are audited twice a year by an external accredited body to ensure that we meet the minimum requirements of ISO 14001.

Supporting this is our internal environmental policy statement. This statement sets out our policies in managing our own environmental performance. It was updated during 2013-2014 as part of a regular review required by our certification to ISO 14001.

An internal steering committee, chaired by our Chief Executive, is responsible for guiding the implementation of our internal environmental policy. We also have a Green Network of staff volunteers who help put our policy into action by undertaking and co-ordinating activities across our local offices.

All the data and statements in this report have been verified by an independent third party to ensure transparent and robust reporting. The statement summarising the full verification report can be found on page 43.

Our internal environmental policy statement

<table>
<thead>
<tr>
<th>Legal compliance</th>
<th>Fossil fuels and climate change</th>
<th>Transport and travel</th>
<th>Waste and resource use</th>
<th>Sustainable procurement</th>
<th>Biodiversity</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPA will ensure that as a minimum it will identify and comply with all relevant environmental legislation and any other voluntary or binding requirement to which it subscribes.</td>
<td>SEPA will measure its fossil fuel energy consumption and set targets to reduce its emissions of greenhouse gases. SEPA will plan and prepare for a changing climate through its behaviour, and its powers and duties.</td>
<td>SEPA will encourage the use of communications technologies to reduce the need to travel and will promote the use of more sustainable transport options for its staff where travel is necessary.</td>
<td>SEPA will seek to decrease its consumption of resources by minimising wastes through reduction, reuse, and recycling as more sustainable alternatives to disposal.</td>
<td>SEPA will specify wherever practicable the purchase of more sustainable goods and materials and will encourage its suppliers to demonstrate their commitment to environmental best practice.</td>
<td>SEPA will lead by example by encouraging and enhancing biodiversity on its own estate.</td>
<td>SEPA will communicate openly about its environmental policy, plans and performance and will publish details of its environmental performance annually. It recognises the contribution made by its staff and aims to motivate employees to conduct their operations in an environmentally responsible manner.</td>
</tr>
</tbody>
</table>
Our general purpose is to protect and improve the environment (including managing natural resources in a sustainable way). In doing this, we must also contribute to improving the health and wellbeing of the people of Scotland and to achieving sustainable economic growth.\(^4\)

We do this in a wide range of different ways, including:

- dealing with pollution incidents and environmental crime;
- enforcing environmental laws and regulations proportionately and effectively;
- monitoring the condition of Scotland’s environment against standards;
- working in partnership to deliver shared objectives that contribute to the National Performance Framework;
- providing information and advice to help improve understanding of the environment and inform decisions;
- promoting the benefits of a high quality environment for health, well being and the Scottish economy.

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\(^4\) For full details and for draft statutory advice, go to: [www.scotland.gov.uk/Publications/2014/05/9242/0](http://www.scotland.gov.uk/Publications/2014/05/9242/0)
Our values

Environment
• Understanding, protecting and improving the environment.
• Improving our own environmental performance.

Engagement
• Seeking out productive partnerships and always treating our customers with respect.
• Achieving more by working together as one SEPA.

Excellence
• Achieving high standards in our pursuit of excellence.
• Being the best by continually developing and improving.
Overview of our performance against our environmental targets

Our targets for 2013–2014

**Overall energy and greenhouse gas emissions (CO₂e)**

**Our target:** Reduce our greenhouse gas emissions by 42% by 2020 compared to a 2006–2007 baseline.

**How did we do?**
Our overall emissions of CO₂e rose by 2.75% during 2013–2014. This temporary rise was anticipated as we consolidated a significant part of our estate during 2013-2014 and use of buildings overlapped for part of the year. Our overall emissions are now down by 11.9% from our 2006-2007 baseline.

We have also estimated separately our emissions performance using a calculated indicative Scottish electricity grid factor; although this calculation is not included in the scope of data verification for this report. Using this approach we have estimated that by 2013-14 we have achieved a reduction of 32% in emissions against our 2006-2007 baseline. This is due to the high percentage of renewable electricity generation in Scotland.

**Transport and travel**

**Our target:** Maintain transport and travel emissions at 2012–2013 levels.

**How did we do?**
We reduced emissions of CO₂e from all transport and travel by 9.6% during 2013–2014. During the year we reduced emissions from our business car mileage by 10.2% and emissions from flights by 22.2%.

**Waste**

**Our target:** Continue to work towards the national 2025 zero waste targets and maintain levels of recycling or re-use above 65%

**How did we do?**
We continued to achieve the milestones set against the 2025 Scottish zero waste goals. We recycled 72% of our waste during 2013-2014, well ahead of our target. In total 88% of our waste was diverted from landfill during the reporting year.

**Biodiversity**

**Our target:** Biodiversity Action Plans in place for each appropriate SEPA office location.

**How did we do?**
We achieved our target and plans are in place and being implemented. Through the year a range of biodiversity projects have been implemented across our estate and through outreach work.

**Procurement**

**Our target:** 25% sustainability weighting in SEPA’s procurement of eligible goods and services by 2017.

**How did we do?**
By March 2014 sustainability to represent a minimum of 10% of the scored assessment criteria used to select eligible targeted goods and services.

**How did we do?**
Our Procurement staff continue to promote sustainable procurement across SEPA and good progress is being made to develop the means to achieve our longer-term goal. 10% target was met.
Planning for the coming year: our targets for 2014–2015

**Overall energy and greenhouse gas emissions (CO₂ e)**
Reduce our greenhouse gas emissions by 42% by 2020 compared to a 2006–2007 baseline.

**Transport and travel emissions**
Maintain (or reduce) transport and travel emissions at 2013–2014 levels.

**Buildings energy emissions**
Reduce greenhouse gas emissions from our buildings by 5% compared to 2013–2014.

**Waste**
Continue to work towards the national 2025 zero waste targets and to maintain levels of recycling or re-use above 65% in 2014–2015.

**Procurement**
25% sustainability weighting in SEPA’s procurement of eligible goods and services by 2017.

By March 2015 sustainability to represent a minimum of 15% of the scored assessment criteria used to select eligible targeted goods and services.

**Biodiversity**
Implement Biodiversity Action Plans and update as necessary.
1. Acting as an exemplar

We recognise that we have a key role in demonstrating and sharing good practice in managing our own environmental impacts and acting as an exemplar that others can learn from. We have, since 1998, reported annually on our environmental performance in an open and transparent way.

Identifying our environmental impacts

Using the ISO 14001 Environmental Management System has allowed us to identify and rank all of our most significant environmental impacts. These include:

**Transport and travel**
We use vehicles, trains, buses, planes and boats to carry out our day-to-day responsibilities. This results in the burning of petrol and diesel, which releases emissions including:
- greenhouse gases (GHG) such as carbon dioxide (CO₂), which contributes to climate change;
- oxides of nitrogen (NOₓ), which contributes to local air pollution and photochemical smog;
- sulphur dioxide (SO₂), which contributes to acid rain.

**Energy**
We use electricity in offices and laboratories to power electrical equipment, and we use gas to power our central heating. Whether directly in central heating boilers, or indirectly at electricity generating power stations, burning fossil fuels emits greenhouse gas emissions and other gases such as sulphur dioxide (SO₂).

**Water**
We use water in offices to drink, as part of analytical processes in laboratories, and to flush toilets. Abstracting water from different watercourses can lead to reduced flow and impacts on habitats and species, while the process of treating it to drinking water standards produces emissions of CO₂. Despite waste water being cleaned at sewage treatment works, it can still lead to pollution of rivers, lochs and the sea.

**Materials**
We purchase goods and services to facilitate our work. The process of manufacture and delivery of these goods and services has environmental effects, through, for example, the extraction and processing of raw materials, generation of waste and emissions from transport.

**Waste and disposal**
We generate a variety of wastes, including: building materials when refurbishments take place or new buildings are constructed; chemicals and consumables in laboratories; stationery in offices; food and packaging for day-to-day activities.
Reducing our greenhouse gas emissions

As an exemplar we want to be very clear, open and honest about the quantities of greenhouse gases (GHG) that we are responsible for emitting. We firmly believe that all organisations should try and reduce their individual and collective emissions of GHGs.

To calculate our GHG emissions we use a method promoted by the UK Government’s Department for Environment, Food and Rural Affairs (Defra) and recommended by the Scottish Government’s sustainability reporting guidance. Defra’s guidance provides annual conversion rates for fossil fuel energy consumption in all its forms into the equivalent emissions of carbon dioxide (CO₂e).

In August 2013, Defra released a significant update to its guidance including new emissions factors for 2012-2013 and 2013-2014. We have updated the way we calculate our emissions inventory to reflect these changes and have also recalculated our emissions for 2012-2013. The guidance instructs organisations to re-calculate their emissions target baseline in line with the new method, which we have also done. A further significant change adds the effect of ‘radiative forcing’ to emissions from flights. This update adds a 90% uplift to all flights emissions to take account of the additional warming impact from water vapour emitted by aircraft contrails at altitude.

Due to the changes to the method and conversion factor being backdated only to 2012-2013, we cannot present three years’ worth of comparative data as in previous years. However, the benefits of the revision mean that the methodology is very unlikely to change again in the near future and therefore we will be able to report consistently from 2012-2013.

