

*Aiming to improve our environmental performance*

## **Sustainability report** 2014–2015

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# Welcome

Welcome to this report on our sustainability performance over the past year. Since 1999, we have openly and honestly reported our own environmental performance, and I am very pleased to continue this long history in my role as SEPA's new Chief Executive.

Acting sustainability should be at the heart of any successful organisation and I want it to be core to everything that we do – protecting and improving the environment in a way that also contributes to the health and well-being of the people of Scotland and which helps create sustainable economic growth. Doing the best we can to help tackle climate change in Scotland is a key part of the work that we do. This doesn't just mean trying to reduce our own emissions, it's also about working in partnership to help Scotland's communities and businesses to adapt to the changes that are occurring in our environment and helping them to innovate and prosper as part of transitioning to a low carbon economy.

This means we need to make sure we provide the expertise, leadership and evidence that our communities and businesses can use to make the right choices.

And we need to lead by example and make the right choices ourselves. The people of Scotland should expect their environment protection agency to lead by example on climate change and all other environmental issues in the way we do our work.

Reflecting on our own action last year...well our emissions did actually rise slightly. But this increase was due to circumstances not in our control. Isolate these, and our performance last year was actually extremely good. Our energy consumption reduced considerably and once again we reduced emissions from our travel. We also have a very active and enthusiastic community of Green Network members who have helped us to manage record levels of recycling and develop our outreach work with partners.

I hope you find our report informative and I encourage you to provide us with feedback on our performance and welcome any suggestions for how we can continue to improve it.



A handwritten signature in black ink, appearing to read 'Terry A'Hearn'.

Terry A'Hearn  
Chief Executive

## How we report is changing

The way we report our performance is changing. In 2016 a new mandatory climate change reporting regime will be introduced. We have trialled this new system a year in advance.

There are differences in how greenhouse gas emissions are calculated under the new system and our historical reporting method. For this year therefore, we are reporting two sets of emissions figures: one set derived using the new reporting which is set out in the [mandatory reporting template](#) and another set presented in this report which provides a final statement of progress using our historic method.

Our performance remains the same, even though the actual numbers are different. From 2016 we will reset all emissions monitoring and reporting to a new baseline based on the new method. Further details of the changes are set out in Annex 3.

# Acting as an exemplar – Reducing our greenhouse gas emissions



## Our target:

To reduce our greenhouse gas emissions by 42% by 2020, compared to a 2006–2007 baseline.

## How did we do?

Our total emissions of CO<sub>2</sub>e were **3,819 tonnes**, a rise of **2.7%** from last year. Our emissions are now down by **9.5%** from our baseline. The rise is due entirely to a 10.6% increase in the factor used for converting electricity use into CO<sub>2</sub>e emissions. If the conversion factor had remained the same, our emissions would in fact have reduced by **2.95%** and would now be **14.4%** down against our baseline.

As an exemplar, we aim to be very clear, open and honest about the quantities of greenhouse gases that we are responsible for emitting. To calculate our emissions, we use a method promoted by the UK Department for Environment, Food and Rural Affairs (Defra) and recommended by the Scottish Government's sustainability reporting guidance.

