

**brewing green/
our commitment
towards a sustainable
future for Britain's beer.
year one update**



introduction



In December 2010 we published 'Brewing Green', setting out our commitment to reduce our impact on the environment.

This report is the first annual update on how the industry is performing against our targets and the steps being taken to achieve them.

We are pleased to report that the industry has already made significant progress in its ambition to cut carbon emissions by two thirds by 2020, continuing the impressive increases in energy efficiency seen over recent decades.

Collaboration remains crucial to our ambitions. We have worked with a range of partners through 2011.

Government agencies such as the Environment Agency, the Waste and Resources Action Programme (WRAP), Zero Waste Scotland and the Carbon Trust have all played a valuable role in assisting the sector. Working with other sectors, and other parts of the brewing supply chain, has also added additional benefit to brewers.

It is important that the relevant government departments continue to support the brewing sector and set out a clear, consistent regulatory framework for how industry can efficiently deliver environmental improvements whilst remaining competitive. The BBPA and brewers remain committed to working with the government to this end.

The industry is rightly proud of our achievements. We are determined to build on them. The evolution and improvement shown in this report reflect our progress this year.

Brigid Simmonds OBE
Chief Executive, BBPA

our commitments/

#01 carbon emissions/

To reduce carbon emissions by 67 per cent by 2020 compared to 1990.

#02 water efficiency/

To achieve an industry average of less than four litres of water for each litre of beer produced, a reduction of 42 per cent by 2020 compared to 1990.

#03 renewable energy/

To increase the use of renewable energy within the sector.

#04 waste reduction/

To continue to reduce the amount of waste sent to landfill year on year and increase the amount reused.

#05 packaging waste and recycling/

To play our part in the reduction of packaging waste from our products.

#06 packaging reduction and 'lightweighting' of containers/

To minimise the use of packaging without compromising the safety and quality of our products – through lightweighting and working with the wider supply chain.

#07 use of raw agricultural materials/

To continue to improve the efficient use of raw materials.

#08 environmental management systems/

To ensure appropriate environmental management systems are in place, covering carbon, energy, water, effluent, waste minimisation and packaging to reduce the environmental impact of brewing and in support of brewers' environmental policies and operating permits.

#09 sustainable production/

To develop plans to ensure the sustainable future of brewing in the UK, by monitoring and managing potential supply-side risks.

#10 Accountability and transparency/

To produce an annual report that sets out progress against agreed plans and targets, and to enhance the quality and quantity of data available to monitor progress against all targets.

#01 carbon emissions/

to reduce carbon emissions by 67 per cent by 2020 compared to 1990

Last year the sector set out its aim to reduce carbon emissions by around two-thirds by 2020, compared with 1990 levels. Brewers have already achieved much of this reduction but are determined to go further.

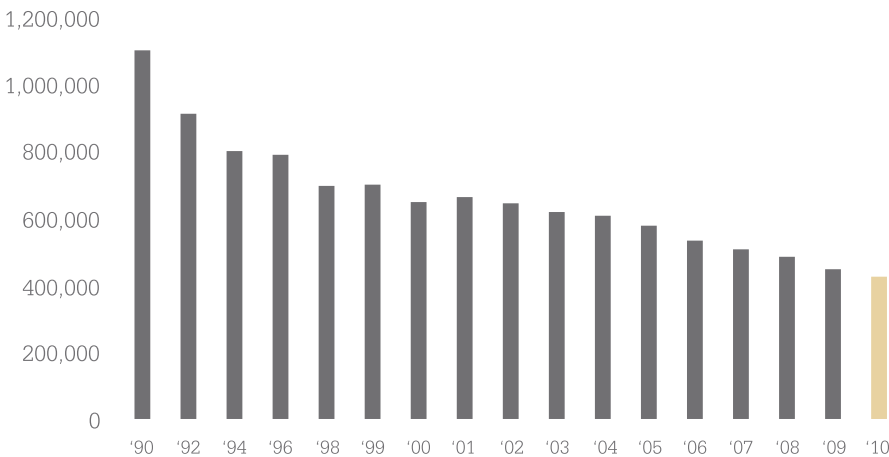
There was a very strong performance in 2010, with a further 4.1 per cent drop in carbon emissions from the brewing and packaging processes.

