



# Environmental Placement Programme Annual Report 2009



The Environmental Placement Programme has been running for over 10 years and in 2009 we have had four Renewable Energy-based placements throughout Scotland. Details of these placements can be found in this report.

Benefits :

- Cost savings
- Increased sales
- New customers
- Reduced CO<sub>2</sub> emissions
- Reduced waste going to landfill
- Reduced energy consumption



First Minister with student finalists, judges

*Describing EPP as “very much a **‘win-win’ programme**” and “a unique initiative which benefits students, companies and the environment,” The First Minister said it created extra capacity for companies to boost their environmental performance and improved their competitiveness by cutting overheads in areas such as energy and waste.*

## 1. Placement Summary

Company	Region	Student	Course	University
Fyne Homes	Highlands&Islands	Maria McAllister	Law	Glasgow
Hebrides Alpha Trading	Highlands&Islands	Donald Morrison	Sustainable Rural Management	Highlands & Islands
On Site Generation	Edinburgh & Lothians	Hertha Taverner-Wood	Mechanical Engineering with Renewable energy	Edinburgh
Westray Energy Action	Highlands&Islands	Ingrid Austin	Sustainable Energy	Reykjavik

## 2. Case Studies

### Energy Action Westray

### Anaerobic Digestion

Ingrid Austin was placed at Energy Action Westray (EAW) in the Orkney Islands in the summer 2009. The island of Westray is one of Orkney's archipelago which is host to many influential energy projects. The Biogas Plant is one such project where anaerobic digestion is a speciality. Ingrid's main objective this year has been to investigate the potential to expand the use of biogas in the island's energy mix. This involved the investigations into the use of district heating as a distribution method for the energy sourced from anaerobic digestion. The main placement objectives were to:

- Identify the demand for a cluster of homes and commercial properties
- Investigate other district heating schemes and rural energy projects

She also made further recommendations for the development of district heating in Westray.

As a result of hosting the Environmental Placement Programme, EAW have been able to kick-start the investigative processes into the likelihood of District Heating in Westray becoming a solution to fuel poverty and affordable warmth in the rural part of Scotland where small scale district heating may otherwise be disregarded.

### Fyne Futures

### Biodiesel Feasibility Study

Maria McAlister is a Law student at the University of Glasgow. She was placed at Fyne Futures Recycling Centre to set up a waste vegetable oil collection service on Bute and the surrounding areas for the production of biodiesel.

Her first task was to identify all potential suppliers of waste vegetable oil, contact them and then set up a collection service for those who were interested. She also looked at the company becoming a vegetable oil supplier on the Isle of Bute in order to secure all available waste vegetable oil. Fyne Futures were also looking into increasing the size of their biodiesel plant for which funding has now been applied with the view to getting a plant that can produce 400 litres per batch.

The company 69% on their fuel bills as a result of implementing the results of her placement and have also succeeded in implementing a regular waste vegetable oil collection service.

### Hebrides Alpha Trading

### Cardboard Briquette Study

Hebrides Alpha is a Community Interest Company employing a range of initiatives to fund the provision of support for those with addiction issues.

Donald Morrison was placed at Hebrides Alpha to further a study into turning locally produced waste cardboard into briquettes for burning as an alternative to coal, peat and wood.

The main placement objectives were to:

- Produce complete feasibility study and produce a new marketing and business plan for the cardboard recycling initiative

- Roll out the textile recycling service
- Increase customer base for the existing plastic, glass and can recycling scheme

Initial tasks involved:

- Investigating current developments within the cardboard recycling industry
- Investigating solid fuel supply and market
- Liaising with partner agencies involved in textile project
- Creating promotional material and attending local shows to promote company

Results to date include:

- Presentation of report and forecasts to Board of Directors on Cardboard Recycling scheme projecting the diversion of 600 tonnes of waste cardboard from landfill.
- Completion of feasibility study
- Ordering of 20 textile banks projecting the recycling of 120 tonnes of material annually
- Increase of 11% in customer base for recycling scheme over duration of placement

Hebrides Alpha have succeeded in increasing their recycling customer base by 11% as a result of the Donald's placement with them, and a new promotional campaign initiated using material designed and created by Donald.

### On Site Generation

### Renewables Study

Hertha Taverner-Wood was placed with On Site Generation. Her placement was divided into two projects. The first looked at retrofitting existing buildings with renewable energy technologies to reduce energy consumption carbon emissions. The second study was completed for the Scottish Maritime Museum in Irvine.

She started by undertaking a study to assess the feasibility of installing renewables in order to generate electricity to improve a village hall's energy independence. An 11kW wind turbine was recommended as the most suitable option, with the possibility of combining this with solar photovoltaics or battery back-up.

For the second part of the placement for the Scottish Maritime Museum she looked at a listed historic building, originally built as an engine shed for boats, which has a roof composed of glass. As a result of her placement the roof will be replaced, which provides an opportunity to install semi-transparent photovoltaic glazing. This involves photovoltaic cells laminated in glass, which can be installed in place of standard glazing. The system recommended would be 60kWp and provide around 50,000kWh every year.

Hertha identified total savings of 540,000 kWh/yr and 35 tonnes CO<sub>2</sub> for On Site Generation's projects.

## 3. Quotes

### Company Quotes

'It has been hugely beneficial to have a fresh pair of eyes focussed on a specific area of work and Maria's professional approach has produced a valuable resource for our future development of Biodiesel'

*Ailsa Clark, Fyne Futures*

'...EPP has been a very positive experience for ourselves and (we) would be very interested in participating in the programme in the future

*Robert Henderson, Hebrides Alpha Trading*

### Student Quotes

'...my placement has increased my awareness of the importance of recycling and of all the different ways everyone can do their bit for the environment. It has also made me consider studying environmental law in my honours year at university'

*Maria McAlister, student at Fyne Futures*

'My placement has further re enforced to me that I possess many of the skills required for modern business... my experience at Hebrides Alpha has been such a rewarding experience

*Donald Morrison, student at Hebrides Alpha Trading*