A Review of the 2014 Ryder Cup Green Drive
Introduction

Since Valderrama in 1997 Ryder Cup Europe (RCE) has demonstrated interest in and concern for the health of the environment, recognizing the unavoidable impacts that the event brings and working continuously to minimize that impact and maximize the positive sustainability opportunities the Ryder Cup generates. The 2010 Ryder Cup at Celtic Manor made significant progress and set a benchmark for delivery of an increasingly sustainable tournament.

The 2014 Ryder Cup Green Drive represented the further scaling up of the breadth, depth and overall ambition of RCE’s sustainability commitments and set out to showcase resource efficiency, environmental stewardship and corporate responsibility through an innovative, practical and highly visible sustainability initiative. This report provides an overview of the purpose, scope, activities and achievements of the 2014 Green Drive. It follows elements of the Global Reporting Initiative (GRI) reporting framework.

Collaborative planning and delivery

RCE adopted an open and collaborative approach to the greening of the event and its legacy, working with local and international partners to ensure the best positive impact from effective, team based action. Working closely with Event Scotland, the Golf Environment Organization (GEO) was tasked with the coordination and project management of the initiative. A Green Drive Steering Group was formed, meeting quarterly to plan and review all policy, best practice and practical project plans while also promoting the Green Drive and the opportunity around sustainability and golf within their own organizations. The work of the Steering Group was shared and interfaced with the other fifteen event staging committees, which include procurement, communications, infrastructure and transportation.

The Steering Group comprised of:

- Event Scotland
- Gleneagles Resort
- Golf Environment Organization
- Keep Scotland Beautiful
- Perth and Kinross Council
- Ryder Cup Europe
- Scottish Golf Union Environment Group
- Scottish Government
- Scottish Natural Heritage
- Scottish Water
- Scottish Environment Protection Agency
- Zero Waste Scotland

Stakeholders

An event of this magnitude undoubtedly affects many people, in order to ensure that the impact is positive, RCE and GEO identified stakeholders and interested parties with whom affective communication and engagement was essential. A summary of the stakeholder groups, their concerns and the communications plan can be seen in the Table.

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Green Drive aims and objectives

The overall aims
• Reduce the environmental footprint of the event
• Maximize the events role in promoting sustainable lifestyles and livelihoods
• Showcase commitment, solutions and real world outcomes

The strategic objectives
Delivering meaningful results across a comprehensive agenda of sustainability issues:

Landscape and Ecosystems
• Active conservation of ecosystems and species
• Promotion of the concept of ‘living landscapes’

Energy
• Minimize overall energy consumption and maximize the use of renewables
• Demonstrate credible action to avoid, reduce and mitigate climate change

Products and Supply Chains
• Engage all stakeholders in delivering a zero waste event, achieved through avoidance, reuse and recycling
• Maximize the use of environmentally and ethically preferred products and services

Water
• Minimize water consumption by optimizing water use efficiency, reuse and recycling

Environmental Quality
• Deploy all best practices to protect the quality of air, water and soil
• Promote the connection between ecosystems, environmental quality and human health

People and Communities
• Consider and respect the needs of local people to minimize and mitigate disturbance
• Diversify the socio-economic benefits of the event to the locality, region and country
The 2014 Green Drive

Top level commitment, integrated planning, implementation on the ground, collaboration and effective communications are key to delivering a sustainable event. The 2014 Ryder Cup identified five delivery actions areas to deliver the Green Drive; each area required collaboration between different stakeholders and delivery partners, effective planning and delivering on the ground in what culminated in a spectacular tournament.

Action Areas
The Green Drive delivers an integrated, practical approach that engages all stakeholders across:

**Venue**
Highest standards of sustainable golf facility management

**Staging**
Lightest possible footprint, maximum green economy stimulus

**Outreach**
Broadening positive impacts through defined projects that benefit local communities, golf and the environment

**Legacy**
Multiplying long term value

**Communications**
Inspiring change with credible and creative promotion
Gleneagles Estate

Gleneagles Estate is one of the most famous and popular golf resorts in the world and is home to nineteen Sites of Scientific Interest (SSI) and one Site of Special Scientific Interest (SSSI). The PGA Centenary Course, the location for the 2014 Ryder Cup, was renovated in 2011 to ensure it remains as spectacular and challenging as possible.

Stewardship of the environment has been a core part of the philosophy of Gleneagles for many years and it has played a pioneering role in the development and application of principles of sustainable golf course management in Scotland. As part of the preparations to host the 2014 Ryder Cup, Gleneagles achieved the international GEO Certified® ecolabel for its club and course management, highlighting its excellent performance and commitment to sustainability.

Gleneagles estate management highlights

A comprehensive programme of grassland management which also addresses long-term restoration of landscape character;
Reduced turfgrass nutrient inputs and transition from poa dominated swards;
Efficient, light-touch irrigation regime sourced predominantly from on-site wetland system;
The expansive site allows generous space for pollution prevention measures for the important wetland system;
Introduction of a central on-site recycling compound;
The golf facility typically provides more than a third of the resort’s 100 full-time jobs.
Gleneagles Hotel
Gleneagles Hotel implements active environmental management; sending zero waste to landfill, installing a biomass boiler for low carbon energy and instituting innovative recycling measures. The hotel currently recycles glass, cardboard, paper, cans and recyclable plastics and has a dedicated area in its grounds to accommodate other products such as unused paints, excess furnishings and pallets. Biodegradable waste from the hotel is also sent to a local farmer for compost, which is then purchased by the hotel at a reasonable rate and re-used throughout the estate.

