SCOTTISH ENVIRONMENT BUSINESS AWARDS VIBES 2017

Case Study -
Hydro Nation

The Glenmorangie Company

Hydro Nation

The Glenmorangie Distillery, based in Tain, is the home of the Glenmorangie Single Malt Scotch Whisky brand. The site distils, matures and produces this iconic product. Glenmorangie whisky is sold in 135 countries worldwide. The DEEP – Dornoch Environmental Enhancement Project is an innovative approach to the reduction of BOD and COD in the aqueous effluent. The desired outcome of the project is to enhance water quality and biodiversity within the Dornoch Firth through a combination of waste treatment process and regeneration of a biogenic oyster reef.

The Hydro Nation Award recognises businesses, partnerships and collaborations that have specifically developed innovative products, practices or services in the area of water treatment and water technology.

Highlights

Enhanced water quality and biodiversity within the Dornoch Firth through a combination of waste treatment process and regeneration of a biogenic oyster reef

Anaerobic digester system has reduced the biological load discharge to sea by 95%

The Oyster bed is designed to clean up the last 5% of biological load

The reef will act as a large bio filter to protect the shoreline close to the distillery buildings from potential global warming effects of higher seas

Winner of the Hydro Nation Award 2017

Sponsored by Scottish Government

The innovative DEEP (Dornoch Environmental Enhancement Project) was planned as a tertiary treatment to compliment the recently built anaerobic digestion system. The anaerobic digestion (AD) plant removes 95% of the COD load in the aqueous waste stream.

The oyster bed is designed to clean up the last 5% and to produce a reef that, as it grows, protects the shoreline close to the distillery buildings from potential global warming effects of higher seas. The reef acts as a large bio filter cleaning the effluent from the distillery discharge and other organic materials in the Dornoch Firth.

The Company have developed the DEEP project in partnership with the Centre of Marine Biodiversity and Biotechnology at Heriot Watt University and The Marine Conservation Society. Oysters existed in the Dornoch Firth for at least 6000 years prior to being fished out completely 100 years ago. The planned restored biogenic reefs will improve the overall water quality of the Firth, create a biodiversity hotspot and provide a demonstration site to study the benefits of oyster reef restoration that can be exploited elsewhere.

There is a 10 year project plan for DEEP – this involves harvesting European Oysters; growing on the sprats to a suitable size; reintroducing them to the Dornoch Firth (on waste mussel shells) and monitoring the success.

Over this 10 year period the AD plant will treat 12 million tonnes of water and remove 45,000 tonnes of COD from the discharge. The process generates biogas that will be utilised within the distillery operation. Gas produced will offset 825te of heavy fuel oil per annum. Gas production will reduce primary fuel CO_2 discharges by 2.7million KgCO2/annum.

Dr Peter Nelson, Operations Director at The Glenmorangie Company, said: "*We are honoured to have been recognised at this year's VIBES – Scottish Environment Business Awards. Winning the Hydro Nation Award is a real testament to the innovative work and commitment from everyone at The Glenmorangie Company and our partners at Heriot Watt University and The Marine Conservation Society. Working towards achieving a sustainable future is key to our collective ambitions. We hope by taking our place amongst many excellent companies working to deliver a sustainable future will inspire more organisations to make a difference.*"