As the chart and data shows, emissions in 2010 were 61 per cent lower than in 1990. The target is to reduce industry emissions to 365K tonnes per year, from around 1.1 million tonnes in 1990. If the current impressive rate of progress continues, brewers will be on course to exceed the 2020 target and if possible, go even further.



**Brewing sector
CO₂ emissions**

Tonnes of CO₂



Climate Change Agreements and energy efficiency

Climate Change Agreements (CCAs) are a major tool for focusing business on improvements in energy efficiency. The first phase of CCAs came to an end with the reporting of the 2010 data. The scheme has helped to bring about a shift in the way that brewers think about energy, with all companies required to regularly monitor energy use and set out plans for increasing efficiency.

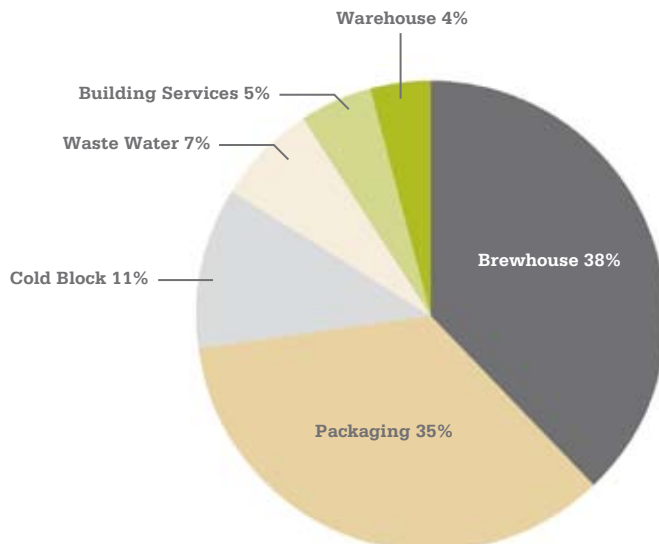
The brewing sector met its target by increasing energy efficiency over the decade of the scheme by 25 per cent. This was complimented by a 4.3 per cent increase in energy efficiency over the course of 2010, leading to the emissions reduction seen in the chart on page 03.

Carbon Trust report – can the sector go further?

The BBPA has worked with the Carbon Trust to identify how energy is used within breweries (see chart below). We need to explore the potential technologies that could reduce the energy used in key areas. A report; Industrial Energy Efficiency Accelerator - Guide to the brewing sector has been published, so that brewers, large and small, can understand where savings can be made.

Several areas of energy use were examined including the boiling process, small pack pasteurisation, keg and cask processing and cleaning-in-place. Existing and new technology solutions were identified and evaluated for likely energy savings and cost.

Typical site CO₂ breakdown



#02 water efficiency/

to achieve an industry average of less than four litres of water for each litre of beer produced, a reduction of 42 per cent by 2020 compared to 1990

Sharing water efficiency expertise

Working together to share water efficiency expertise remains a priority. The environmental consultancy Alectia addressed brewers on the important issue of water efficiency in October 2011.

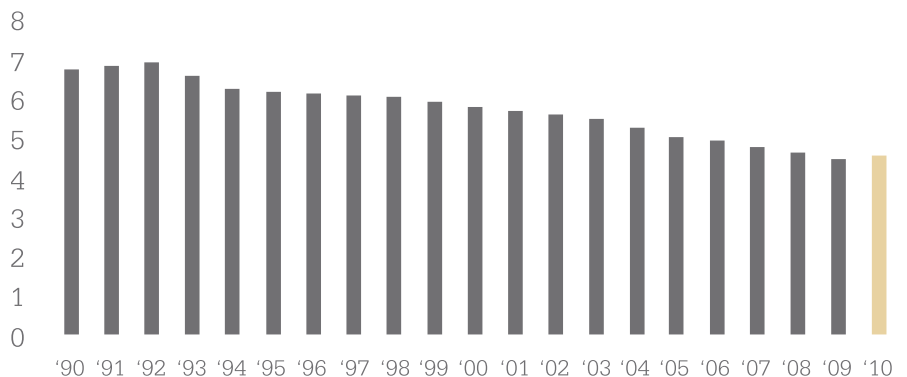
Using their experience of working with global brewers around the world, Alectia was able to showcase technologies and management processes that could deliver significant reductions in water use, effluent output and overall energy usage, as well as lower costs. Alongside reducing overall water use, a reduction in effluent is a key knock-on benefit.