The Hotel has achieved the Gold Award from the Green Tourism Business Scheme for their environmental work.

Ryder Cup 2014 site protection planning
Together with input from the Green Drive Steering Group and the Gleneagles Estate Management Team, GEO prepared a detailed Site Protection Plan that outlined the potential environmental risks for the Gleneagles Estate; this formed part of the overall event safety plan. The plan included an environmental risk assessment register, incident response guidelines and detailed plans of the entire site. All hazards that could have potentially impacted upon water, air, land or wildlife were identified and steps were taken to reduce the risk, resulting in an event free of any environmental incidents.

The Green Drive team worked closely with suppliers and provided them with the tools to carry out their own site risk assessments and incident planning through a ‘Supplier’s Guide’. Aggreko, the principal supplier of temporary power generators, are certified to ISO14001:2004 and ISO CEMARS (Certified Emissions Measurement and Reduction Scheme) and produced an Environmental Management Plan specifically for the Ryder Cup. Among other efforts made to protect the environment, Aggreko operated all storage, transfer and removal of fuel under strict procedures and all storage tanks stood within a 120% capacity bund. Aggreko are committed to sustainability and are currently researching the potential increased use of biofuels in their generators; appreciating that these must be obtained from sustainable sources.

Spectator routing kept spectators out of SSSI areas and other protected habitats. The mounds along the course lent themselves to spectator viewing and this minimized the impact to other areas of the course. The mounds featured grass, gorse and broom areas and benefited from trampling to thin out the course grasses and let less opportunistic species come back though. There was no reported damage to the SSSI or to the other areas of conservation around the site. Golf Courses and Estate Manager, Scott Fenwick reported “With 250,000 spectators attending Gleneagles during the week of the Ryder Cup, The PGA Centenary Course stood up to the test superbly. The course was in prime playing condition for the matches and handled the high volume of footfall on the course exceptionally well. A month after the event all of the walkways and crossing points had fully recovered and the de-rig went according to plan with minimal damage to the surrounding areas.”

Two weeks before the tournament, GEO were joined by the Scottish Environment Agency (SEPA) to conduct a site inspection to check for any issues. The visit was a success and no problems were identified by SEPA.

Zero environmental incidents resulted from the staging of the 2014 Ryder Cup

Installation of biomass boiler for Gleneagles Hotel providing 74% of heating of air and water
The Procurement Code underpinned the staging contracts that were secured to deliver the 2014 Ryder Cup. The Code was an evolution of the sustainable procurement policy developed for the London 2012 Olympic Games, versions of which are being increasingly used for major sporting events. All Ryder Cup suppliers and contractors were approached early in the planning process and introduced to the Procurement Code, the Green Drive and its aims. They were asked a series of specific sustainability based questions to assess their ability to deliver the procurement code and to identify where the Green Drive objectives may be at risk or where the suppliers could add value to the delivery of the Green Drive. This pro-active approach to suppliers proved successful and almost all responded positively and provided the essential information to assess compliance with the procurement code.

The following questions were asked:

1. Does the organization have a Sustainability Policy or equivalent relevant policies?
2. Does the organization operate a sustainability management system or similar e.g., ISO20121, EMAS, BS8555?
3. How will the organization contribute to the event’s zero waste and recycling commitment?
4. Do the products used comply with the event’s sustainable procurement code?
5. Is wood used – is it FSC compliant?
6. Are products/chemicals used that are hazardous to human health? If so, have alternatives been sought, what is the justification to use these?
7. How will the organization contribute to a low carbon event – e.g., energy consumption of product, fuel use, transportation, etc.?
8. Does the organization adhere to the Ethical Trading Initiative’s base code?

The adjacent chart shows the level of sustainability of the supply chain. Of the total 36 major suppliers that were contacted, 26 replied.

Two thirds of suppliers had a sustainability policy in place; often the first step in improving the environmental performance of an organization. This is a positive indication of the proactive manner in which companies are now viewing sustainability. A total of 10% of the suppliers are certified to ISO 20121:2012, a complex standard, which is awarded in recognition of excellent sustainability processes and standards in event related work. The standard requires a robust management system to be in place, which helps a company act in a sustainable manner. This system must be continually reviewed and improved. The companies with this certification included; Arena Seating, Eve Trackway, GES and Smyle.

Many suppliers provided responses that showed their on-going commitment to sustainability in business, sports and events. If any issues or requirements were identified during this assessment process, advice and help was provided in order to improve sustainability practices. The suppliers were contractually obliged to deliver against the Ryder Cup’s Green Drive objectives, develop a simple operational plan to deliver this and identify a sustainability point of contact. A Supplier’s Guide was provided that helped the Suppliers deliver their contractual commitments.

Overview of sustainability practices in the Ryder Cup 2014
Supply Chain – percentage of suppliers
The main areas of delivery that the Staging team looked at are listed below and are detailed in the following sections:

- Infrastructure
- Food sourcing
- Branding
- Transport
- Energy
- Waste
- Water
- People and communities

**Infrastructure**

Temporary infrastructure has the potential to have a significant impact on the environmental outcomes of staging major events such as the Ryder Cup. Temporary infrastructure included the bus terminals, temporary A9 road crossing, paths, tents and accommodation structures. To reduce the embedded energy of temporary materials used, a strategy of hiring and returning materials to the rental market was adopted as far as possible.