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5 Current guidance and conversion factors are on the Defra website: www.defra.gov.uk/environment/economy/business-efficiency/reporting/
### Table 1. Emissions of carbon dioxide equivalent (tonnes of CO$_2$e) by source for 2012-2013 and 2013-2014

<table>
<thead>
<tr>
<th>Source</th>
<th>2012-2013 Carbon dioxide equivalent tonnes</th>
<th>2013-2014 Carbon dioxide equivalent tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>545.84</td>
<td>414.16</td>
</tr>
<tr>
<td>Fuel Oil</td>
<td>20.18</td>
<td>17.91</td>
</tr>
<tr>
<td>Sir John Murray (SEPA’s survey vessel)</td>
<td>143.42</td>
<td>145.07</td>
</tr>
<tr>
<td>Pool Vehicles Fuel</td>
<td>247.68</td>
<td>243.36</td>
</tr>
<tr>
<td><strong>Scope 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity Generation kWh</td>
<td>1,625.41</td>
<td>1,931.36</td>
</tr>
<tr>
<td><strong>Scope 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity T&amp;D losses kWh</td>
<td>128.40</td>
<td>165.12</td>
</tr>
<tr>
<td>Business Car Mileage</td>
<td>667.87</td>
<td>599.87</td>
</tr>
<tr>
<td>Rail</td>
<td>133.73</td>
<td>117.57</td>
</tr>
<tr>
<td>Ferry</td>
<td>1.49</td>
<td>2.43</td>
</tr>
<tr>
<td>Air Domestic</td>
<td>16.75</td>
<td>9.79</td>
</tr>
<tr>
<td>Air Islands</td>
<td>41.95</td>
<td>34.55</td>
</tr>
<tr>
<td>Air Short Haul</td>
<td>45.11</td>
<td>29.55</td>
</tr>
<tr>
<td>Air Long Haul</td>
<td>0</td>
<td>6.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,617.83</strong></td>
<td><strong>3,717.61</strong></td>
</tr>
<tr>
<td>Average number of employees</td>
<td>1,173</td>
<td>1,211</td>
</tr>
<tr>
<td>Emission per member of staff (tonnes)</td>
<td>3.08</td>
<td>3.07</td>
</tr>
<tr>
<td>Out of Scopes Pool Vehicles Fuel (biofuel)</td>
<td>5.21</td>
<td>5.11</td>
</tr>
<tr>
<td>Out of Scopes Wood Pellet (biofuel)</td>
<td>66.46</td>
<td>28.79</td>
</tr>
</tbody>
</table>

Technical Notes about this table: See Annex 1

SEPA’s 2006-2007 baseline is 4,218 tonnes of CO$_2$e. Emissions in 2013-2014 were 3,717 tonnes showing a reduction of 11.9%. Our emissions increased by 2.75% from 2012-2013, although a rise was anticipated by predictions in our ‘greenhouse gas routemap’ as we continued to consolidate our estate by closing two offices in East Kilbride, partially closing a third in Edinburgh and moving in July 2013 to our new combined laboratory and offices: the Angus Smith building in Holytown, North Lanarkshire. These existing buildings continued to operate during the migration period and emissions from them are included in our inventory. However, the additional emissions were temporary as they have now been vacated.
Greenhouse gas routemap
To help predict what our emissions are likely to be over the coming two to three years, we have developed a greenhouse gas routemap. This spreadsheet based tool takes account of planned changes to our estate as well as behavioural and technical interventions and the likely effect of short term targets. The routemap allows us to identify those areas of our emissions inventory where we can make the greatest savings and target our limited resource.

Our current prediction is that our emissions will continue to rise moderately during 2014–2015 from 2013–2014 levels as we further consolidate our estate and move to a single building in Stirling. Overlap of building operation during the move means that our emissions will rise temporarily. From 2015-2016 our emissions are projected to drop significantly as the benefits of operating from fewer and more energy efficient buildings start to accrue. We will continue to refine our routemap and plot out an emission trajectory with greater certainty during 2014–2015.

How we oversee our energy use
During 2013–2014, we established a new internal management group – the Buildings Energy Performance Group. This group is tasked with co-ordinating efforts from across the agency to help reduce emissions from buildings, using the routemap as a guide of how and where efforts need to be prioritised. A new internal buildings energy management policy has been developed that provides the framework for action to reduce emissions from our estate and delivery of the new target to reduce emissions from our buildings by 5% in 2014–2015. In early 2014, we identified the top emitting buildings in our estate that we will focus our attention on, and individual buildings energy groups have now been set up in four biggest offices to help deliver building specific energy reduction actions.

Updating our information systems
As part of the programme to update our PC infrastructure, we took the decision to implement Virtual Desktop Infrastructure (VDI) to deliver desktop services to staff. VDI terminals use approximately 14% of the energy (11 watts against about 80 watts) of a traditional desktop or laptop computer and allow staff to access the same ‘desktop’ and suite of applications and data from any workstation. The initial rollout was done as part of the move to our Angus Smith Building and with financial support from the Scottish Government. This approach allows us to be more flexible as well as to reduce energy consumption from our IS equipment. VDI roll out will continue to other offices in 2014–2015.

Planning for the coming year: our GHG emissions targets for 2014–2015
- To reduce our carbon dioxide equivalent (CO₂e) emissions from fossil fuel by 42% by March 2020 from 2006–2007 levels.
- To reduce greenhouse gas emissions from our buildings by 5% compared to 2013–2014.
Transport and travel

We have made significant progress in reducing our emissions from transport and travel over the past three years. To ensure that we consolidate these gains, we set a target to maintain emissions at 2012–2013 levels. This year-on-year target supported our long term 42% emissions reduction target. During 2013–2014, we continued to make significant reductions in our transport and travel emissions. Our emissions dropped by 9.6% in total, with particular progress made in further reducing business car emissions (down more than 10%) and emissions from flights (down by 22%).

Some travel is absolutely necessary, for example to collect samples for analysis in our laboratories or sites visits and inspections as part of our regulatory duties or when responding to pollution incidents. However, much of our success with this target is the willingness of our staff members to apply SEPA’s ‘travel hierarchy’ before making a decision on travel, particularly for meetings. Our hierarchy presents a series of options to help staff identify the most environmentally sustainable mode of transport where travel is necessary.

- Question need to travel
- Use alternatives to travel: tele, video & web
- Public transport
- Cars and flights are final alternative

Our use of web-based meetings grew significantly during 2013–2014 as a result of rolling out new software – called Intercall – which allows greater functionality in telephone and web-conferencing, including simultaneous screen sharing. In its first four months 741 members of staff registered to use the system. During a six month period in 2013, SEPA held 4,597 individual conferences using Intercall. The introduction of this system has resulted in a significant reduction in travel costs and emissions at the same time as increasing efficiency by allowing staff to spend a greater proportion of their time on their duties, rather than travelling.

Table 2. Emission of carbon dioxide equivalent (tonnes of CO\textsubscript{2}e) from transport by source for 2012-2013 and 2013-2014

<table>
<thead>
<tr>
<th>Source</th>
<th>2012-2013 Carbon dioxide equivalent tonnes</th>
<th>2013-2014 Carbon dioxide equivalent tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1 Pool Vehicles Fuel</td>
<td>247.68</td>
<td>243.36</td>
</tr>
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<td>Business Car Mileage</td>
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</tr>
<tr>
<td>Air Long Haul</td>
<td>0</td>
<td>6.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,155.74</strong></td>
<td><strong>1,044.00</strong></td>
</tr>
<tr>
<td>Average number of employees</td>
<td>1,173</td>
<td>1,211</td>
</tr>
<tr>
<td>Emission (tonnes) per member of staff</td>
<td>0.98</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>Out of Scopes</strong> Pool Vehicles Fuel (biofuel)</td>
<td>5.21</td>
<td>5.11</td>
</tr>
</tbody>
</table>

Technical notes on this table: See Annex 1

Transport - how did we do?

**Our target:** to maintain or reduce further emissions levels achieved in 2012-2013 for travel and transport

**Our performance:** We reduced emissions of CO\textsubscript{2}e from transport by 9.6% during 2013–2014. During the year we reduced emissions from our business car mileage by 10.2% and emissions from flights by 22.2%.
Disturbance mileage emissions
From July 2013, SEPA has paid disturbance mileage to members of staff re-located to work from the new Angus Smith Building. The payments were made to those members of staff whose commuting miles were further than they travelled to their previous location and cover the additional distances they travelled. During 2013–2014 staff were reimbursed through their expenses for a total of 413,002 miles, which is equivalent to 156.2 tonnes of CO₂e. These emissions are not included in our total emissions inventory as they will end before 2020 when our target date is reached, however for transparency we are reporting them.

Planning for the coming year: our transport and travel target for 2014–2015
- To maintain or reduce further emissions levels achieved in 2013-2014 for travel and transport.

Reducing car miles - achieving sustained reductions
As part of delivering our services, some travel by car will always be necessary. However, for many journeys, such as travelling between offices or when meeting partner organisations, there is scope to use alternatives. For the past five years, we have set targets aimed at reducing emissions from our business car mileage and the results have been very impressive. In 2009–2010 our staff travelled 2.9 million miles using their own vehicles. In 2013–2014, this had reduced by 43.4% to 1.6 million miles. This is equivalent to a reduction of approximately 400 tonnes of CO₂e from this source. This has been achieved in part by a shift to public transport, but also by an increase in use of video conferencing and teleconferencing technology such as Intercall.
Our corporate waste targets in line with Scottish Government zero waste policy, are:

- separate key dry recyclables at source by 31 December 2013;
- reuse and recycle 50% of waste materials by 2020;
- 70% recycling/composting and preparing for re-use of all waste by 2025;
- no more than 5% of all waste to be consigned to landfill by 2025.

During 2013–2014, we achieved the first three of these national targets. Our long term target of "no more than 5% waste being consigned to landfill by 2025" will continue to reduce our environmental impact and help meet the Scottish Government’s Zero Waste Plan targets. In 2013-2014 we also continued to achieve our milestones set against the 2025 Scottish zero waste target. We recycled 72% of our waste during 2013-2014, exceeding our target to maintain levels of above 65%. In total 88% of our waste was diverted from landfill as 36 tonnes of our waste was sent to either a materials recycling facility (MRF) or was incinerated to derive energy in an Energy from Waste (EFW) facility.