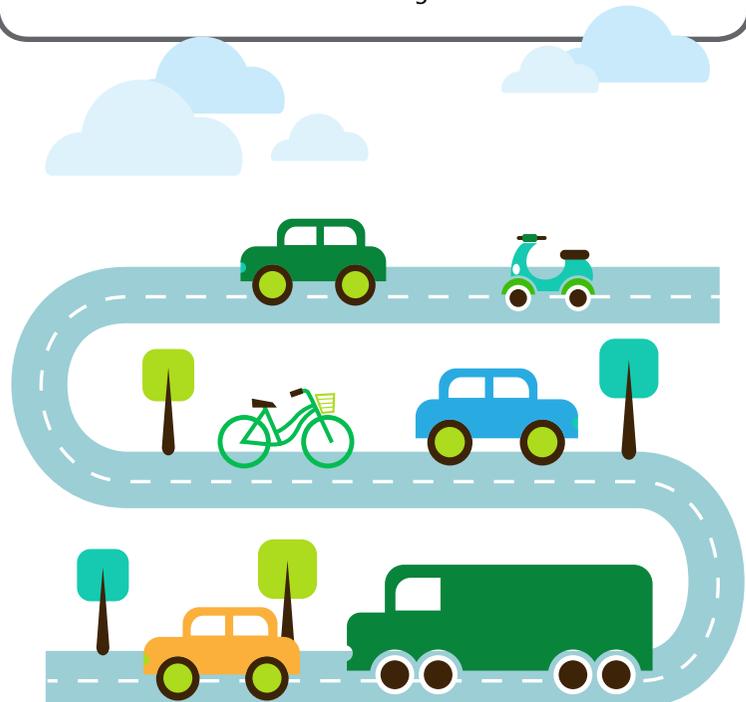
The change to the electricity conversion factor used in this method has had a profound effect on our performance, as electricity contributes 61% of our total emissions. The reason for the increase is due to a 10% uplift in the carbon intensity of the UK electricity grid in 2012 - the year the conversion factors are based on. This was due to an increase in coal based generation of 33% in that year, reflecting the favourable prices for coal relative to gas at the time<sup>2</sup>.

However, our overall energy use has reduced significantly over the past year as a result of changes we have made to our estate. Without the change in conversion factors we would be reporting a reduction in our emissions of almost 3%, which is in line with the annual targets set for Scotland.

Emissions of carbon dioxide equivalent (tonnes of CO <sub>2</sub> e) by source		
Source	2014-2015	Change from last year
Gas	298.48	-28.3%
Fuel oil	16.92	-4.1%
Electricity	2327.68	+11.0%
Business car mileage	578.74	- 3.5%
Pool cars	270.05	+11.0%
Trains	112.79	-4.1%
Ferries	3.92	+61.3%
Flights	65.15	-19.7%
Sir John Murray	145.49	+0.3%
<b>TOTAL</b>	<b>3,819.22</b>	<b>+2.7%</b>
Emissions per employee (tonnes)	3.07	

*Note: Detailed data breakdown in Annex B*

<sup>2</sup> Source: UK Committee on Climate Change. [www.theccc.org.uk/wp-content/uploads/2013/06/CCC-Prog-Rep\\_Chap2\\_singles\\_web\\_1.pdf](http://www.theccc.org.uk/wp-content/uploads/2013/06/CCC-Prog-Rep_Chap2_singles_web_1.pdf)



# Acting as an exemplar – Reducing emissions from our buildings



## Our target:

Achieve a 5% reduction in CO<sub>2</sub>e from energy usage at SEPA buildings compared to 2013–2014.

## How did we do?

Our building energy emissions rose by **112.7 tonnes** of CO<sub>2</sub>e or **4.5%**. The rise in emissions is due entirely to the 10.6% rise in electricity conversion factor we are required to use. Unchanged conversion factors would have given a **4.2% fall** in emissions, narrowly missing our ambitious 5% target.

## Energy consumption down

We recorded a very significant fall in our energy consumption:

- gas consumption was down **27.5%**;
- oil consumption was down **4%**;
- electricity consumption was broadly flat (up just **0.4%**).

A key element in our success in reducing our energy consumption has been our programme of estate rationalisation. Our estate strategy targets a 25% footprint reduction and recognises that this will reduce both costs and environmental impacts. A key part of the strategy was implemented in 2014–2015 with the completion and occupation of a new Stirling office. Through this migration from two sites to one, we have reduced our footprint by 26%. In addition, the move has allowed us to share accommodation with Scottish Natural Heritage and to share admin services, breakout spaces and staff facilities.