**Transport hubs**

On site at Gleneagles, there were two temporary bus terminals as well as infrastructure at the park and ride locations. The bus terminals needed a solid surface that would withstand the traffic and not be affected by rain. Temporary planning permission was given for these terminals so removal was required. Morrison Construction delivered the construction of this infrastructure for the Ryder Cup. They provided a sustainable, innovative solution both in design and operational control; during the construction phase, they installed a temporary site office and canteen, which were both water and energy efficient, and they sourced energy from Gleneagles, thus removing the requirement to use temporary generators and therefore reducing the carbon loading of temporary power by approximately 50% when compared to diesel generators.

The recycling of existing materials on site meant that there was no requirement to bring new aggregate on site for the project. Initially, soil that was not suitable as a substrate was utilized as a bund to screen the bus terminals. Then the remaining sands and gravel were crushed to form 7,000 tonnes of sub-base aggregate and 5,000 tonnes of road planings. This avoided the need for 600 lorry loads of aggregate, saving 28,000 delivery miles and the recovery of existing materials meant that the high-energy involved in virgin rock extraction was no longer required.

Other good practices that were undertaken onsite include:

- All plant was under five years old, with the majority under one year old, ensuring only the most efficient machinery was operated
- Plant was never parked closer than 10 metres of any drainage ditch, reducing the risk of water pollution
- Fuel was stored in a locked double bunded bowser and refuelling was undertaken by one dedicated and trained operator
- All staff were briefed on the emergency spill response plan
- Silt netting was installed at all locations where potential runoff could enter drainage systems and straw bales were placed around the ditches on site to act as a buffer.

Not only were Morrison Construction a significant building contractor to the Ryder Cup 2014, they also provided a valuable environmental service throughout the event by assisting Green Drive to monitor sustainability aspects of the tournament, from waste management to pollution prevention. They carried out daily environmental audits of the site and event suppliers and any issues that were identified were reported and promptly dealt with.

**Recycling on-site materials, avoided 600 lorry loads carrying 12,000 tonnes of aggregate for the temporary car parks saving 28,000 road miles**
Temporary roads and paths
A number of temporary roads and paths were installed during the event. The paths around the course were improved using stone that would be removed and re-used on site by the estate team after the event. Any use of woodchip was avoided due to the difficulty of removal and temporary nature of its effectiveness. Where heavier traffic was planned, trackway was used, in total there were 7 miles of temporary roadways and walkways installed. Crowd barriers were also an important aspect of the temporary infrastructure, with a total of 11.4 miles of barriers being installed to keep spectators away from sensitive habitats, back of house areas and playing areas.

Eve Trakway were the sole supplier of vehicle trackway, fencing and barriers to the Ryder Cup and are certified to both ISO20121 and ISO14001. Eve Trakway’s products are fully reusable, producing no waste and all necessary materials were already in their stock. They also have an environmentally friendly wash system for cleaning their equipment after use, with 95% of the water used coming from recycled sources.

Tents and grandstands
Like other infrastructure, the tents and grandstands were hired. The majority of high quality tents and grandstands came from two contractor’s existing stock, requiring limited new materials for the event. Both contractors, Arena Group and De Boer carry ISO14001 certification, with Arena also being certified to ISO20121. Both organizations monitor their environmental impacts and are committed to improving their environmental performance. A large proportion of materials used at the Ryder Cup had been previously installed at other events and all wood used on site was FSC certified.

The interior fit-out of hospitality structures can cause significant waste depending on the interior design and specific bespoke requirements. DPI provided interior fit out and hospitality structures for the Ryder Cup. They are a leading international supplier of Event Fit Out equipment, working to cover all aspects of large event planning from design and manufacture to delivery and onsite installation. DPI followed their own Sustainability Policy, which commits to a continued effort to reduce waste and increase recycling. Following the Ryder Cup, 90% of all materials that DPI installed were removed for reuse at subsequent events.

Food sourcing
A major part of the sustainable procurement was the sourcing of local, healthy, eco-certified food products. Food procurement was closely aligned to the Glasgow 2014 Commonwealth Games’ Food Charter and was developed with Scottish Food and Drink amongst other organizations. Local suppliers were engaged early on by the major suppliers – Compass and Jamie’s Fabulous Feasts. Fabulous Feasts maintain a tight audit of all the ingredients of their food products and where possible, the ingredients are locally sourced. They also develop close relationships with their producers meeting them regularly to ensure that the best welfare standards are met. For the Ryder Cup 2014, twenty three of the thirty four suppliers used by Fabulous Feasts were located in Scotland and provided high quality, high welfare and sustainable food, with milk and cheese being organic.

Branding
Branding of major events can create significant production of new materials and waste at the end of the events. The majority of the event branding was delivered by ICON, one of the leading event branding companies. In 2011, ICON were certified as being fully compliant with the Carbon Trust Standard, indicating the company is making real carbon reductions. They have also achieved the Carbon Neutral Standard, meaning they have a net zero carbon footprint. In addition, they (and all their main suppliers) are registered with Sedex, an organization dedicated to responsible and ethical business and supply chains.
Fabulous Feasts sourced 68% of their food from Scottish suppliers.

Event branding was provided by a carbon neutral certified supplier.

90% of the installed interior fit-out materials from DPI will be reused at subsequent events.