Our Green Network is important to the success of this measure. With the help of our facilities staff and waste contractors, they are responsible for coordinating the segregation of key dry recyclables; conducting local waste audits to check progress; and continuing to work towards further improved segregation to increase the range of waste materials we either avoid producing or can recycle.

We will continue our efforts to reduce the volumes of waste materials we produce through the principals of the waste management hierarchy; to actively recycle unavoidable wastes; and to meet or exceed the Zero Waste targets before the target date of 2025.

Table 5. Key waste data 2013-14

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>2011-2012</th>
<th>2012-2013</th>
<th>2013-2014</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Wastes1</td>
<td>198.2 tonnes</td>
<td>182.4 tonnes</td>
<td>225 tonnes</td>
<td></td>
</tr>
<tr>
<td>Total Wastes Recycled2</td>
<td>137.6 tonnes (69% recycling rate)</td>
<td>133.7 tonnes (73% recycling rate)</td>
<td>161.67 tonnes (72% recycling rate)</td>
<td></td>
</tr>
<tr>
<td>Landfill Diversion3</td>
<td>NA</td>
<td>NA</td>
<td>197.99 tonnes</td>
<td></td>
</tr>
<tr>
<td>Waste Expenditure4</td>
<td>£26,1295</td>
<td>£25,565</td>
<td>£37,182</td>
<td></td>
</tr>
<tr>
<td>Greenhouse Gas Emissions from waste5</td>
<td>NA</td>
<td>426.6 tonnes CO₂e</td>
<td>515 tonnes CO₂e</td>
<td></td>
</tr>
</tbody>
</table>

Technical Notes: See Annex 1
Reduction in greenhouse gas emissions from recycling - Scotland’s Carbon Metric

The Scottish Government’s Sustainability Reporting Guidance contains advice on how to calculate and present greenhouse gas emissions arising from waste. In particular, the use of conversion factors supplied by Zero Waste Scotland allows an organisation to quantify the environmental benefits from waste prevention, particularly recycling.

These factors form the foundation of the Carbon Waste Metric and are based partly on a consumption approach to carbon accounting. They include the impact of producing materials, as well as the impact of disposing of them, creating a more complete picture of the impacts from waste. Negative figures in the table below indicate a net saving, and suggests that our recycling activities prevented 44.3 tonnes of CO₂e being released to the atmosphere during 2013-2014. Recycling can have a net saving because the benefits of avoiding landfill and no requirement to use virgin materials are included in the factor.

Table 6. Greenhouse gas emissions from SEPA’s waste management 2013-14

<table>
<thead>
<tr>
<th>SEPA Recyclates Category</th>
<th>Equivalent ZWS factor</th>
<th>Factor (kg of CO₂e per tonne)</th>
<th>SEPA waste (tonnes) 2013-2014</th>
<th>Greenhouse Gas Impact (kg CO₂e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arisings</td>
<td>Household and similar wastes: arisings</td>
<td>2,415</td>
<td>225.04</td>
<td>543,471.60</td>
</tr>
<tr>
<td>Landfill</td>
<td>Household and similar wastes: disposal</td>
<td>472</td>
<td>27.05</td>
<td>12,767.60</td>
</tr>
<tr>
<td>General waste - MRF/EFW ≥</td>
<td>Household and similar wastes: incineration</td>
<td>16</td>
<td>36.32</td>
<td>581.12</td>
</tr>
<tr>
<td>Paper</td>
<td>Paper and cardboard wastes: recycled</td>
<td>-315</td>
<td>77.8</td>
<td>-24,507.00</td>
</tr>
<tr>
<td>Cardboard</td>
<td>Paper and cardboard wastes: recycled</td>
<td>-315</td>
<td>9.86</td>
<td>-3,105.90</td>
</tr>
<tr>
<td>Mixed Recyclates</td>
<td>Household and similar wastes: recycled</td>
<td>-279</td>
<td>35.36</td>
<td>-9,865.44</td>
</tr>
<tr>
<td>Glass</td>
<td>Glass wastes: recycled</td>
<td>-201</td>
<td>15.59</td>
<td>-3,133.59</td>
</tr>
<tr>
<td>Metal Cans</td>
<td>metallic wastes, mixed: recycled</td>
<td>-2,235</td>
<td>0.6</td>
<td>-1,341.00</td>
</tr>
<tr>
<td>Plastics</td>
<td>plastic wastes: recycled</td>
<td>699</td>
<td>3.08</td>
<td>2,152.92</td>
</tr>
<tr>
<td>WEEE2</td>
<td>Discarded machines and equipment: recycled</td>
<td>-181</td>
<td>2.69</td>
<td>-486.89</td>
</tr>
<tr>
<td>Batteries</td>
<td>batteries and accumulators wastes: recycled</td>
<td>566</td>
<td>0.57</td>
<td>322.62</td>
</tr>
<tr>
<td>Food</td>
<td>animal and mixed food wastes: composted</td>
<td>-113</td>
<td>16.04</td>
<td>-1,812.52</td>
</tr>
<tr>
<td></td>
<td><strong>Balance</strong></td>
<td></td>
<td></td>
<td><strong>$15,043.52</strong></td>
</tr>
</tbody>
</table>

6 Waste Electrical and Electronic Equipment
Improvements to waste management during 2013-2014

In addition to organising the collection of key dry recyclates (metals, glass, plastics, paper and cardboard) during 2013-2014 our Green Network members took forward the following activities to further reduce the impact of waste at their own buildings:

**Dingwall - outreach and litter-picks**
The Dingwall office has been composting waste for a number of years and has been able to analyse weight data since 2005 to gain a better understanding of our waste habits over time. Staff at the building currently operate three composters and in 2013 they introduced a new wormery for biodegradable wastes. During 2013, two waste audits were carried out to help identify what areas of waste management require greater effort to further improve segregation and recycling rates. Green network members have organised litter picks in recent years on and around the Dingwall Business Park. This year volunteers from five different organisations, including a local nursery and fish factory, took part.

**Dumfries - waste audits and recycling improvements**
Green Network members undertook a waste audit to provide information on what wastes were recycled and to identify improvements they could make to increase recycling rates locally. Staff also introduced separate recycling receptacles along with improved signage to continue efforts to meet the requirements of the Scottish Zero Waste Regulations. Collection points for stationary and WEEE (waste electrical and electronic equipment) items were also established.

**Kirkwall - paper reductions**
Local staff at Kirkwall monitored paper use for the first half of 2013-2014 and took forward measures to reduce consumption. At the end of the year the measures resulted in a 31% reduction in paper use which equated to 7,000 sheets of paper saved.

**East Kilbride - reuse and recycling of surplus equipment**
During the move from our East Kilbride offices to the Angus Smith Building, most of the furniture and laboratory equipment was moved to the new building and re-used. Where equipment was not able to be re-used by SEPA then alternative uses were sought, so that as few items as possible were wasted. For example, staff arranged the donation through a social enterprise company Waste Match, of surplus stationary items such as ring binders, clip boards and other stationery items to the organisers of the Glasgow 2014 Commonwealth Games.

Two van loads of surplus glassware from our old East Kilbride Laboratory was donated to St. Andrews and St. Bride's High Schools in East Kilbride to support their science education work. The glass cannot be recycled due to its special heat and chemical resistant properties and would otherwise have been landfilled. All other surplus furniture from East Kilbride such as storage pedestals, meeting tables, chairs were donated to the charity Scotia Aid Sierra Leone.

**Planning for the coming year: our waste target for 2014–2015**
- Continue to work towards the national 2025 zero waste targets and to maintain levels of recycling or re-use above 65% in 2014–2015.
**Water**

In previous reports, we have summarised our progress in reducing water use. Unfortunately, this year we are unable to provide water consumption data due to incomplete metered information for 2013–2014 and the extensive estate changes we have made during the year. We intend to improve the reliability of water consumption data during 2014-2015 and will report fully in our next sustainability report.

**Biodiversity**

We met our interim target to update existing biodiversity action plans (BAPs) at all offices with grounds under SEPA’s control. By March 2014, we operated from 24 offices, 19 of which have grounds. All 19 of these offices submitted a new Biodiversity Action Plan. The two newly-occupied offices, the Angus Smith Building and the Lochgilphead local office, also submitted their first BAPs. The content of all the plans submitted in 2013-2014 now include plans for outreach work; links to national and local biodiversity projects; and planned methods of measuring success e.g. survey, photographic record, wildlife sightings.

We have also updated and expanded guidance on biodiversity improvement measures, which are located on an improved intranet site that contains a central repository for all our office BAPs to encourage sharing of good practice between offices.

During 2013-2014 SEPA also took forward a range of local activities and participated in outreach work to ‘spread the message’ to other stakeholders.

**Specific biodiversity improvement activities**

Our Green Network members and staff volunteers have been working hard, maintaining existing features and carrying out new activities to benefit biodiversity in SEPA office grounds. The most popular features are bird feeders, pollinator-friendly and/or native planting, and grassland meadows created through selective mowing, featuring at 15, 13 and 11 offices respectively. Other features adopted at more than 5 offices are bird boxes, log piles, planting in containers, native species hedges and edible gardens.

New measures to improve conditions for wildlife carried out this year include additional bird feeders at five offices plus installation of assorted homes for wildlife including bird boxes (Ayr, Lochgilphead), bat boxes (Elgin, Fort William), insect homes and a hedgehog house. New planters were installed at three offices, while new native hardy mixed trees and shrubs were planted at Aberdeen and Dumfries.