### CASE STUDY

#### Strathallan House, Stirling

- The building is designed around an 8:10 desk/staff ratio to maximise space efficiency.
- Touchdown and breakout spaces are provided to avoid the need to heat or cool enclosed meeting spaces.
- Highly efficient LED lighting has been fitted in locations where new lights were required.
- Materials from the previous occupancy of the building were used, including floor coverings, the reception area, kitchen units and glazed panels.

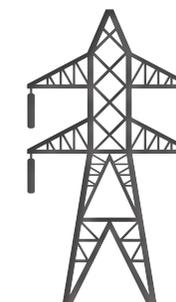
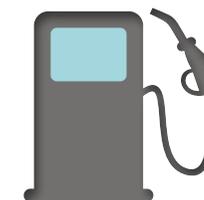


### CASE STUDY

#### Kirkwall

Staff continued to monitor and reduce water consumption in the Kirkwall office and achieved a **77%** reduction in water use compared to last year.

More rigorous monitoring of paper consumption and awareness raising also saw consumption fall by a further **13%** on top of a reduction of **31%** from the year before.



#### Energy consumption in SEPA buildings

Energy Source	2013 - 2014	2014 - 2015
Gas (kWh)	1,961,971	1,422,659
Fuel Oil (litres)	5,751	5,523
Electricity (kWh)	3,744,319	3,758,377

## Acting as an exemplar – Reducing emissions from our travel



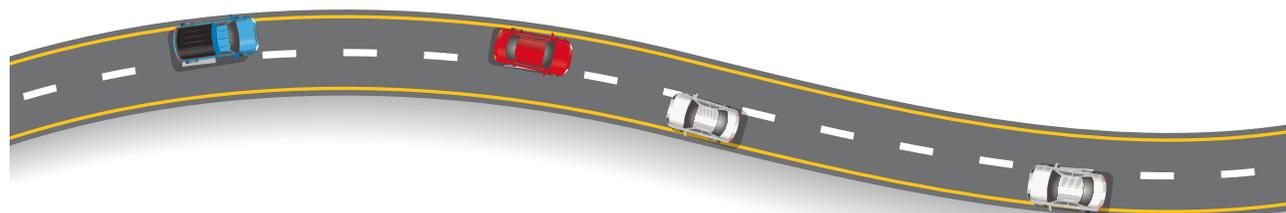
### Our target:

To maintain transport and travel emissions at 2013–2014 levels.

### How did we do?

Our emissions from transport and travel were **1030.65 tonnes of CO<sub>2</sub>e**, representing a **13.35 tonne (1.3%)** decrease compared to 2013–2014.

We are pleased to have exceeded our target and to have reduced emissions once again from our travel. We are confident that the measures we have put into place to reduce the need to travel and to migrate to a low carbon green fleet are working. Average transport emissions per employee have been dropping year on year for the past eight years and dropped a further 4% in 2014–2015 to 0.83 tonnes CO<sub>2</sub>e per employee.



### CASE STUDY

#### Flights down and staying down

Emissions from all our flights are now the lowest they have ever been since we started recording. Our domestic (non-island) flights have dropped by **97%** (see graph) since 2006–2007, and emissions dropped **19.3%** in 2014–2015 compared to the year before.