Fabulous Feasts sourced 68% of their food from Scottish suppliers.
Travel and Transport

A potential major element of an event’s environmental impact is through the travel and transport of goods, staff, suppliers and spectators. As part of supplier commitments, the Green Drive aimed to deliver goods in the most efficient and effective manner. Compass was one of the catering suppliers during the event. They recently received the Environmentally Friendly Logistics Award in recognition of their partnership with Brakes, which eliminated 300,000 deliveries, resulting in the saving of 4,500 tonnes of carbon emissions in 12 months. Arena Group was responsible for the provision of tents and grandstands during the event. They minimize the impact of transportation by ensuring that all trucks are filled to capacity before departing. They also operate a delivery/collection schedule to guarantee that no vehicles are left idle waiting for materials and the use of hauliers also means that no wasted trips back to the Arena base are required. Agrekko have identified that transport accounts for more than 20% of their carbon emissions and are trying to reduce this figure by efficient use and strategic placing of their service centres. In addition, the contract with the Commonwealth Games in Scotland meant that many generators and staff were already situated close to the Ryder Cup venue, reducing transportation requirements significantly.

Some suppliers, such as Eve Trakway and the Tour Productions, made use of the onsite temporary ‘Snooze Box’ hotel to reduce staff transport to and from the venue. Other suppliers stayed locally in Bed and Breakfast accommodation, provided in the surrounding towns and villages.

The rail network was fully utilized to facilitate spectator travel during the week. Tickets were available for advanced purchase and were all sold out prior to the event. The Gleneagles station was refurbished as part of the community benefits from the event and a new safer access road was built to the station. A temporary road crossing was constructed to allow spectators to safely cross the A9 and provided direct access to Gleneagles.

In addition, a park and ride system was carefully designed to speed up access to Gleneagles and reduce car use. Across the event, 181,744 passengers were transported to and from Gleneagles from the local park and ride locations. This was broken down to: 35,360 from Perth, 67,858 from Balado and 78,526 from Stirling. Feedback from the park and ride customers was very positive, setting a good example and template for other events, particularly in areas with limited public transport facilities. All of the coaches used for the spectator transport from the park and rides operated using between 7-30% bio-diesel to reduce their carbon emissions. Driving styles were tracked using telemetric systems installed in all vehicles, which monitored acceleration and breaking, thereby encouraging more efficient driving. Additionally, the latest bus models were used to ensure stringent environmental standards. Stagecoach provided the bus transport for the park and ride service. They operate an in-house Environmental Management System that is audited annually and verified periodically by external auditors, including the Carbon Trust. Over the past five years, Stagecoach has reduced overall carbon emissions by 18% and vehicle emissions by 3.2%. Moving forwards to 2018, they hope to reduce energy use in their buildings by a further 15% and vehicle emissions by an additional 3%.

BMW supplied the courtesy car range with the latest fuel efficient technology
Waste
A waste plan was developed based on previous Ryder Cup experience and waste quantities. To ensure compliance with the Waste (Scotland) Regulations 2012, which came into force January 2014, comprehensive on site segregation was required. William Tracey, Ryder Cup 2014’s waste contractor, developed a strategy to successfully deliver this and worked with Zero Waste Scotland to deliver an on site recycling system which was constant with the national Recycle for Scotland brand and guidance. To support Scotland’s Zero Waste Plan, the aim was to reduce, reuse recycle or recover all waste, meaning that no residual waste would be sent to landfill. The scale of the event resulted in significantly larger volumes of waste than was anticipated, resulting in on-site contamination. Continuing to build on the trials from the 2014 Scottish Open, the team developed the front and back of house recycling arrangements and highlighted areas of success and areas in which improvements can be made.

Through support from Zero Waste Scotland, the Ryder Cup Green Drive engaged with suppliers regarding their waste disposal, encouraging them to contribute to the waste management plan. Suppliers implemented their own recycling and reuse of materials. Of the waste that DeBoer (tent infrastructure) produced, 300 sheets of plywood were recycled, and 1,700m2 of carpet (which was too damaged to be reused) was shredded and recycled by William Tracey.

Compass is a signatory to the Waste Resources Action Plan (WRAP) voluntary agreement as part of their ISO14001 Environmental Management System. This commits them to reducing food and packaging waste by 5%, and increasing food and packaging waste that is recycled, composted or sent for anaerobic digestion to at least 70% by the end of 2015. In preparation for the Ryder Cup, Compass produced a Waste Management Plan in order to contribute to the event’s zero waste to landfill aim. Jamie Oliver’s Fabulous Feasts new scheme ‘It’s in the Bag’ allows them to package their food in 100% biodegradable bags and catering is delivered in returnable and reusable plastic containers resulting in zero cardboard waste. All the coffee capsules provided by Nespresso were recycled and there was minimal food waste throughout the event due to good menu planning.

Aggreko work closely with their own waste contractors to ensure optimal quantities of their waste is recycled; aiming towards zero waste to landfill. Following every hire, equipment is cleaned and serviced and fuel is filtered to be recycled for further use; this process reduces waste fuel and filters. Permitted service partners are carefully selected to ensure recycling is kept to maximum levels for any disposal of oils, coolants or contaminated fuel.

ICON are a long standing supplier of the Ryder Cup and the European Tour which has enabled them to store and reuse materials from previous tournaments. All ply items (tee signage, giant screens, leader boards) and approximately 55-70% of hoarding used for advertising and information were previously used at Celtic Manor during the last Ryder Cup and only required rebranding. Sponsors bought their own structures, which can be reused at their other events, thus eliminating them from the Ryder Cup waste chain and creating an owner and therefore reuse for the event materials. In total, 78% of materials have been returned to the ICON headquarters ready to be repainted and used again at future events and some of the PVC and PVC mesh was collected and reused by local organizations including a local farmer for screening a large barn. However, PVC remains a difficult item to reuse or recycle and was the primary source of waste resulting from the event branding.