This year we created a bespoke form for uploading wildlife sightings at SEPA office grounds to [iRecord](#). This is a website for managing and sharing wildlife observations, including associated photos. An increasing number of animal species have been observed, some for the first time, on the SEPA office estate, including several species of butterflies, bees, hoverflies, dragonflies, newts, birds and mammals. The ponds at Newton Stewart and Dingwall have both been naturally colonised by plants and aquatic animals, including dragonflies, water boatmen and newts, while birds have once again successfully bred in our grounds. At Bremner House, in Stirling, wildlife visitors were captured on film by a motion sensitive trail camera, on loan from Scottish Natural Heritage (SNH).
**Biodiversity outreach**
The purpose of outreach is to share our experience with other organisations and individuals to encourage them to adopt similar activities in order to bring about a greater overall benefit for biodiversity. Outreach activities in 2013–2014 included:

- At the Angus Smith Building our Green Network members and volunteers established a wildflower meadow on waste ground on the business park close to the building. This has generated interest amongst other organisations on the business park.

- To mark Climate Change Week at the Strathearn building in Perth, staff put on an organic gardening exhibition in the main foyer of the building, sold plants from The Walled Garden Perth (a charity organic garden), and carried out some planting.

- We have been working with ‘Take a Pride in Glenrothes’ to encourage others in the business community to plant their grounds to increase biodiversity. Local staff presented the biodiversity work carried out in their office grounds in Glenrothes at a showcase event for the judging day of the ‘Britain in Bloom’ and ‘Beautiful Fife’ awards, and also took part in a ‘Beautiful Fife’ seminar to exchange good practice with representatives of more than 30 community groups.

**Planning for the coming year: our biodiversity target for 2014–2015**
Implement Biodiversity Action Plans and update as necessary

Additional desirable outcomes for 2014–2015 are to:

- refresh the layout and content of the practical guidance on the ‘Biodiversity on SEPA grounds’ intranet page;
- promote the SEPA iRecord webpage for wildlife observations through the intranet, Staff Bulletin, InsideView and Ecology newsletter.
2. Acting as a climate change leader and adviser

As one of the ‘major players’ identified in the guidance on the Public Bodies’ Climate Change Duties issued by Scottish Government, we are well placed to fulfil a role as a leader and adviser on climate change, working in partnership with other public bodies. We have an important role in understanding and communicating the science of climate change and the resulting impacts on Scotland’s environment. We aim to communicate that to policymakers, decision takers and the public through a range of media in order that businesses, communities and important national assets are resilient to future climate change.

Our work in 2013–2014 in this area has included:

**Our Climate Challenge**

During 2013–2014 we completed our new climate change plan: Our climate challenge. This provides the strategic direction for our work on climate change for the coming five years. This is our response to the challenge posed to public bodies by the Climate Change (Scotland) Act 2009. As a ‘major player’ and as Scotland’s principal environmental regulator, we have adopted a plan with which we aim to make a significant contribution to the challenges posed by climate change.

Our climate challenge was published on 3 March 2014, as part of our contribution to Climate Week 7 (3-10 March 2014) and alongside supporting material, including a short video from our Chief Executive which were used in Twitter feeds.

It sets outcomes for the next five years with a view to realising our Climate Change Vision which states that:

“SEPA will do everything in its power to help Scotland address climate change to ensure Scotland’s environment, economy and communities flourish.”

The plan is grouped under four strategic themes, with a stated ambition for each theme. These are:

- **Acting as a key climate change leader and adviser**: SEPA is one of Scotland's leading authorities of climate change, acting as an independent adviser to government to support leadership and action through our monitoring, regulation and scientific understanding of climate change.

- **Helping Scotland to adapt**: SEPA plays a key role in creating a resilient Scotland in response to a changing climate and assisting delivery of Climate Ready Scotland.

- **Working with Scottish business**: SEPA works with Scottish businesses using its regulatory powers and duties to help Scotland move to a low carbon economy, which uses resources sustainably, fosters innovation, delivers renewable energy targets and is resilient to climate change.

- **Being an exemplar and educator**: SEPA is a leading exemplar and educator in managing its greenhouse gas emissions, preparing for a changed climate and acting sustainably.

The plan is more ambitious and outward-focused than its predecessor and provides a basis for allocation of resources to achieve these outcomes. Our climate challenge is linked to the business planning process to enable the plan’s ambitions to be realised through our routine business.

We recognise the importance of partnerships. Our intention through the plan is to strengthen joint working arrangements to add value to our own and others’ work, and make the best use of resources. The plan also recognises the inter-connected nature of many of the issues and challenges posed by climate change, for example the links between changing climate, air quality and health – or between changing climate and ecosystem services where land management can influence flooding.

As part of the plan process, governance arrangements were reviewed to ensure mechanisms were in place to scrutinise the plan’s progress.
Advice to Scottish Government and the Scottish Parliament
SEPA continues to provide advice about climate change as it relates to our core functions and areas of competence to government and to parliament. In January 2014, we provided both written⁸ and oral evidence on climate change aspects of the third National Planning Framework (NPF3).

We also provided written evidence to Scottish Government and oral evidence⁹ to a roundtable evidence sessions of the Rural Affairs, Climate Change and Environment Committee in October 2013. The latter focussed on the infrastructure and society aspects of climate change adaptation in Scotland. We explained to the Committee how SEPA is planning ahead for the impacts of climate change on society and infrastructure, including response systems (e.g. flood warning and managing flood risk), and our preparedness.

Partnerships for climate action
We recognise the value of working with partners and stakeholders: adding value, securing multiple benefits from resources invested and achieving shared outcomes. We continue to be an active supporter and participant in a number of climate change partnership arrangements, including: the Climate Change Delivery Board; the Public Sector Climate Leader’s Forum and its supporting Climate Leaders’ Officer Group (CLOG); the Climate Champions and the 2020 Climate Group. We are also part of a ‘four agency’ partnership on climate change with Scottish Natural Heritage, Forestry Commission Scotland and Historic Scotland – and work with CAMERAS (Co-ordinated Agenda for Marine, Environment and Rural Affairs Science), the Sustainable Scotland Network and Adaptation Scotland on climate change science, policy and practice.

Air quality and climate change
In 2013 we undertook a review of literature on the interactions between climate change and air quality and over the past year we have been exploring opportunities to tackle emissions to air that adversely affect human health, the environment and climate change. In the light of this we have responded to a number of planning applications from a local air quality perspective and have, where relevant, highlighted opportunities to consider air quality and climate change impacts together. SEPA liaises closely with local authorities in the context of the Local Air Quality Management regime to identify opportunities to manage local air quality and climate change alongside each other. We are currently running an urban air quality problem solving project which contains four workstreams all of which have considered interactions and synergies with climate change.

Industrial emissions directive (IED) implementation
SEPA is an active member of a sub-group of the Industrial Pollution Control Steering Group of UK regulators that has been established to share experiences with the implementation of the new Industrial Emissions Directive. This has allowed SEPA to have a direct influence on the UK’s overall negotiating position in Europe regarding BAT Reference Documents (BREFs) which may have significant implications for industry and, recommendations we made on how to address some of the more contentious issues surrounding BREF development have recently been adopted as the UK position. This will help us to ensure that the Scottish perspective is reflected during the development of guidance and relates to sectors that are economically important to Scotland. Membership of the group is also vital to establish consistency of interpretation across the UK or an understanding of the issues where interpretation may vary.

Heat networks
Since April 2013 there has been a substantial amount of work undertaken to develop SEPA’s role in supporting the creation of heat networks and district heating in Scotland. Through 2013–2014 we have:

• contributed to the Scottish Government’s preparation of a national Heat Map during 2013. We have provided significant detailed information on licensed facilities, thermal treatment facility heat plans and planning consultation information on thermal treatment facilities to inform the heat map of potential sources of heat – excess heat and renewable generation.

• attended a Scottish Enterprise ‘learning journey’ to Gothenburg in September 2013 to understand district heating developments and potential sources of heat for networks. Follow-up work was undertaken with partners to feedback on the journey and discuss options for supporting delivery of heat networks across Scotland. Lessons learnt from this have informed the SEPA land use planning guidance notes on heat networks and district heating.

• continued to engage with local authorities in development plan preparation, providing advice about opportunities for heat networks and district heating, and utilising the information from the SEPA land use planning guidance notes.
Citizen science

We have continued our commitment to promoting citizen science and during 2013, carried out a programme of work that focused on local air quality. We investigated the use of citizen science as a way to engage the public, inform and promote environmental awareness, and to encourage behavioural change.

For example, last year we continued to develop the Angler’s Monitoring Initiative in Scotland – known as Riverfly. Riverfly is a partnership project where anglers help to gather data about populations of invertebrate species. This helps us to understand the long term health of our rivers and to show where action to protect and improve them may be required. In the west of Scotland, the Clyde River Foundation trained 67 volunteers in 2013, all of whom started sampling that summer. SEPA has been working closely with this project to set ‘trigger levels’ for sites sampled by volunteers that can help inform about pollution incidents.

In addition, we worked with school pupils and community cycling groups to test and evaluate potential air quality monitoring methods\(^\text{10}\). The cycling activities provided a good indication of potential exposure to air pollution through activities such as commuting to work, particularly through different built-up environments. The work involving school children provided the opportunity to promote awareness of local air quality issues and to encourage actions that would reduce their contribution to air pollution through behavioural changes, such as cycling and walking to school.

We have also contributed to the development of three phone apps. These can be used by the public to record species found in terrestrial, freshwater and marine habitats, which then helps us identify trends in non-native and climate change indicator species distribution and to understand how the environment is changing. PlantTracker, AqualInvaders and SeaLifeTracker are all freely available via Google Play, iTunes and the naturelocator.org website.

During 2013–2014 we have been a prime mover for action in the Network of Heads of European Environment Protection Agencies (EPA Network) on citizen science. In March 2014, a workshop for the EPA Network took place in Copenhagen on citizen science organised by SEPA and the European Environment Agency (EEA).

The workshop was framed to answer two strategic questions:

- How is citizen science useful in the development and delivery of environmental policy?
- How is citizen science useful in getting people involved in caring for their environment?