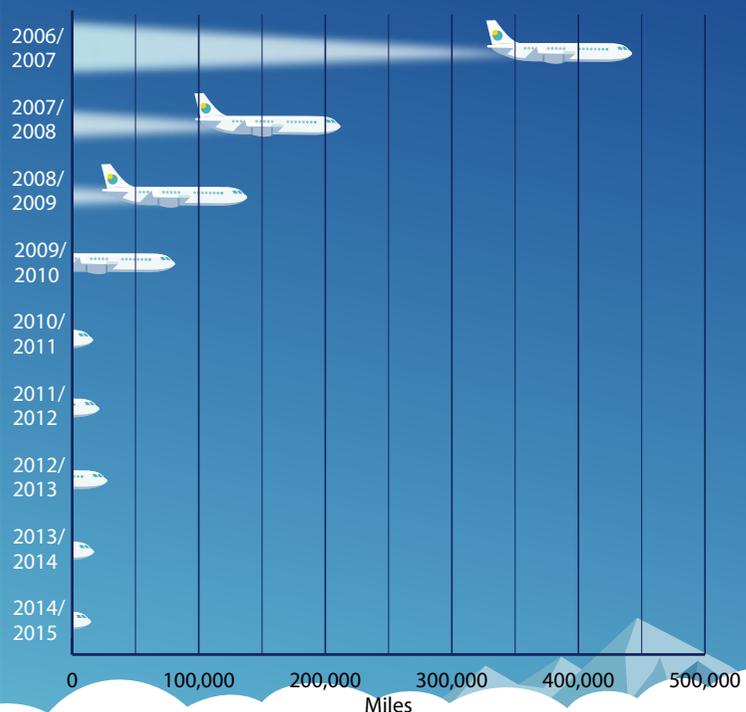
All non-island flights require Director level approval, and approval is only granted where there are clear justifications. Offering alternatives to flying such as video and web-based conferencing has also been instrumental in achieving sustained reductions. This has also allowed us to make cost reductions, while also helping the work-life balance for our staff.

### CASE STUDY

#### Reducing business car mileage

Some car travel is necessary, particularly for site monitoring and inspections. But for many journeys, such as travelling between offices, we can use alternatives. Since 2010, we have set targets to reduce impacts from our travel. The largest contribution in this area is from business car mileage (private cars used for SEPA business) and we have achieved significant reductions through using alternatives to travel such as video and web based conferencing and by increasing the availability of lower carbon pool vehicles. Our business car mileage has reduced from 2.9 million miles in 2009–2010 to less than 1.6 million miles last year, a drop of **45%** including a further **3.5%** last year.

Domestic UK flights 2006/7 – 2014/15



# Acting as an exemplar – Reducing our 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?

Our recycling rate for 2014–2015 was 75%, well above our internal target and a 3% improvement on the previous year. In total 90% of our waste was diverted from landfill.

We continue to exceed our targets for waste and have once again improved our levels of recycling. Our long-term target is to continue to work towards the national 2025 zero waste targets when no more than 5% of all wastes may be consigned to landfill, and we are well on the way to achieving that. Using a carbon waste metric developed by Zero Waste Scotland, we have calculated that our recycling activities prevented 114 tonnes of CO<sub>2</sub>e being released to the atmosphere last year.<sup>2</sup>

Our Green Network is vital in delivering our waste targets. With the help of our facilities staff and waste contractors, they are responsible for co-ordinating the segregation of recyclables; conducting local waste audits to check progress; and improving segregation to increase the range of waste materials we can either avoid producing or can recycle.

### CASE STUDY

#### Arbroath office

Staff in Arbroath established a local food waste collection service that resulted in more than 70kg of food waste being composted in its first six months of operation. Staff also organised a litter pick for the local beach at Victoria Park that resulted in many bags of waste being removed for proper disposal or recycling.



### CASE STUDY



#### Edinburgh office

Staff in Edinburgh held a 'swishing' event where clothes and accessory items were brought in and swapped. Anything left over was donated to charity. Staff also organised a large 'de-cluttering' event that allowed staff to bring unwanted items to a central point and were available for reuse or recycling.

**75%**  
waste  
recycled

**TOTAL**  
**247.66**  
**tonnes**

Paper	115.48
Cardboard	6.19
Mixed recyclables	26.23
Glass	15.05
Cans	1.23
Plastic	4.36
WEEE	1.49
Batteries	0.61
Food	15.99

**Residual waste**

**25%**

General waste land-filled.....	24.55
General waste – MRF or energy from waste .....	36.48

<sup>2</sup> See Annex 2 Table F

## Acting as an exemplar – Improving biodiversity



### Our target:

Biodiversity action plans in place for each appropriate SEPA office location.