A significant amount of waste construction material was collected for reuse; through the Green Drive, Ryder Cup facilitated a number of suppliers to deliver waste reuse through the local community waste reuse schemes. Perth and Kinross ‘Use to Re-use’ scheme and the Community Resource Network Scotland were critical partners in reaching out to the local organizations, charities and projects who wanted to make use of the valuable construction materials that otherwise would have been recycled or disposed of.
Green Drive worked closely with the Arena Group, who worked alongside their sub-contractor Event Tech, to save large quantities of material to be collected and reused by other organizations and charities (approximately 2 tonnes). They were able to identify a range of materials to post on reuse websites and organized the logistics on the ground for storage and collection to re-distribute aluminium, PVC, glass, plastic extrusion and 90% of the timber through these channels. If any waste wood was not suitable for reuse, it was recycled along with damaged carpet and vinyl by the event waste contractor. The focus for this project was the Aviemore and RTS Grand Stands, where in total 72% of carpet, 71% of the vinyl and 78% of the astroturf were reused, a total of 4812m² material.

The recipients of the materials were from Community Resource Network Scotland (CRNS) whose aim is to build a stronger community reuse sector in Scotland by advertising items to a network of over 800 members. Organizations supported by CRNS include PKAVS, Perth's largest charity that works to improve the quality of life of over 5,000 local people. This includes adults with mental ill health, unpaid young and adult carers and minority ethnic communities. PKAVS will use the wood from Ryder Cup to teach wood work skills to people with mental ill health.

The result of reuse is that communities and charities benefit from materials they are able to utilize, but it also diverts waste from recycling, incineration or landfill and encourages people to look at waste differently; as a resource rather than something to be disposed of.

Of the remaining waste, William Tracey were able to take the segregated waste and the mixed waste streams and apply further segregation and recycling at their material recycling facilities (MRFs). Any waste that could not be recycled was further sorted, bailed and sent to an Energy from Waste (EfW) plant in Holland as there were no reliable EfW plants in Scotland able to deal with the short term increase in volume. Glass, paper, cardboard, metal and plastic was all sent to a recycling facility, either directly or via a MRF sorting facility. Wood that could not be reused was recycled and carpet with no reuse potential was also sent to an EfW plant.

Through the successful partnership between Zero Waste Scotland, Ryder Cup and GEO; Ryder Cup 2014 achieved zero waste to landfill.
**Energy**

Energy requirements to stage a major event can rarely be provided by mains supply. Ryder Cup 2014 was no exception and the staging team worked closely with Aggreko, the main suppliers of temporary energy, to deliver the most reliable, efficient, low carbon temporary power solution. In total 290,457 litres of fuel oil and an additional 29,394 litres of biodiesel were used to power the event (excluding Tour Productions who provided their own temporary power solution). Throughout the Ryder Cup, Aggreko implemented several measures to limit the environmental impacts from their operations including:

- 29,394 litres of pure biofuel was used throughout the event to power generators, replacing and reducing the need for non-renewable fuel by 10%
- Tower light operations were configured on timers or light sensors for night use only and tower lights without this facility were manually activated each morning and night
- Where power packages consisted of multiple engines to provide high integrity electrical supplies, redundant supply engines were not activated until critical or event show times
- Power packages using multiple smaller sets were used, allowing Aggreko to match the number of machines to load on a day by day basis
- 17 new Heatpump chillers were used; these can supply hot and chilled water from one piece of plant which had a positive effect on reducing freight cost/impact

The effective energy management strategy across the venue resulted in a 10% reduction in carbon emissions compared to the initial estimates of energy use. These estimates were based on a 25% increase in temporary power compared to Celtic Manor. This was due to the remote location, a 100% reliance on temporary power and the scaling up of the event. The resulting carbon emissions only increased by 3% – highlighting the effective energy strategy.

**Water**

The event staging team were able to overcome the challenge of providing sufficient potable water through effective partnerships with Scottish Water and MTD contractors. The use of Portakabin and Igloos helped to ensure water efficiency during the event; low flush and push tap fittings guaranteed that taps could not be left running. The cleaning of equipment, such as golf buggies, was kept to a minimum and only carried out for buggies in public view.

**People and communities**

The local community was kept abreast of the build and event planning at all stages and a community liaison group was established at the outset of the event planning to engage and communicate concerns and plans with the local residents. As a result there were very few complaints and none that could not be immediately addressed and rectified.

**Effective energy management resulted in a 10% reduction in carbon emissions from the initial estimates**
Ryder Cup and Gleneagles were committed to leaving a long lasting, positive legacy in the surrounding areas and communities. The Ryder Cup brought significant benefit to a number of areas across Scotland and further information can be found in the Ryder Cup 2014 Legacy Story published by the Scottish Government. In particular, the Scottish Government provided £250,000 of funding enabling four outreach projects to be established resulting in real benefits being brought to local community groups and organizations. All the projects were located within Scotland and focused on nature, golf or waste.
John Muir Trust
www.johnmuirtrust.org
The John Muir Trust is a UK conservation charity dedicated to protecting wild places. It owns and cares for some of the UK's finest wild landscapes including Ben Nevis, Schiehallion and part of the Cuillin on Skye. The Trust encourages the natural regeneration of native woodlands and other habitats, and works to connect people of all ages and backgrounds with wild places through its educational initiative, the John Muir Award. The charity takes its inspiration from John Muir, the Scottish born founder of the modern conservation movement. Like Muir, the Trust believes in protecting wild land for its own sake and because we all need wild places; recent projects have included:

• Protecting and enhancing over 300 hectares of native woodland across the Scottish Highlands to encourage native woodland regeneration.
• Completing the construction of a tree nursery at Glenlude in the Scottish Borders and planted over 2,000 native broadleaf trees to date.
• Protecting over 4,500 hectares of peat land (a valuable natural carbon sink).