Our work on citizen science was presented, with a focus on the Riverfly initiative and Scotland’s Environment website and its significance as a gateway to citizen science projects in Scotland. We are also a member of the European Citizen Science Association (ECSA), an association based in the Museum of Natural History, Berlin, supported by organisations from over 10 EU Countries. ECSA was launched in Brussels at Green Week 2013. The goals of the ECSA are European citizenship and public engagement with science, seeking to develop a common European approach.

\(^{10}\) DN: Link to Project Overview Report with findings
SEPA climate change online training module

2013–2014 saw further development of SEPA’s online climate change training module, including continued roll out across our staff. Since September 2013, it has become mandatory training for all new staff and is covered in our Staff Induction programme. We have also been active in widening the reach of the module. We worked in partnership with the Sustainable Scotland Network, Scottish Natural Heritage, Transport Scotland, the Improvement Service and others to develop the SEPA product into an introductory module for use across the public sector. It is planned for this to be rolled out later in 2014.

Ecosystems approach

During 2013–2014, we continued with our work to embed an ecosystems approach across many of SEPA’s activities. This includes work in relation to river basin management planning and flood risk management planning. The ecosystems approach allows us to take full account of the consequences of changes to the environment for people and helps us to make better integrated environmental management decisions. March 2014 saw publication of the final report for the Stirling Ecosystems Approach Project 11, which was jointly funded and designed by SEPA and SNH. The project used an ecosystems approach to engage local stakeholders in discussion about the benefits that land provides to people in the Carse of Stirling.

The project won an award from the Royal Town Planning Institute (RTPI) for the innovative approach that it took to local engagement, and the judges were impressed at how the project considered different land management options and effectively managed the inevitable tensions that arose between different land use issues. The recommendations from this project are now being taken forward by a local steering group and include long term strategies for flood management as an increased risk of flooding was identified as being associated with our changing climate.

11 http://ecosystemsknowledge.net/resources/examples/stirling
3. Helping Scotland to adapt

Scotland is already experiencing some of the projected effects of climate change, including longer growing seasons, river and coastal flooding and increased numbers of landslips. All of these effects will have consequences for Scotland’s communities, businesses and environment. While some may present opportunities, others may pose risks to health and property and potential costs to both individuals and to businesses. As an environmental regulator, we need to know what these changes might be and how we, in carrying out our functions, may need to respond to them. We also have to ensure that our own operations are resilient to changes in climate.

Some of our activities in 2013–2014 in this area include:

**SEPA and flooding**
Our flooding role is central to helping Scotland to adapt to climate change. The Flood Risk Management (Scotland) Act 2009 transposes the EU Floods Directive into Scottish legislation, and sets a framework for the sustainable management of flood risk across Scotland from all sources. It places a general duty on Scottish Ministers, SEPA and all responsible authorities to work together in exercising their powers to reduce overall flood risk. With the UK climate projections indicating a likelihood of more severe and more frequent flooding in the future, our work on mitigating flood risk is absolutely core in helping Scotland to be more resilient to the effects of climate change.

SEPA also has an equality outcome that states that our flood risk services will be accessible to those with the protected characteristics of race, disability and age. This is being progressed in part through partnership working with Regional Equality Councils to promote awareness of our responsibility in relation to flooding, including Floodline and the flood maps.

**Metropolitan Glasgow Strategic Drainage Partnership (MGSDP)**
We continue to contribute resources to the Metropolitan Glasgow Strategic Drainage Partnership (MGSDP), making Glasgow more resilient and unlocking development potential through strategic interventions in drainage. We regularly attend the Development Forum group where member organisations coordinate to resolve drainage and development issues. We are also involved with the recently created Surface Water Group to progress and develop opportunities for improved surface water management in line with the objectives of the partnership – reduction of flood risk, river water quality improvement, enabling of economic development, habitat improvement and integrated investment planning.
New flood maps published
New flood maps for Scotland were published on our website on 15 January 2014, coinciding with a Scottish Government-led Flood Summit. The new maps share more information than ever before with members of the public and will help to raise awareness of flood risk and its potential impacts. They are also a key tool for flood risk management planning and will be used by SEPA, local authorities, Scottish Water, National Park authorities and Forestry Commission Scotland to develop the first co-ordinated plans to tackle flooding. They are also an important resource available to communities, developers and local authorities to inform planning decisions where flood risk may be an issue.

The flood maps received 40,000 views in their first five days online, with visits peaking on the launch day at over 4,000 visitors at any one time. We received good feedback on the look and feel of the maps via social media and coverage of the launch was extensive, including the BBC and many national and local newspapers.

Floodline
During 2013–2014 we continued to provide the Floodline service, which provides members of the public free Flood Alerts and Flood Warnings directly to their phones. By having advance warning of where flooding is likely to occur members of the public can take action to protect themselves, their families and their businesses from the impacts of flooding. The Floodline service also provides advice on what to do before, during and after a flood happens and this information is available on our website, by contacting the call centre (staffed 24/7) or by picking up one of the Floodline leaflets.

We also engaged with a younger audience to raise awareness of flooding, its dangers and how to be prepared through the Floodline school play - Keep calm and call Floodline. In conjunction with the play we also provide workbooks for the school to follow up on the lessons taught by the play. Building on the success of the play in primary schools, we have rewritten it to appeal to a wider audience and this year will tour secondary schools.

Education Scotland (Flood) Resilience Development Officer
We have joined forces with Scottish Government and Education Scotland to fund a post hosted within Education Scotland that will deliver increased community flood resilience through strategic engagement with local authorities and the school sector. The objectives of the post include creating opportunities for children and young people to connect more fully to their communities and to participate in local decision-making and activities in relation to community resilience, especially flooding. Through this initiative, all local authorities will be encouraged to include flooding education in all 2015 local flood risk management plans, supported with teaching material on flooding and resilience that teachers can find and access easily.
Flooding animation
We published a short animation that provides an overview of the more sustainable and risk led approach to flooding. It explains, in a very accessible way, how we are looking at the whole catchment when tackling flooding, so that we don’t move the problem to another part of the catchment. It also shows the range of actions that we will be considering as part of Scotland first ever flood risk management strategies, which will be published by SEPA in 2015.

A new leaflet Working together to deliver Flood Risk Management Strategies and Local Flood Risk Management Plans has also recently been published. This is designed for a public audience and will be used by local authorities and Scottish Water in their own engagement with the public.

Water Environment Fund
Our Water Environment Fund supports projects that directly help adapt and/or mitigate climate change through restoring the morphology (i.e. the condition of the banks, bed and shore) of the water environment and controlling invasive non-native species.

Examples of work supported by WEF in 2013–2014 include:
- restoring a straightened, confined river allows natural processes of channel adjustment to operate, which gives space and freedom for the channel to adjust to a changing climate;
- removing weirs that are barriers to migratory fish helps to increase the size and health of fish populations, which should make them more resilient to changes in climate;
- removing (or setting back) disused embankments can re-connect the flood plain, allowing water to be stored and changes to rainfall and runoff to be natural mitigated.

Over the next year, WEF is planned to become more proactive and targeted, using SEPA’s national datasets on environmental quality to prioritise and target restoration. In future one of the ways we are likely to prioritise will be to give greater weight to projects that are likely to help mitigate the impact of climate change.

Flood risk management - pilot catchments
We have been working on flood risk management projects in four pilot catchments to examine how natural flood management and river restoration may overlap. These projects propose more natural storage and control of flood waters that will potentially help to mitigate the impact of climate change. Working with local landowners and land managers on a voluntary basis is critical to the success of the projects and we are now undertaking one-to-one discussions in all four catchments to see if there is interest in pursuing restoration and natural flood management.

During 2013–2014 good progress was made on the projects including selection of pilot catchments, scoping opportunities for measures delivery and detailed measures design and preparation for measures implementation. At present we currently have four sites (one from each catchment) going through a formal options appraisal and outline design process, and a further tranche of sites expected to enter this project phase in 2014–2015. Non-technical project summaries as well as full reports have been published on our website.
4. Working with Scottish business

We regulate sites that together emit the majority of Scotland’s greenhouse gas emissions. This means that, within the legislative framework in which we must regulate these sites, we are well placed to work with Scottish businesses to help reduce emissions.

We also have a significant role in helping Scotland to move towards a low carbon, zero waste economy by advising business on resource efficiency and waste minimisation.

Recently SEPA have been in contact with the Scottish Affiliation of Regional Equality Councils (SAREC) to discuss partnership working to promote our role and services available to the business community. This approach has been welcomed by SAREC.

Some of our activities in 2013–2014 in this area include:

**Contributing to the debate on Scotland’s economy**

Our Chairman, (David Sigsworth) is a member of the Scottish Energy Advisory Board (SEAB). The Board is chaired by the First Minister and aims to shape the direction of future Scottish energy legislation and policy. David Sigsworth also represents SEPA on the Green Growth Action Plan Steering Group. This plan was jointly co-ordinated by SEPA and Scottish Enterprise and developed in conjunction with industry, SEPA, Scottish Government and the Enterprise Agencies. A Green Growth Programme Board is being established that will help accelerate the pace of delivery of low carbon opportunities in the plan and our Chairman will represent SEPA on that Board. It will be supported by a working group representing the main public sector delivery bodies and we will provide secretariat and co-ordination support.

We are a participant in the Scottish Government’s Circular Economy Evidence Gathering and Engagement Programme and sit on the steering group. The purpose of the programme is to set out a road map for the circular economy with key milestones over the next 5-10 years and ultimately to 2050.