### How did we do?

We achieved our target. 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.

All our offices with grounds under our control have an up-to-date biodiversity action plan and our Green Network have worked hard implementing them. Here are some examples of the biodiversity work of the Green Network.

Fort William staff are undertaking a beekeeping for beginners course delivered by the Lochaber Bee Keeper Association.



The Inverdee House Gardening Club has been resumed; this includes staff from the Joint Nature Conservation Committee, Scottish Natural Heritage and SEPA.



Bird feeders are present at 15 offices and were kept topped up through the winter. Bird nest boxes and bat boxes have also been erected in many offices.



Native planting, including pollinator-friendly flower boxes, vegetable patches, and wild flower meadows are present at 13 offices.



At Glenrothes, our staff are working with neighbouring organisations to extend planting beyond our grounds.



### To support this work, we have also taken steps to promote the importance of biodiversity by:

- encouraging outreach work to involve local business and organisations;
- enabling Green Network and Ecology staff to work together to guide effective management for wildlife;
- promoting the estate biodiversity work that we do;
- establishing a central repository for all biodiversity action plans to encourage the sharing of good practice between offices.

Five offices now have semi-natural habitats that are actively managed through seeding, mowing and the removal of clippings. In Stirling, a design competition for a new wildlife garden was held and is being implemented in 2016.



# Being a climate change leader and adviser

We recognise that climate change is a symptom of unsustainable activity and is the greatest threat to the planet's ecosystems, with significant consequences for humankind. As a major player in helping to deliver Scottish action on climate change, we have an important role in understanding and communicating the science of climate change and the resulting impacts on our environment. Through this role, we engage with policymakers and decision takers to help ensure that our businesses, communities and important national assets are resilient to future climate change. We are represented by senior staff at the Public Sector Climate Leaders Forum and the Climate Leaders Officers Group where we provide expert opinion on climate change. Throughout 2014/15 our previous Chief Executive, James Curran, also attended the Climate Change Delivery Board as a non-executive member. A key contribution has been supporting the development of the Public Bodies Climate Change Duties mandatory reporting template and accompanying guidance. Other examples of our climate change leadership work in 2014–2015 include:

## CASE STUDY

### The second UK climate change risk assessment

We have worked with the Scottish Government's independent advisers – the [Committee on Climate Change \(CCC\)](#) – and with other partners to report on priorities for the second [UK climate change risk assessment](#).

This statutory report is vital to understanding future risks and for shaping UK and Scottish Government policies and programmes on climate change adaptation. We have provided the CCC with data, evidence and expert judgement. We are also supporting three research projects as part of the assessment:

- on flooding (including flooding and planning advice);
- water scarcity;
- ecosystem services.

Our contributions to the process have been acknowledged by the Chairman of the CCC, Lord Krebs.

### Adaptation indicators

In 2016, the [Committee on Climate Change \(CCC\)](#) will undertake an independent assessment on the progress made towards implementing the '[Climate Ready Scotland](#)' adaptation programme. [ClimateXChange](#) has been commissioned to establish a set of adaptation indicators relevant to Scotland to guide this assessment and to identify data on trends in the key factors affecting Scotland's vulnerability to climate risks. We have made a substantial contribution in the form of evidence and expert advice into the development of the indicators.



## CASE STUDY

### Climate change evidence

We are developing climate change factsheets which use the scientific knowledge we hold on changes in the environment to give our best projection of how this might change by 2050. This will help businesses, local authorities and communities in their decision-making and thus support adaptation.

The [first factsheet](#) focused on water scarcity. Our modelling predicts that the likelihood of a water scarcity event will double to once every 20 years by 2050. The increased frequency of drought events is important for water users – for example where water is required for crop irrigation or for industrial production – to consider in their future planning.