In addition to the wider native woodland, peat land and wild land conservation work of the Trust, Ryder Cup funds work in connecting young people with nature, helping to integrate the John Muir Award into 75% of Scotland’s further education colleges for active and participatory learning. In 2014, 12,000 people benefitted from this connection in terms of improvements in health, wellbeing and learning. Around 30% of the people taking part are from deprived or disadvantaged backgrounds.

Key achievements following Ryder Cup support
Over 60,000 people across the UK (90% under the age of 24) have taken part in conservation activities through successfully completing their John Muir Award, with over half of those in Scotland. Ryder Cup funding has directly enabled the John Muir Award team to support approximately 5,000 individuals over a two-year period to take part in the John Muir Award.

Ryder Cup contributions enabled 5% of the work to regenerate peat land and woodland the Trust’s care.

School children participating in the John Muir Award - The John Muir Trust Engagement Initiative
Photo by Katrina Martin
Perthshire Big Tree Country
www.perthshirebigtreecountry.co.uk
Extending the donations provided by Gleneagles Resort over the last 7 years, Ryder Cup supported Perthshire Big Tree Country’s work to conserve Perthshire’s woodlands and ancient and heritage trees, many of which were gathered by Victorian plant collectors. Around 13% – 90,000 hectares – of Perthshire is covered in trees, and the area boasts 22 of the Top 100 Heritage Trees of Scotland. No other region in the UK or Europe has such a remarkable or internationally important resource in terms of large, ancient trees. Examples of these species can be found at Gleneagles itself.

The main recent actions and outcomes supported through the Ryder Cup include:

• As part of the Ryder Cup Green Drive initiative, a grove of trees will soon be established within the grounds of Gleneagles from the offspring from several of Perthshire’s famous big trees. A few years ago seed was collected from the trees, grown on in a tree nursery and these young trees are now ready for planting out in an area beside the Falconry School at Gleneagles.
• The autumn 2014 – spring 2015 planting programme is developing and a new virtual tree trail has been launched to guide people around a network of sites in Perthshire Big Tree Country participating in the ICONic project.
Sustainable Golf Clubs
http://www.sgeg.org.uk/
Extending years of work to promote environmental awareness and action across Scotland’s 540 golf clubs, the Scottish Golf Union are leading this project with their subsidiary, the Scottish Golf Environment Group. Ryder Cup legacy funds and Scottish Government contributions have been combined to support biodiversity projects aimed at improving the ecological value of golf courses and generating sustainable benefits to clubs in the Perth & Kinross area. Grants have been provided to clubs to create new woodlands, meadows, ponds and wetlands – reducing course management costs and enhancing the courses in the process. Clubs also have the opportunity to be recognised for their environmental activities by becoming GEO Certified®.

Through the Scottish Golf Environment Group, member clubs across Scotland have access to free environmental advice and support. This includes advice on nature, landscape, and turf management to help improve their courses; support with resource use, supply chain and waste management, water and energy efficiency, and integration with members and local communities. With help from specialist experts in the Tayside Biodiversity Partnership, many of the projects will contribute to local, regional and national biodiversity targets. Projects currently underway include habitat improvements such as tree planting, and heathland and pond creation, along with conservation projects for birds including swifts and barn owls, bats, and red squirrels.

Case Study: Pond Creation And Sustainable Drainage Auchterarder Golf Club
Auchterarder Golf Club required improvements to its drainage system and worked with the Scottish Golf Environment Group to develop a sustainable wetland and pond project. The project not only provided effective drainage management that helps to maintain good course conditions, but also additional habitats via the inclusion of sloping edges to the pond, a central island and planted margins which has so far encouraged wildlife colonization including waterfowl and invertebrates. The surrounding area was also seeded with wild flowers and a mixture of grass species to create a beneficial and attractive grassland habitat.
Zero Waste Auchterarder & Aberuthven
http://www.pkc.gov.uk/zerowastecommunity

Zero Waste Auchterarder & Aberuthven was launched with a Zero Waste Fortnight in November 2013. Led by Perth & Kinross Council, the project is helping Auchterarder and Aberuthven to become a Zero Waste Community, where as much as possible of its household and business waste will be reduced, reused or recycled. Annual campaigns and a series of local activities, led by or involving local community groups and schools engage people and have already begun to significantly reduce the disposal of waste to landfill.