The largest UK brewers are considered to be some of the most water efficient in the world. This commitment aims to take this strong performance further. UK breweries operate under a wide range of water efficiencies, reflecting the use of different processes, beer styles and packaging formats.

Water usage per hectolitre of beer increased slightly in 2010, but was still below the 2008 average and well down on earlier years. Diseconomies of scale from declining volumes and the continuing shift from draught beer to bottles and cans (which require more energy per hl) more than offset efficiency gains this year. Between 2007 and 2010, bottles and cans increased from 48 per cent to 51 per cent of total sales.

Brewing industry water consumption

water used hl/hl



#03 renewable energy/

to increase the use
of renewable energy
within the sector

Renewable energy in the brewing sector largely comes from the production of biogas from the treatment of wastewater. Wide-scale renewable projects are regularly explored by brewers but the economics make many high-capital projects unfeasible. Brewing sites are often based in built-up, urban areas, which is also a constraint.

At a workshop organised by the BBPA in 2011, a high-level examination of the financial viability of renewable projects was presented, including costs and payback periods. Wind turbines, solar photovoltaic panels, biomass and anaerobic digestion were all explored.

The incentives in place, such as renewable obligation certificates (ROCs), feed-in-tariffs and the Renewable Heat Incentive were examined.

Progress towards this commitment is likely to be limited in the short-term due to the significant costs involved, despite small-scale projects carried out by some brewers.



#04 waste reduction/

to continue to reduce the amount of waste sent to landfill year on year and increase the amount reused

Brewers are constantly looking to reduce the waste they generate. There are a number of sites within the sector that have managed to achieve 'zero waste' through innovative management techniques that ensure all products are treated as having a value. Many other brewers are making significant reductions and will shortly have negligible levels of waste.

Data provided by the Environment Agency (EA) reveals the significant steps that have been taken to reduce the disposal of waste over the last five years. As shown below, recovery of waste increased from 71 per cent in 2006 to 89 per cent in 2008 and 2010.

Although total waste increased in 2010 according to EA data, current actions being taken mean we remain confident of further improvement in these figures. Indeed, data provided by brewers shows waste falling and even higher recovery rates. It should also be noted that the EA definition of waste widened between 2006 and 2008.

Waste production, disposal and recovery, permitted installations (tonnes)

Years	Waste production	Disposal	Recovery, recycling and reuse	Recovered
2006	95,178	27,689	67,489	71%
2008	118,881	13,244	105,637	89%
2010	125,783	14,321	111,462	89%

Molson Coors - zero production waste to landfill

In July 2011, Molson Coors (UK & Ireland) publicly declared its goal of zero production waste to landfill by the end of 2012.

Only five years ago, over 50 per cent of the solid waste generated at UK Molson Coors sites was routinely disposed of in landfill. By September 2011, less than 1 per cent of the solid waste generated from the entirety of its breweries, maltings, offices and wholesale depots ended up in landfill. This represents a significant step forward on the journey to zero to landfill.

Since 2005, the company has focused on increasing the range of recycling facilities on sites from traditional metal and paper recycling bins. Green waste is now routinely sent for composting, wood and plastics are segregated and recycled, and composting routes have been found for sludge and filter powder waste streams.

At the Burton-on-Trent brewery, a materials recycling facility has been installed to sort and maximise the value of recyclable materials. Since the new binning scheme was introduced in July 2011, Burton brewery has sent zero production-related waste to landfill.

Residual, non-recyclable waste streams are sent to energy recovery schemes or other recovery routes where possible. This has meant that the Burton office complex and maltings have been 'zero to landfill' for much of the year and the Tadcaster brewery since summer 2011. New solutions are always being sought to reduce the amount of waste going to energy recovery. Waste audits have taken place at all sites to identify further opportunities for diverting this volume.

Even at Molson Coors office sites opportunities have been realised. At the company's Cardiff office a waste audit identified that by changing the recycling bins the amount of waste sent to landfill could be reduced by up to 50 per cent and in the process save money on waste disposal costs.

Molson Coors is intent on continuing its journey to zero production waste to landfill, which it will meet by the end of 2012. In addition, the company will continue to seek more innovative ways to reduce the overall waste generated from operations, minimise resource use and increase efficiency in all that it does.

