

# Diageo Cameronbridge Distillery

## Food & Beverage | Case Study

### The Client

Diageo is the world's leading premium drinks business; trading in around 180 countries, with a vast collection of beverage alcohol brands across spirits, beer and wine.

Cameronbridge distillery is Diageo's largest grain whisky distillery in Scotland, producing about 105 million litres of spirits at the site each year. Currently 20% of Scotland's wheat harvest is processed through Cameronbridge.



### The Client's Needs

Diageo wanted to create a flagship manufacturing site at Cameronbridge representing the scale of their ambition for the sustainable growth of the business. They wanted to ensure that the Distillery was at the forefront of innovation in renewable energy and would set a new benchmark for environmental sustainability in distilling, not just in Scotland, but on a world stage.

### The Solution

Diageo commissioned a new multi million pound bio energy facility at Cameronbridge and chose to partner with Veolia on this sustainable project.

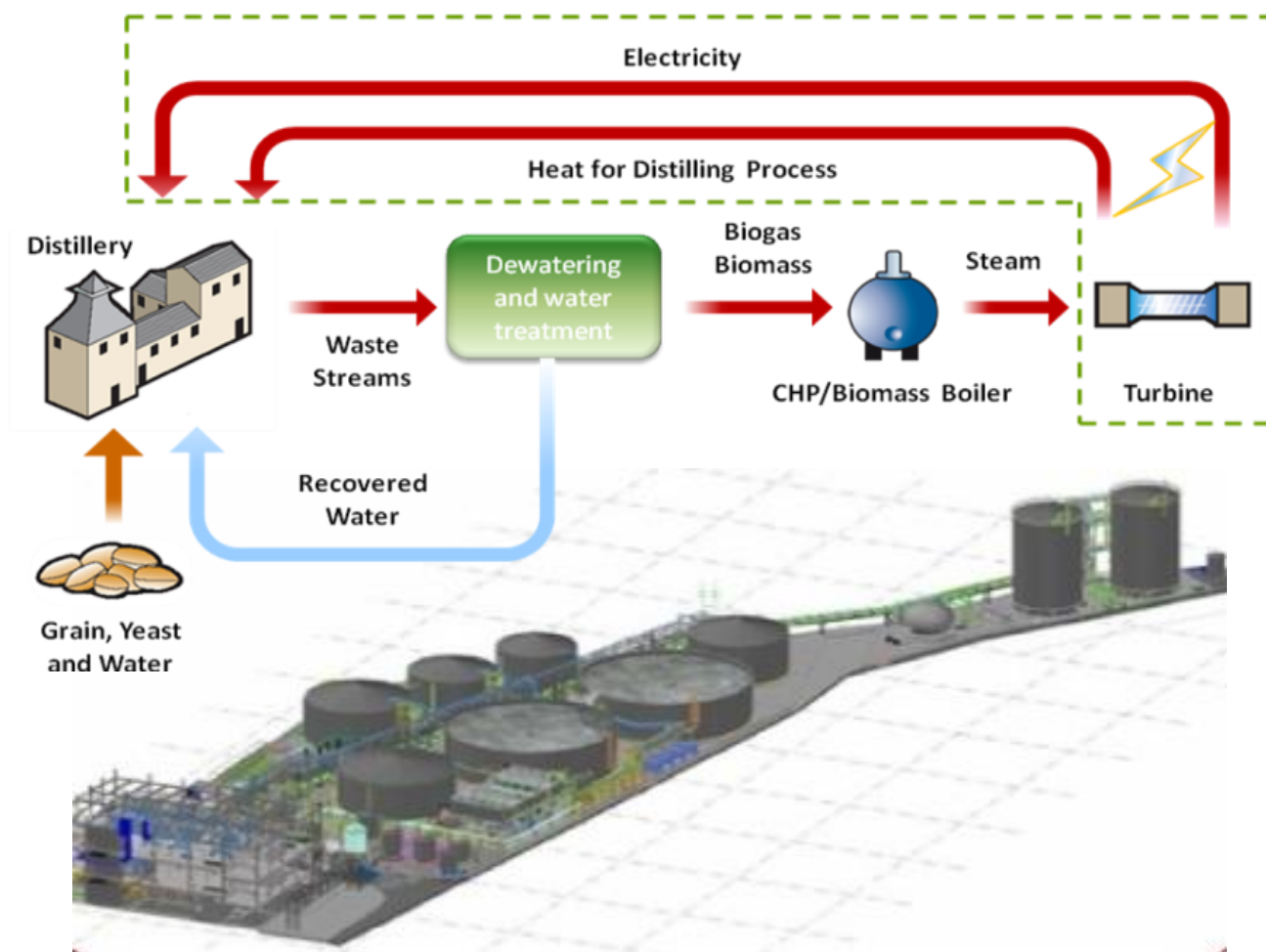
Veolia Water Technologies were contracted to design and build the dewatering and aqueous treatment plant. Veolia UK (Dalkia) is responsible for the biomass and biogas boilers to create the green energy and will operate the plant.



The Bioenergy plant generates renewable energy from the spent wash and CIP liquors produced during distillation. The spent grain, a mixture of wheat, malted barley and yeast, is separated from the wash and dewatered to provide fuel for a biomass boiler. The remaining liquid is then treated in a purpose built treatment plant.

## Process Description

The first stage of treatment is an anaerobic process, generating biogas, a by-product, to provide additional fuel to the biomass boiler which provides heat and energy to the distillery. This is followed by an aerobic nitrifying and partial denitrifying membrane bio reactor (MBR), using ultra filtration membranes. The MBR stage will be followed by reverse osmosis to produce high quality water for boiler feed and CIP water. The Bio energy facility will provide 98% of the steam and 80% of electrical power used at the distillery, and reduce annual CO<sub>2</sub> emissions at the site by approximately 56,000 tonnes. The plant will convert several thousand tonnes a year of co-products and residues from the distillery into biogas and biomass solids. These will feed a 7 megawatt electricity plant, producing enough power to supply approx 10,000 homes.



## Resulting Benefits

A high rate anaerobic treatment system is used to convert a large proportion of the Soluble Chemical Oxygen Demand (SCOD) in the aqueous stream into valuable biogas.

Biomass and biogas is burnt in the boilers producing steam and electrical energy – used on site exported to the national grid.

The RO treated water is returned for re-use within the bio energy plant and distillery.

### Veolia Water Technologies

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