Recent milestones in the delivery of this Perth and Kinross Council led initiative were:

- The Auchterarder & Aberuthven Home Composting Project has started
- The Waste Services Education & Awareness Officers visited Aberuthven Primary School and Ochil Tower School to deliver talks, every pupil then visited the Waste Education Boardwalk (WEBWalk) at Friarton Recycling Centre.
- Reduce, Reuse, Recycle noticeboards and banners were installed in Auchterarder and in Aberuthven.
- During the summer of 2014, a Biodiversity Walk, a six week Workshop where a collection of artistic pieces were made from unwanted materials and a Bike Maintenance Workshop all took place.
- A newsletter was produced in August to update the Auchterarder and Aberuthven community on the progress, to-date, of the Campaign. This was distributed to every household in Auchterarder and Aberuthven by the local Scouts, Cubs and Beavers.
- A six-week Chair Revamp Course began in August, to teach participants the skills to give new life to their furniture.
- The Brownies are working with a local Reuse Project – Remake Scotland, to create a catalogue of outfits, using unwanted items from local householders and businesses. During the final workshop, these will be modelled at a Fashion Trashion Show.
- The 2014 Zero Waste Fortnight took place from Wednesday 5th November until Wednesday 19th November. During the event, householders were encouraged to keep their general waste bins as empty as possible by reducing, reusing and recycling more of their waste.
Legacy

The Ryder Cup’s Green Drive will continue to leave an enduring and positive legacy as a result of the efforts made before and throughout the entirety of the event. Through working systematically with suppliers and focusing on waste, local communities and site protection, GEO were able to test and develop many elements of a new voluntary industry standard for sustainable golf tournaments. Additionally, Gleneagles was already GEO Certified® setting an excellent example to other courses internationally due to its eminent and legendary reputation.

Lessons learnt from this event will also contribute to more sustainable subsequent Ryder Cup events and help to establish a benchmark; in 2018 the event will be located in Paris where further efforts will integrate sustainability into the heart of the staging and legacies of the event.

European Tour Green Drive

The European Tour is committed to build on the achievements of the Ryder Cup Green Drive and role out a similar programme across all their events. By monitoring performance across a number of indicators, they will work to continually improve each event, starting with the venues. The objective is to have all venues hosting European Tour events becoming GEO Certified®. In addition, The Tour will implement a range of measures including comprehensive waste management, building on the waste-reuse experience from the Ryder Cup to bring real practical benefit to local community groups at each event. For each tournament, The Tour will continue to reduce the negative impacts and maximize the positive legacy each event can deliver.
Communications

Communicating objectives, information and stories of good practice is essential to the smooth running and success of any major event, including the Ryder Cup. Supported by GEO, RCE endeavoured to reach as wide an audience as possible.

**Internal communications**

Much of the communication that took place before the tournament was between GEO and the contractors and suppliers to ensure that everybody involved was committed to reaching the same sustainability goals. The supplier’s were briefed and the Supplier’s Guide was circulated to all suppliers prior to the event. Each contractor coming to site received a site induction covering health and safety as well as environmental site protection and waste management information. They were then responsible for passing on the information to their own staff.

Our supplier’s reported on their initiatives with staff and sub-contractors. Eve Trakway ensured all their staff were briefed about the aims of Green Drive upon their arrival onsite and were provided with the Green Drive Suppliers Staging Guide, along with a copy of the company Environmental and Sustainability Policy. Fabulous Feasts’ staff were fully briefed about sustainability and in particular the importance of recycling, there was also designated staff members who dealt with all of the waste produced and disposed of it correctly. All of De Boer’s staff understood the aims of Green Drive clearly, specifically the need to save as much material for future use and to recycle damaged products.

**External communications**

A series of events and communications were carried out in the build up to the event including press releases about key activities, milestones and outcomes, including the appointment of suppliers. A launch event for the Outreach projects was attended by Richard Lochhead, Environment Secretary and was widely publicized. In addition, Scottish Natural Heritage included information in their magazine on the Ryder Cup’s Green Drive as part of their “Homecoming Scotland” article.

The Ryder Cup website and newsletter published regular features on the Green Drive in the build up to the event. The Ryder Cup partner’s newsletter also carried a feature ‘About the Green Drive’.
Spectator communications
Engaging with spectators is vital to achieve on the ground support for sustainability initiatives. Spectators were informed of the public transport options and other low carbon travel options which resulted in the trains being fully booked well in advance of the event. The Green Drive and front of house recycling was highly visible with bin toppers, supported by Zero Waste Scotland’s programme Resource Efficient Scotland, encouraging recycling and segregation of waste. The merchandising bags carried a ‘reuse and recycle’ message on them and the cardboard event radio boxes stated that the box was produced from recycled materials and could be recycled after use. In summary a raft of spectator communications were delivered as listed below:
• Green Drive posters on buses in the surrounding area
• Green Drive, Zero Waste Scotland and John Muir Trust posters on event park and ride buses
• Green Drive leaflets distributed
• Spectators Guide sustainability article
• Ryder Cup Programme sustainability article
• Media briefings
• Commentator briefings
• Recycling information on public facing packaging and products
• Recycle for Scotland messages in catering areas
• Food sourcing information on catering menus
• Regular Tweets (see Fig 2)

Post Event Online Survey
Sheffield Hallam University conducted an economic assessment of the Ryder Cup which incorporated a detailed post event survey of visitors to the event, featuring several questions to assess public sustainability awareness and Green Drive communications. The survey returned the following results:
• 25.6% of spectators questioned after the event were aware of the Green Drive initiative
• 65.7% were aware of the recycling points located throughout the staging areas
• 24% noticed the fair trade information advertised at food outlets
• 45% were either fairly or very willing to donate in the future if their money went towards meaningful and charitable causes relating to local communities and the environment surrounding large golf events
• Of the spectators questioned, their top three environmental priorities and those which ranked the most important were nature, transport and waste, with 68% stating waste as in their top three.