In a UK context, our Chairman is a member of Ofgem’s Sustainable Development Advisory Group (SDAG) providing information and knowledge to assist Ofgem in their role as a sustainable energy regulator. He also represents SEPA in discussions with the Gas and Electricity Markets Authority (GEMA). SEPA is also a member of The Aldersgate Group, a London based group that influences the UK government and government departments on sustainability matters.
**Land-use planning**

We recognise that we have an on-going role in helping to ensure land-use planning takes account of climate change. Effective land-use planning is important to achieving a low carbon outcome, for example in areas such as energy, waste management and transport. It also provides the means to ensure that Scotland adapts to the impacts of our changing climate. We continue to advise and work with planning authorities, the Scottish Government and other agencies to take account of, and respond, to climate change.

For example, through our planning role we:

- continued to provide advice to planning authorities on evolving development plan policies and allocations. For example, the Reporter in the hearing for the *Stirling Local Development Plan* supported our representations to remove development allocations that were at risk of flooding;
- contributed to a project commissioned by Adaptation Scotland to develop a visioning tool to assist decision makers, including planners, in understanding the implications and potential responses to climate change. This has involved providing input to meetings in October and a workshop in December 2013.

**Audits of closed landfill sites**

As waste regulation authority for Scotland, SEPA continues to regulate and support sustainable waste management. We recognise that operational and closed landfill sites are a potent source of greenhouse gas. We seek to regulate landfill gas management to improve collection and minimise emissions of uncontrolled landfill gas.

Regulation of landfills by our Operations teams and the National Operations Waste Unit aims to maximise capture and minimise emissions, using regulatory tools and through negotiation. The National Operations Waste Unit continues to schedule and perform a series of landfill audits, part of whose purpose is to secure improvements in landfill gas management.

Our Closed landfill project aims to identify those landfills where improvements to landfill gas management might be made and in particular, those sites where gas collection might be feasible but as yet has not been commissioned. Target sites for pumping trials to establish whether sustainable extraction/flaring might be possible have been identified.

In 2013, Moleigh Landfill (Argyll) trialled and installed a permanent flare, Black Devon (Clackmannanshire) was commissioning a flare, and trials have been conducted at other sites. Our last sustainability report referenced completed gas capture schemes for sites in the Scottish Borders. These have continued to operate in 2013–2014 although figures for volume/flaring throughput are presently unavailable.

Improving regulation and engagement within the landfill sector, and particularly landfill gas management, has undoubtedly realised benefits in improved capture and reduced emission of landfill gas, resulting in climate change benefits.
Validating carbon assessments for the Scottish Government – onshore windfarms

Through 2013–2014 we continued to validate, on behalf of the Scottish Government, carbon impact assessments undertaken for proposed onshore windfarms of over 50 megawatts sited on peat. Peat soils in Scotland store an estimated 1,600 million tonnes of carbon - over 100 times more than Scotland’s annual greenhouse gas emissions. Peatlands in good condition also provide other benefits in terms of biodiversity, water quality, and for the economy. Our work supports decision-making and aims to maximise the benefits of onshore wind in terms of greenhouse gas emissions by protecting peatlands and the carbon they store.

Our experience on validating carbon assessments provides a legacy of work in advising, influencing and to informing decisions in support of Scottish emissions reduction targets. In 2013-2014 we validated a total of 58 carbon assessments - at all times meeting our ‘100% on time’ target. In addition, we have worked in partnership with ClimateXchange to assess the use of a carbon assessment tool and explore its potential for future expansion. This work will report in 2014.

Zero Waste Regulations - information and signposted support for businesses on waste regulations

To ensure that waste producers are fully aware of their requirements under the Waste (Scotland) Regulations 2012, which came into force on the 1 January 2014, SEPA, in partnership with a number of agencies including Zero Waste Scotland, actively engaged with businesses, the public sector and waste industry to provide information and signpost support.

Hundreds of businesses turned out for briefings and seminars in the run up to the regulations coming into force and over 120,000 flyers were distributed to raise awareness with small businesses. One-to-one engagement also took place with a range of sectors, including supermarkets, shopping centres, cinemas, quick service restaurants and hotel chains.

A key target area was large food waste producers. In 2013, we sent questionnaires to around 400 of the larger food waste producers and used the feedback to help focus support. We are also working closely with the waste industry and will focus effort on waste collectors who persist in offering single mixed collection services with no segregation of recyclables.

Closed landfill – Crow’s Nest, Aberdeenshire

Following an intensive audit of the Crow’s Nest landfill site in November 2011, permit holders Aberdeenshire Council installed a fully compliant shrouded gas flare and upgraded the landfill gas management at the landfill site. The audit was instrumental in bringing forward the installation of the new flare.

Figures obtained and sourced by SEPA from landfill operators and gas contractors for 2013 indicate that this site collected and flared around 2.35 million cubic metres of landfill gas. Without the installation of the flare, this landfill gas would be emitted to the atmosphere. With an average methane (CH4) content of 45%, about 1 million m³ (or approximately 750 tonnes) of methane was processed which would otherwise have been released. Applying recent amendments by Intergovernmental Panel on Climate Change (increasing the global warming potential of methane to 34) results in a saving of about 25,000 tonnes for 2013. Reducing this by 16% to account for combustion results in a saving of over 21,000 tonnes CO₂e.

Technical Notes: See Annex
NetRegs - guidance for businesses on environmental regulations and good practice
The NetRegs website, which was refreshed and improved in 2013–2014, provides guidance for businesses on a range of environmental topics. It explains how they can limit their environmental impacts through compliance with the regulations. Information on NetRegs is organised by business type, with specific guidance for 33 different business sectors. It is also organised according to 13 topic headings, such as air pollution, carbon reduction and efficiency, transport, waste and water.

The number of visitors using the new site has increased considerably in the past year with 14,964 visits in March 2013 compared to 23,832 visits in March 2014 - a 59% increase. The majority of users are looking for explanations of particular pieces of legislation, but topics covering good practice are popular as well. As an example, in March 2014 812 users accessed NetRegs looking for advice on duty of care for waste, 325 on Environmental Management Systems and reports and 111 on buying sustainable goods and services.

VIBES Awards 2013
The VIBES Awards are Scotland’s leading government-backed environmental awards scheme. The awards are a partnership between SEPA, Scottish Government and others. They encourage the efficient use of resources, enhance the competitiveness of businesses, improve environmental performance and support the wider goals of sustainable development.

In 2013-2014, there were ten award categories linking with the 20:20 climate change themes. The scheme achieved a record 83 entries from businesses throughout Scotland. Ten case studies have been produced to share good practice. By contributing towards this partnership we are helping to promote good environmental practice in the wider business community.

Scottish businesses have demonstrated that they are amongst the best in the UK when it comes to environmental good practice. Six businesses from Scotland have been selected to go forward to the finals of the European Business Awards for the Environment (EBAE) to showcase the UK’s environmental excellence - 50% of the 12 UK entrants.

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12 See www.vibes.org.uk
13 Additional partners are Scottish Enterprise, Zero Waste Scotland, Highlands and Islands Enterprise, Scottish water, Energy Saving Trust and Scotland’s 2020 Climate Group – see http://www.vibes.org.uk/sponsors-partners/sponsors/strategic-partners
2013–2014 was a significant year for SEPA which saw the Regulatory Reform (Scotland) Bill passed by the Scottish Parliament and receiving Royal Assent on 19 February. The new Act represents the culmination of many years of work to ensure that we have the right tools to be able to tackle today and tomorrow’s environmental issues effectively and to be able to deploy those tools flexibly to ensure that resources are prioritised to where they can have the most impact. An important part of the new Act is a new general purpose for SEPA, which places our activities on a wider, sustainability based footing.

This new purpose took effect in July 2014 and provides a strong and powerful statement that our work delivers important benefits, not just for the environment but also for communities and the economy. It reinforces the fact that a healthy environment is essential for a healthy population and also for a healthy economy. We will report next year about how we are translating this new statutory purpose into action.

In 2013–2014 we continued to undertake a range of activities that contribute, alongside all of the other activities described in this report, to acting sustainably. These include:

**Sustainable procurement**

We recognise that the way we choose to spend our budget on goods and services may lead to greater or lesser environmental impacts. That is why we have chosen to target our supply chain and to adopt assessments and practices that attempt to lessen those impacts.

We are committed to embedding sustainable procurement principles within our procurement practices, supporting the Scottish Sustainable Procurement Action Plan (SSPAP) and the Scottish Governments Flexible Framework Assessment Tool. We also recognise that we have a role as an exemplar in this area and what we learn may, in turn, be adopted by other organisations to reduce their impacts through more sustainable procurement practices.

Our procurement staff promote sustainable procurement across SEPA and progress is being maintained in developing the means to achieve the longer-term goal of a 25% sustainability weighting in our procurement of eligible goods and services by 2017. A new sustainable procurement policy has been agreed and the Procurement Strategy has been updated to more strongly reflect economic and social issues as well as environmental issues.

Both of these documents have been underpinned by the publication of updated procurement guidelines that promote the consideration of environmental issues. Sustainability is currently included as a mandatory element of at least 5% weighting of the technical assessment of all items sourced by SEPA through our Procurement function. An initial list of possible sustainable criteria that could be used as part of the technical assessment element of our procurement process has been developed and agreed by our Greening SEPA Steering Group.
Angus Smith Building BREEAM ‘Excellent’ award

We moved into our new combined office and laboratory accommodation in Holytown, North Lanarkshire in July 2013. The fit out of the Angus Smith Building was designed to provide a work environment that meets our requirements for the provision of a high quality office and laboratory environment. During the design process we attached great significance to the achievement of a high BREEAM (Building research establishment environmental assessment method) rating and reducing our carbon emissions.

On completion of the design and procurement stage, a BREEAM score of 74.45% - ‘excellent’ rating - was achieved. Elements that contributed to the achievement of this rating included:

- solar panels to pre heat water and photo voltaics for electricity generation;
- cold aisle installation in the main server room;
- extensive electrical sub metering throughout the building;
- extensive use of low and zero carbon technology in the installed mechanical systems;
- membership of the Considerate Contractors Scheme;
- secure cycle storage;
- water minimisation technologies.