# Helping Scotland to adapt to climate change

As an environmental regulator, we need to understand changes to Scotland's climate, how to respond to these changes and how to help Scotland prepare for change. We also have to ensure that our own operations are resilient to changes in climate. Over the year, we have made a substantial contribution to the Scottish Government's adaptation programme. Examples of our adaptation focused work in 2014–2015 include:

## New Moray Firth flood warning service

In 2014, a [new flood warning service](#) was launched to help vulnerable communities at risk of flooding along the Moray Firth coastline. The service is based on state-of-the-art forecasting models taking into account tidal and wave predictions which have been developed in partnership and with the financial support of Highland and Aberdeenshire Councils. The scheme adds 17 new flood warning areas to our service and provides benefit to more than 9,000 homes and businesses.

This improvement is part of our five-year [flood warning strategy](#) which makes a commitment to reduce the impact of flooding by improving the provision of reliable and timely flood warning.



## Surface water flood forecasting

A new forecast surface water flooding tool was successfully trialled in the Glasgow area throughout July–August 2014. This resulted in daily guidance being fed to the Multi-Agency Control Centre throughout the Commonwealth Games. The tool is the result of a UK leading pilot project lead by our Flood Forecasting and Warning Team and was developed in partnership with Met Office, CEH Wallingford, the James Hutton Institute and Deltares and Scotland's Centre of Expertise for Waters (CREW).

## Ready for winter campaign

This campaign aimed to prepare the public - at home, on the road, and in the community - for severe weather scenarios over the winter season. The 2014–2015 campaign delivered by Ready Scotland featured a focus on flooding and promoted Floodline, our live flooding information and advice service.

We were a key partner in the campaign and we featured in TV/radio/digital adverts, public engagement roadshows and social media. As part of the campaign, we also launched our new look Floodline website. Our Floodline service provides residents with free advance notification when flooding is predicted, providing crucial time to prepare and protect themselves and their properties against the damage which flooding can cause.



## Working with Scottish business on climate change

It is our ambition to work with Scottish businesses to foster a low carbon, resilient economy. We have used our regulatory powers and duties to encourage sustainable resource use, to foster innovation to deliver renewable energy targets, and to help businesses to be resilient to a changing climate.

### Carbon capture and storage - Peterhead Power Station carbon capture plant

During 2014–2015 the plan for a full [carbon capture](#) plant at the gas-fired Peterhead Power Station moved ahead to the next stage of design. During this time, we continued our extensive pre-application engagement with Shell and SSE during the 'front end engineering design' (FEED) stage for the proposal.



Specifically, we provided the developers with a robust method for the assessment of predicted emissions to air – one of the environmental impacts anticipated from the process – and the optimisation of the plant to minimise environmental impact.

We continue to work with Shell and SSE as part of the FEED stage. The recent announcement by the UK Government of the withdrawal of funding for the CCS commercialisation competition of which the Peterhead scheme was part means, however, that the future of this work is uncertain.

### CRC Energy Efficiency Scheme allowance

We secured full compliance with the carbon allowance purchase and surrender requirements by all one hundred and thirty-five Scottish operators in the [CRC Energy Efficiency Scheme](#). Effective communications between the team and operators ensured compliance without the need to issue civil penalties.

### Vision in Business for the Environment of Scotland Awards

The [Vision in Business for the Environment of Scotland Awards \(VIBES\)](#) is a partnership scheme run by SEPA which recognises the commitment, actions and achievements of Scottish companies in reducing their impact on the environment. 2014 and 2015 winners included:

**Soilutions Ltd** for their work in the remediation of contaminated soils and waters, reducing the need for virgin materials in construction and for waste to be sent to landfill.