#05 packaging waste and recycling/

to play our part in the
reduction of packaging
waste from our products

Brewers have a strong interest in encouraging higher recycling rates. The higher the quantity and quality of packaging recycled the more affordable and sustainable future packaging becomes.

Brewers have supported the Waste Resources Action Programme (WRAP) in its project to provide consumers with clear 'on-pack recycling labels', with the country's four biggest brewers all signed up to the scheme. It is hoped this simple to understand information will encourage beer drinkers to recycle their product's packaging.

The industry has also actively engaged with Zero Waste Scotland which is looking at trials that could improve recycling rates.

Heineken in the UK adopts on-pack recycling logo

The carbon impact of packaging is primarily determined by the choice of material, its weight and recycled content. Heineken in the UK has made significant reductions in packaging weight.

To aid greater recycling, from the start of 2011 Heineken has been applying the British Retail Consortium on-pack recycling logos to packaging. These logos are aimed at providing consistent information to consumers on whether packaging is recyclable through local doorstep collections.

The initiative has also been adopted by others within the industry. For example, Carlsberg have the on-pack recycling label on 80 per cent of their primary packaging and will have 100 per cent of cans and bottles carrying the label in 2012.

recyclenow.com



BOTTLE

GLASS
widely
recycled



#06 packaging reduction and lightweighting of containers/

to minimise the use of packaging
without compromising the safety
and quality of our products –
through lightweighting and working
with the wider supply chain

The BBPA has been working with WRAP and BBPA members to help reduce the environmental impact of both packaging and manufacturing waste.

Tens of thousands of tonnes of glass have been removed from the waste stream via lightweighting of bottles over the last few years by both large and small brewers across the sector. Whilst no new quantifiable initiatives were reported to the BBPA this year, packaging reduction remains a key focus for member companies.

Packaging carbon calculator

Carlsberg Group has started to implement a packaging carbon calculator across all Carlsberg Group countries. The tool provides the necessary environmental data to support effective decision-making in the introduction of new, and improved, product packaging.



#07 use of raw agricultural materials/

to continue to improve
the efficient use of raw
materials

The BBPA, along with other stakeholders, has been working on a resource mapping project to identify the environmental 'hot-spots' of twelve key product groups within the UK drinks' sector.

One significant part of this initiative has been to look at the use of raw materials and identify where these could be used more efficiently. The project, funded by WRAP, identified a number of areas where resource efficiency could be improved. This included product loss avoidance, packaging and water use. A report will be available to the wider industry and the general public in the New Year.

The BBPA has also been working with the National Farmers Union (NFU) to promote the raw materials in the beer supply chain. This resulted in the 'Grain to Glass' publication which focussed on much of the positive work being carried out to enhance the environment.

The brewing industry also continued to fund trials of new barley and hop varieties during the year.



#08 environmental management systems/

to ensure appropriate environmental management systems are in place, covering carbon, energy, water, effluent, waste minimisation and packaging to reduce the environmental impact of brewing and in support of brewers' environmental policies and operating permits

A survey of industry sites has shown a very high take-up of the most vigorous environmental management systems, demonstrating the close scrutiny that brewers pay to their environmental responsibilities. All of the leading brewers in the UK have at least one of their sites certified to ISO 14001, one of the most highly-regarded environmental frameworks available. Where this is not appropriate, the vast majority of medium-sized companies have an alternative environmental management system in place.

Data from the Environment Agency shows that most UK brewing sites have been awarded the highest score on their Operational Risk Appraisal (OPRA) – a measure that takes into account a range of factors that contribute towards effective environmental management.

OPRA rating (2011)

A	B	C/D
62.5%	25.0%	12.5%

#09 sustainable production/

to develop plans to ensure the sustainable future of brewing in the UK, by monitoring and managing potential supply-side risks

As the case studies throughout this report demonstrate, brewing companies are focussed on reducing their environmental impact and ensuring a sustainable future for beer production in the UK.

Throughout 2011 strong links have been developed and maintained with supply chain partners. This includes working with farmers through a partnership with the NFU and ongoing discussions with the malting industry about alternative, less carbon-intensive fertilizers.

Additional activity will be reported in future updates.

Tracking carbon emissions - The Carlsberg Environmental Community

During 2011 Carlsberg tracked the main sources of carbon emissions produced by the business. The company's carbon KPIs allowed it to track the impact of various measures implemented across Carlsberg UK during the year against carbon emissions. The company also established the carbon footprint of key beverages and from these results identified that a large proportion of the product carbon footprint is embedded within the resources bought from suppliers.