All white goods installed in the building are A/A+ rated and staff are encouraged to car share or use public transport where possible. Recycling points have been installed throughout the building. For staff that live close to the previous office locations, a bus service has been provided in order to minimise the use of cars for commuting. The buses are also available for staff that need to visit the building but are normally based in Stirling or Edinburgh.

By the end of 2013-2014 we had occupied the building for nine months. From the date of moving in we have been monitoring energy usage within the building to help identify areas of high energy usage that we can target with improved energy efficiency measures.

Planning for the coming year: our sustainable procurement target for 2014–2015

- 25% sustainability weighting in SEPA’s procurement of eligible goods and services by 2017.
- By March 2015 sustainability to represent a minimum of 15% of the scored assessment criteria used to select eligible targeted goods and services.

Social productivity

In 2013 SEPA, in partnership with SNH, contracted the Royal Society for the Arts (RSA) to explore how reform of public services and a sustainable environment can be brought together. This work - Environmental Protection & Management: A Social Productivity Approach for SEPA & SNH fundamentally challenges traditional approaches to engaging communities in our work and put forward recommendations about how environmental protection services could be delivered in line with the Scottish Government’s four pillars of reform: prevention, people, performance and partnership. Its recommendations included:

- stimulating citizen stewardship and giving communities a greater say in the commissioning of SEPA’s services and deliverables;
- moving to more joined up public services that focus on prevention, and prioritising collaboration with partners with who new service delivery models and new ways of working can be developed;
- securing a stronger mandate of public confidence through working increasingly flexibly to agree solutions and allocate resources with community partners and other stakeholders;
- embedding a fresh set of organisational competencies and attitude including: deeper partnership working; moves towards more preventative measures; more use of participatory techniques to resolve environmental concerns and a greater willingness to see some aspects of control and service delivery move outside of the Agency.

This work was launched at the RSA Scotland Annual Conference in September 2013 and is currently being considered and taken forward, particularly in the light of the Community Empowerment (Scotland) Bill currently before the Scottish Parliament.

Scotland’s Environment website – The Big

15 www.breeam.org
Discussion
Throughout 2013–2001 we continued to work with our SEWeb partners to develop the content of Scotland’s Environment website, including a redesign and relaunch. A major area of activity this year was the Big Discussion, which was an initiative to try to engage with Scotland’s people to identify their environmental priorities. The work included many strands, including a public discussion, an online discussion and a youth discussion. The public discussion involved a series of workshops across the country where members of the public shared views on their environmental priorities as well as discussing five top topics: the built environment, climate change, freshwater, land management and marine management. In the youth discussion, we asked young Scots what they consider to be the key issues impacting upon their environment.

As part of this, a competition was also launched for young people. We asked young Scots between the ages of 5 and 18 years “What needs to change in your local community that will make a difference to your environment and what role can you play in making it happen?” The competition attracted a great response from the length and breadth of Scotland. A broad range of environmental themes have been covered and many novel ideas and solutions have been proposed to issues that affect us all. The winners were announced in June 2014.

Sustainable development work with Scottish Parliament
As a member of the SENCE Group, we have worked with the Scottish Parliament Information Centre (SPICe) to trial sustainability assessment of parliamentary business. This work is aimed at supporting SPICe by contributing knowledge and expertise in relation to sustainable development, providing information and, suggesting other groups or individuals who may be able to provide sustainability evidence as witnesses to Parliamentary Committees scrutinising proposed legislation.

Supporting and developing our staff
SEPA aspires to be an excellent employer. Our people are our greatest, and most important, asset. Without them our vision and ambition are just words. It is people who bring our vision to life and make it real. We are committed to equality of opportunity for all, and we want everyone who works for us to be treated fairly and consistently. We value diversity in our workforce – it brings a range of talents and perspectives to our work, and rightly should reflect the diversity of our customers - the people of Scotland. Underpinning this is our People Strategy which was launched in 2012. Some of the key achievements that support its delivery that were taken forward during 2013-2014 include:

Staff appraisal scheme
All our staff participate in a formal annual appraisal process linked to a competency framework as part of the Customer Focus Programme. Through this, staff set and agree work objectives and targets; assess performance; and, agree areas for personal and professional development.

17 The Youth Discussion competition and associated prizes are supported by Young Scot, Keep Scotland Beautiful, Education Scotland, SEPA and members of the Scotland’s 2020 Climate Group.
18 SENCE is a grouping of public sector authorities with sustainable development responsibilities. It includes SEPA, Scottish Natural Heritage, Scottish Enterprise, Highlands and Islands Enterprise, Historic Scotland, the Sustainable Scotland Network, Transport Scotland, Scottish Water and the Forestry Commission Scotland.
Equality

As a public body, SEPA is now one of the listed bodies, with a requirement to meet the statutory specific and general duties set out in the Equality Act 2010 and the Equality Act 2010 (Specific Duties) (Scotland) Regulations 2012. A number of steps have been taken to mainstream equality into the day-to-day business of SEPA. This includes carrying out equality impact assessment, delivery of equality training and setting out equality business plans. These contribute to an increased awareness of the needs of minority communities, in relation of both service and employment needs.

Our gender balance is currently 53% female and 47% male. Although this is fairly even, there is a significant variation in the levels at which women and men work. Women are currently over represented in the lower and middle range grades but make up only one third the senior leadership grades. To enable us to take steps to address this imbalance, SEPA has an equality outcome which provides the framework for understanding why female employees are under-represented at senior levels and for identifying appropriate steps to secure higher representation.

The average gender pay gap across SEPA is currently 10.53%, well ahead of the national average of 16%. In relation to the other protected characteristics, SEPA’s equalities balance is similar to that of the Scottish population, with the exception of disability, where only 2% of staff identifies as having a disability against 19% of the Scottish population. This may be due to the fact that individuals do not feel they have a disability or they do not wish to disclose that they have a disability.

People survey

Every two years we conduct a people survey, giving all staff the chance to have their say, and from which we develop action plans to address issues raised. Employee engagement is important to SEPA and conducting staff surveys and its subsequent results allow us to make improvements in the organisation for our employees as a place to work and ultimately improve how the organisation performs as whole. Of particular note here is our ‘engagement’ score of 79% for the 2013 survey. This score is a four percentage point increase from 2011 and is very high when compared to the public sector baseline, which is 69%. These results reflect our staff’s views that they are proud to work for SEPA, that they really care about its future and that they are happy to go the extra mile when required. These are really positive findings that we aim to build on.

Health and wellbeing

We are committed to providing a work environment which promotes health, safety and wellbeing at work. Developing an ethos of wellbeing within SEPA is closely linked to our People Strategy and focusing on the areas that impact on wellbeing at work to help us to: make improvements to morale and staff engagement; increase awareness and understanding of stress and mental wellbeing; and proactively address issues affecting staff health and wellbeing.

Healthy Working Lives – Bronze Award

As reported last year, part of our commitment to this was agreeing we would participate in the Healthy Working Lives (HWL) programme. This is a Scotland wide, NHS led initiative aimed at increasing awareness of, and participation in, activities and actions which improve and promote health and wellbeing in the workplace. We set an organisational objective of achieving the Healthy Working Lives Bronze Award by end of 2013-2014 and achieved this in October 2013, with the award being formally presented at a ceremony in February 2014. Although the Bronze Award applies organisationally across the whole of SEPA, five office sites were individually assessed for the award: Aberdeen, Ayr, Galashiels, Stirling and Stornoway. We are now working to achieve the Silver award and are confident we will meet the criteria during 2014-2015.
Stress management and mental wellbeing
In September 2013 we introduced mandatory Stress management and mental wellbeing training for all managers. By the end of March 2013, 73% of all managers, including our agency management team, had attended the training, with further courses planned for early 2014 – 2015. We have also made available a mentally healthy workplaces e-learning package available for all staff. The success of the People Strategy and our approach to health and wellbeing is evidenced by a further reduction in staff absence levels this year, with a lost time rate for 2013–2014 of 2.25%, and also in the people survey results, which demonstrated a high level of awareness by staff of the policies and practices which contributed to health, safety and wellbeing in the workplace.

Supporting outreach work
Throughout the year, we have supported staff to get involved in initiatives outside the Agency, supporting local communities and environmental projects. For example:

- In 2013 we took part in Stirling High School’s pupil led Trash Fashion Show, which promotes reducing, reusing and recycling through the creation of outfits made solely from recycled materials. There were over 40 outfits at the Trash Fashion Show with various prizes including best female outfit and best male outfit. SEPA’s judge at the show said: “All the outfits were amazing and very professional. It was very, very difficult for the judges to choose winners. I really enjoyed helping out at the event and getting to experience the enthusiasm, talent and confidence of the young people involved.”

- When Business Strategy decided to embark on some team development they did it with a bit of a difference. They helped a project to restore Portmoak Moss, a raised peat bog near the shoes of Loch Leven, to its original state. Their work involved helping to ‘re-wet’ the Moss to reverse the drying process caused by conifer planting. The work was done in conjunction with the Woodland Trust.

- [Image of optimists and pessimists]

- [Image of Stirling High School's pupil led Trash Fashion Show]

- [Image of Portmoak Moss]
And lastly...a big thank you to our Green Network!

We have a network of officers who devote a little bit of their time each week to taking forward greening actions. This network of around 50 staff is spread across every office and it is integral to taking forward our greening agenda. Their activities are wide and varied, but include: monitoring local office energy consumption, identifying opportunities to minimise waste, organising recycling and composting activities and co-ordinating biodiversity improvements to office grounds. The Green Network is supported by senior managers who are responsible for developing and implementing actions to green their performance as part of annual business plans and by all our staff who are expected to follow guidance to help reduce our environmental footprint.