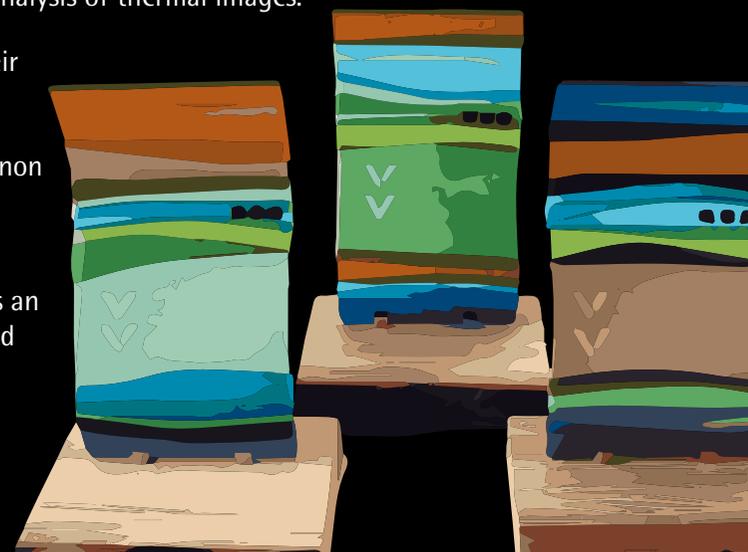
**IRT Surveys Ltd** for their software technology that quantifies the energy loss from buildings through the analysis of thermal images.

**Aberdeen Heat and Power Ltd** for their work to develop and operate a district heating and combined heat and power scheme supplying over 2000 homes and non domestic properties in Aberdeen.

**City Car Club** in Edinburgh for their innovative car club scheme that provides an effective alternative to car ownership and enabling reduction in emissions through operation of a fleet of low carbon and electric vehicles.

*"VIBES is a superb mechanism for illustrating the link between environmental improvement and economic growth"*

**Iain McMillan,**  
Former Director of CBI Scotland



# Outreach and corporate social responsibility

The purpose of outreach is to share our experience with external organisations and individuals to encourage them to adopt similar activities in order to bring about a greater overall benefit for the environment. Recent examples have included:

## CASE STUDY

### Arbroath

As our Arbroath office has no grounds of its own, one of our Green Network members liaised with neighbouring businesses to allow planting on their land. Two companies (Pioneer Oil Tools and Multi Packaging Solutions) were interested, and on a wet and windy day in November 2014, 210 trees were planted by volunteers from the businesses, SEPA staff and members of the public. The trees were supplied free by The Woodland Trust.

Once the trees grow, they will provide wildlife corridors, food and shelter for insects, birds and small mammals. They will also make the industrial estate more attractive and a nicer place to work for all those employed there. One of the companies was so pleased with their trees that they have asked us for further advice on other initiatives they can do.

The Green Network continues to promote biodiversity in the area and is planning to work with other businesses on planting more trees.



## CASE STUDY

### Lerwick

Staff participated a beach clean at Burwick Beach in Scalloway, as part of a community-lead initiative. Called the 'Da Voar Redd Up' it is the UK's most successful community litter pick, with over 20% of Shetland's population volunteering their time annually. This annual spring clean makes an invaluable contribution to Shetland's natural environment and wildlife, clearing Shetland's beaches, coastlines and roadsides of litter and the debris washed up by winter storms.



## CASE STUDY

### SEPA contributes to Malawi Fund

We have been working with the Malawi Fund, run by the Glasgow Lord Provost's Office, to help improve public health and water quality in the country by donating laboratory equipment. When we moved offices to the Angus Smith Building we also moved into a new laboratory combining our Edinburgh and East Kilbride teams in one purpose built facility. This meant we had some equipment which was surplus to requirements.

As waterborne disease is a major issue in Malawi we thought that this excess equipment could be put to good use there. Our donations to this on-going project have so far involved microbiological analysis, and includes microscopes, autoclaves and incubators. In addition to this, our Information Services team donated a number of computer monitors, keyboards and mice.

The equipment from SEPA will be donated to the College of Health Sciences in Malawi. At this facility the equipment will be used to help with health projects and to train students who are studying public health courses.