The results not only helped to assess the current success of communications, but will also act as benchmark for future golf events to be compared to.
Conclusion

Ryder Cup 2014 was a hugely successful, spectacular event, with 239,611 spectators attending the event from 96 countries. As one of the world’s largest sporting events, the Ryder Cup was broadcast to 183 countries, reaching more than 500 million homes around the world. The event saw twenty-four of the best players from Europe and the United States go head-to-head, with Europe emerging victorious.

The Ryder Cup 2014 delivered across its Green Drive aims and objectives and established new benchmarks for sustainable event management, not just across golf, but all major sporting events. The environmental, social and local community benefits that were achieved through the ambitious Green Drive programme were significant and provide a sound framework for Ryder Cup and other major events to build upon. This report has highlighted the extent of the Green Drive and the work that went into these achievements and the partners required to deliver it. It is hoped through sharing experiences other events can continue to be increasingly sustainable in the future. Of significant note, the Ryder Cup 2014 Green Drive has inspired the European Tour to commit to delivering similar sustainability programmes across European Tour events and the R&A has also committed to delivering a sustainable event at the Open Championship in 2015 – building on this experience and delivering a certification template for all golf tournaments to follow.

The partnership between the Ryder Cup 2014, the Golf Environment Organization (GEO), Event Scotland and the Steering Group provided effective supplier communications, site protection, resource efficiency planning and laid the foundations of the development of a new sustainable golf event certification to sit alongside the existing GEO certified eco-label for club and course management. The host venue, Gleneagles Resort, was a major contributor, building on a fifteen-year commitment to good environmental management for the hotel, golf courses and wider estate.

Ryder Cup Director, Richard Hills, commented: “We strive to blend tradition with modern day expectations, so stepping forward to integrate environmental and social responsibility into the bidding and delivery of The Ryder Cup was something we wanted to do – it was a good fit with all our other initiatives. Now we have established a strong and effective approach to doing that, it is starting to become business as usual. We are excited to share our very positive Green Drive experiences with other tournament partners across golf, adding yet another great legacy to our time in Scotland.”
Annex A: GRI reporting framework

This Ryder Cup Green Drive Post Event Report follows certain elements of reporting principles set out by the Global Reporting Initiative (GRI) to encompass elements of sustainability. GRI is a leading organization in the sustainability field; it promotes the use of sustainability reporting as a way for organizations to become more sustainable and contribute to sustainable development. Ryder Cup and GEO have chosen to use aspects of GRI because it requires detailed enough data to enable a meaningful and respected report that stakeholders can easily interpret and make comparisons with future events.

The report features the introductory information that GRI requires, and several additional sections, which focus on the additional aspects that were significant at the Ryder Cup.

Some introductory information is required by the reporting standing, others are optional. The additional aspects, which have been selected to be investigated, have been chosen due to their significance before, during or after the Ryder Cup; they may be important to the environment, resource efficiency, the local community or wider society.

The following principles will be applied when reporting:

• Relevance: Data will be reported appropriately to reflect sustainability impacts
• Accuracy: Data will be as accurate as possible
• Completeness: All identified aspects will be disclosed to ensure a complete and valuable report
• Consistency: Methodologies and reporting techniques will be consistent so results are meaningful and reliable
• Transparency: Calculations, methodologies and other internal processes will be made available

<table>
<thead>
<tr>
<th>Aspect</th>
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<tr>
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<td>Energy consumption within the organization</td>
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<td></td>
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<td>Energy consumption outside of the organization</td>
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<td>Habitats protected or restored</td>
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<td>Effluents and waste</td>
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<td>Total weight of waste by type and disposal method</td>
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<td>Products and services</td>
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<td>Extent of impact mitigation of environmental impacts of products and services</td>
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<td>Compliance</td>
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<td>Significant environmental impacts of transporting products and other goods and materials for the organization’s operations and transporting member of the workforce</td>
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<td>Overall</td>
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<td>Percentage of new suppliers that were screened using environmental criteria</td>
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<tr>
<td>Human Rights</td>
<td>G4 SO1</td>
<td>Percentage of operations with implemented local community engagement, impact assessments and development programs</td>
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Annex B: Ryder Cup Europe and the Golf Environment Organization

The Ryder Cup and The PGA European Tour
Ryder Cup is the largest golf tournament in the world, held every 4 years, in either the US or Europe. The European hosting of the event is managed by The PGA European Tour, an organization operating a broad range of business initiatives essential to its primary mission of administering professional tournament golf. The European Tour is based in Wentworth, Surrey and employs approximately 155 full time staff. The organization operates throughout Europe and in several other countries including South Africa, Hong Kong, Malaysia, Morocco, China, UAE, Qatar, Russia, Australia, USA, and Dubai; hosting and managing around 45 golf tournaments and events annually. No significant changes to organizational structure occurred during this reporting period (Autumn 2014).

The Golf Environment Organization and Green Drive
The Golf Environment Organization (GEO) is an international, non-profit initiative which helps the golf industry to effectively integrate sustainability across course and club management, new facility development and tournament staging. GEO also administers golf’s ecolabel, GEO Certified® – the symbol of great golf environments worldwide.

Green Drive helps golf tournament organizers to deliver high quality, successful tournaments that create positive and lasting economic, social and environmental impacts.
The 2014 Ryder Cup Green Drive
Sustainability leadership in and through golf