The work of the Green Network enables us to undertake a range of actions from Lerwick to Dumfries and Aberdeen to Fort William. Their energy, enthusiasm and willingness to take on new projects to help us to improve our environmental performance is a huge asset for SEPA and without them many of the areas of work outlined in this report would not have been possible.

So, on behalf of the whole organisation to the Green Network ... thank you for all of your efforts and keep up the great work.
Table 1. Emissions of carbon dioxide equivalent (tonnes of CO$_2$e) by source for 2012-2013 and 2013-2014
SEPA's CO$_2$e emissions are calculated and not directly measured. All conversion factors are taken from Defra's guidance on how to measure and report your greenhouse gas emissions.
SEPA follows the most recent guidance and conversion factors available at the start of each reporting year.
Emissions for 2012-2013 have been recalculated using the updated method and conversion factors released by Defra in August 2013.
All conversion factors include the 'Well to Tank' or Scope 3 component where they are available.
‘Out of Scopes' refers to those elements of emissions arising from biogenic fuels such as biodiesel and biomass wood pellet. As such they are emissions neutral and not part of our target but Defra instruct organisations to include their direct emissions as part of our inventory for completeness.
The value for total emissions per member of staff was calculated by dividing SEPA's total CO$_2$e emissions by the average Full Time Equivalent staff roll for 2013-2014.

Table 2. Emission of carbon dioxide equivalent (tonnes of CO$_2$e) from transport by source for 2012-2013 and 2013-2014
SEPA's CO$_2$e emissions are calculated and not directly measured. All conversion factors are taken from Defra's guidance on how to measure and report your greenhouse gas emissions.
SEPA follows the most recent guidance and conversion factors available at the start of each reporting year.
Emissions for 2012-2013 have been recalculated using the updated method and conversion factors released by Defra in August 2013.
All conversion factors include the 'Well to Tank' or Scope 3 component where they are available.
‘Out of Scopes' refers to those elements of emissions arising from biogenic fuels such as biodiesel. As such they are emissions neutral and not part of our target but Defra instruct organisations to include their direct emissions as part of our inventory for completeness.
The value for total emissions per member of staff was calculated by dividing SEPA's total CO$_2$e emissions by the average Full Time Equivalent staff roll for 2013-2014.
Table 5. Key waste data 2013–2014

1 All Wastes’ are those wastes collected and managed on our behalf by a contractor and excludes wastes classified as hazardous. The total weight of all wastes rose temporarily during 2013-2014 due to SEPA moving fully out of two buildings, partly out of a third and consequently generated additional extraordinary wastes.

2 Total Wastes Recycled’ are the proportion of wastes segregated by our staff and uplifted at our buildings by a contractor for recycling.

3 Landfill diversion is the total of recycled wastes and wastes consigned to a materials recycling facility (MRF). This is the total weight of wastes not sent to landfill.

4 Expenditure excludes hazardous wastes

5 See table below on for explanation on how this value was calculated The table below presents the assumptions that SEPA and our waste contractors make regarding the weight of segregated wastes in various waste collection receptacles. It is impractical to weigh every single item of waste material but by following a standardised approach to monitoring our wastes we can scrutinise trends and more effectively take action in those areas where we can improve.

<table>
<thead>
<tr>
<th>General waste</th>
<th>Paper</th>
<th>Cardboard</th>
<th>Mixed Recyclables</th>
<th>Glass</th>
<th>Cans</th>
<th>Plastic</th>
<th>Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEL 8 yard</td>
<td>0.35 tonnes</td>
<td>-</td>
<td>-</td>
<td>0.32 tonnes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1100 litre</td>
<td>0.08 tonnes</td>
<td>0.5 tonnes</td>
<td>0.09 tonnes</td>
<td>0.04 tonnes</td>
<td>0.27 tonnes</td>
<td>0.02 tonnes</td>
<td>0.04 tonnes</td>
</tr>
<tr>
<td>660 litre</td>
<td>-</td>
<td>0.3 tonnes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>500 litre</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.27 tonnes</td>
</tr>
<tr>
<td>360 litre</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>240 litre</td>
<td>0.02 tonnes</td>
<td>0.1 tonnes</td>
<td>-</td>
<td>0.007 tonnes</td>
<td>0.06 tonnes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>140 litre</td>
<td>0.01 tonnes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.03 tonnes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>120 litre</td>
<td>0.004 tonnes</td>
<td>-</td>
<td>-</td>
<td>0.004 tonnes</td>
<td>0.004 tonnes</td>
<td>0.015 tonnes</td>
<td></td>
</tr>
<tr>
<td>Sack collection</td>
<td>0.005 tonnes</td>
<td>0.015 tonnes</td>
<td>-</td>
<td>0.003 tonnes</td>
<td>0.008 tonnes</td>
<td>0.002 tonnes</td>
<td>0.003 tonnes</td>
</tr>
</tbody>
</table>


The arisings factor represents the emissions associated with the production and distribution of material before it becomes waste.

1 MRF/EFW = Materials Recycling Facility/ Energy From Waste

2 WEEE = Waste Electronic and Electrical Equipment

Case study on page 32: Closed landfill – Crow’s Nest, Aberdeenshire

Data on the amount of landfill gas collected and processed in either landfill gas engines or landfill gas flares.

This assumes a density of 0.71 kg of methane/m³.

The IPCC report cites GWP of methane to range from 28-34, where the higher figure takes account of climate-carbon feedbacks - see IPCC 2013, Climate Change 2013: The Physical Science Basis –Fifth Assessment Report AR5) Table 8.7, p.714 viewed at http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf
Scope and objectives
AAenviro was commissioned by SEPA to review and audit Sustainable SEPA 2013–2014 and provide an independent assessment of the reported material and progress in relation to the achievement of specified environmental performance targets and actions to comply with the duties placed on public bodies by Part 4 of the Climate Change (Scotland) Act 2009. The Sustainable SEPA 2013–14 report has been produced to align with guidance on public sector sustainability reporting and to represent a summary of environmental performance and actions taken under the public bodies climate change duties over the reporting period.

The primary objective of the verification exercise was to review the report and provide an independent verification statement reflecting the findings of the review, thereby giving assurance that information published in Sustainable SEPA 2013–2014 is valid, reliable and consistent with good environmental reporting principles.

Methodology and limitations
The methodology used by AAenviro to verify the validity and accuracy of material presented by SEPA was to review and critique selected data and statements under each of the reporting headings published in Sustainable SEPA 2013-2014. A combination of techniques was used, which included:

- Interviews with SEPA staff, both face-to-face and via telephone;
- Sampling and checking of primary and secondary data;
- Reviewing records, reports, certificates and other relevant documents; and
- Examining internal and external communication records.

The opinions and recommendations in this Statement are based upon a review of information and samples of evidence provided by SEPA during the verification process. The Verification Statement covers material in the main body of the report and excludes the CEO Introduction and any statement on SEPA’s emissions performance using an indicative Scottish electricity grid factor.

Opinion
Based on the information provided during the assessment process, it is our opinion that the material published in this report represents a fair, transparent and sufficiently accurate account of SEPA’s performance in relation to reported environmental targets and SEPA’s activities and actions associated with public bodies climate change duties over the reporting period.

In keeping with the principle of materiality, SEPA has reported across the range of relevant environmental issues that are associated with the organisation’s most significant impacts, although we noted that water and paper consumption, which have historically been reported by SEPA, had not been reported for 2013-14 due, in part at least, to unreliable supplier information.

Although SEPA’s headline overall emissions of CO₂e rose slightly, the underlying cause is understood and the rise was anticipated. A significant challenge remains if SEPA is to achieve its greenhouse gas (GHG) reduction target but SEPA’s GHG roadmap will facilitate emissions tracking and the identification of priority actions.

SEPA is to be commended on achievement of its transport and travel target, continuing the strong track record SEPA has had for this environmental aspect. During the assessment process, and acting on recommendations made last year, we noted that improvements to the accuracy and reliability of travel related information had been made through dialogue with the data supplier. Also of note in this year’s report is the significant use SEPA had made of internet based meeting technologies, illustrating how these can not only generate business efficiencies but also reduce transport related emissions.

It was also encouraging to note the progress SEPA had made in relation to the achievement of its waste, biodiversity and sustainable procurement targets and the encouraging statistics reported on aspects of equality, wellbeing and staff engagement, together with SEPA’s achievement of the Healthy Working Lives Bronze Award.

AAenviro has had no participation in the generation of material presented in Sustainable SEPA 2013–2014 and during the reporting period has not had any contracts or other association with SEPA that might prejudice views or findings.
Recommendations

Although our examination of selected data samples provided confidence that the information presented was transparent and at a sufficient resolution of accuracy, we did note minor issues associated with the accuracy of some of the information presented. In this regard, recommendations have been made to SEPA in connection with both the use of appropriate terminology and data quality assurance. As an exemplar and lead environmental regulator, we have also recommended that SEPA expand comparison of its environmental performance against other similar organisations or established benchmarks.

Whilst recognising improvements had been made to the quality of third party supplied information, we have also recommended that SEPA continues to improve its data capture systems to ensure that it obtains relevant and reliable information from suppliers that can be used with confidence in the sustainability report.

Although not included within the scope of data verification for this report, we noted that SEPA had separately estimated its emissions performance using a calculated indicative Scottish electricity grid factor, illustrating the effect a decarbonised grid conversion factor can have on calculated emissions. Acknowledging that SEPA also reported using the UK grid factor, we recommended caution prior to introducing or using new conversion factors based on methodologies that have not been validated.

In conclusion, we consider that the material published in Sustainable SEPA 2013-2014, represents a fair and balanced account of SEPA’s performance against its environmental targets and that a range of relevant actions under the headline public bodies climate change duties has been presented for the reporting period.