From this key finding, Carlsberg UK set about developing an initiative to engage with suppliers on product carbon emissions and wider environmental issues. This has resulted in Carlsberg Group backing a UK pilot programme for the Carlsberg Environmental Community. Through 2012 the company will continue to invite some of its biggest suppliers to join the community, and work in partnership on ways to reduce carbon in the supply chain.

Measuring how much carbon Carlsberg UK is emitting from brewing and distributing its beers has given the company the opportunity to look at the business in a different light, redefining its position in relation to carbon and the decisions the business makes in response to climate change. Over the year, this has resulted in a 22 per cent reduction in carbon emissions throughout the supply chain.



#10 accountability and transparency/

to produce an annual report that sets out progress against agreed plans and targets, and to enhance the quality and quantity of data available to monitor progress against all targets

This report is the first update to our landmark Brewing Green report; a publication the brewing sector is committed to each year. Members of the BBPA have been surveyed to enhance the data available at sector level so that it can be used to support our collective aims.

Whilst gaps remain, we are committed to developing and refining this data, and hope that our 2012 update report will allow us to be clearer on developing measureable pledges. Overall, the process of 'opening up our books' has been positive. We hope this helps people to understand what the industry is trying to do, and also to understand the challenges faced.

Wells and Youngs – the 'Green Board' approach

To demonstrate the importance of environmental issues to the company and beyond, Wells and Young's set up a 'Green Board' of Directors in 2011.

This cross-functional team looks at a broad range of issues and finds solutions to improve the environmental performance of the company. The first key target is to make the company 'zero waste to landfill' which it hopes to achieve during 2012.

The Green Board has also been instrumental in helping the company become self-sufficient in the production of nitrogen and aims to do the same for carbon. The commissioning of a new refrigeration unit will save between 20 and 25 per cent of the site's electricity.

Making environmental issues a key priority of the board is clearly reaping the rewards.

towards greener pubs

The pub sector is composed of a diverse mixture of managed houses (operated directly by companies), leased/tenanted pubs and freehouses which operate as standalone businesses controlled by a licensee.

The diffuse nature of a sector comprised largely of small businesses has presented significant challenges in developing a framework to help reduce the environmental impact of the sector. For example, many pubs are very old and/or listed buildings. Companies and individual licensees can therefore find it difficult and expensive to make extensive structural changes.

However, in other ways pubs lend themselves very well to sustainability. Around 80 per cent are small businesses and many source produce locally and operate largely within the local economy reducing food miles and distance travelled by staff.

The industry has been involved with initiatives to promote sustainability. This included the Government funded scheme 'Hospitable Climates' which promoted good practice and supported hospitality businesses to make low cost alterations to their buildings to save energy, therefore saving money and reducing carbon emissions. Although the scheme was discontinued, progress has continued with both companies and individual pubs taking forward its principles and working to reduce their environmental impact.

The pub sector produces a significant amount of food and packaging waste, particularly glass. With the soaring cost of food prices and of sending waste to landfill, there is both a financial and environmental benefit to reducing waste and many companies have made significant progress in this area.

Following on from their work with producers on waste reduction, WRAP has started a programme of work with the hospitality and food services sector of which the pub industry is a key part.

A recent report by WRAP, Composition of Waste Disposed of by the UK Hospitality Industry (July 2011), highlights that the pub sector, despite producing the most waste of any one category in the sector, recycles 47 per cent of waste. This is in line with the average across hospitality and significantly ahead of the restaurant sector.

WRAP is developing a voluntary responsibility deal on waste reduction in the hospitality sector starting in Spring 2012 which the BBPA and member companies have been involved in shaping.

Pub companies have made significant progress in tackling their carbon emissions. Some companies have worked with the Carbon Trust to develop carbon management plans. Punch Taverns, Marston's and Mitchells & Butlers have all achieved recognition under the Carbon Trust Standard for real carbon reduction and commitment to ongoing reductions.

Whilst managed pub companies are more easily able to reduce carbon emissions, many tenanted and leased companies have also sought to enable tenants to cut carbon usage both through guidance and support on how to make pubs more energy efficient and through work on implementing energy saving technology and equipment in pubs.



Marston's pubs - voltage optimisation to cut CO₂ emissions

Marston's is the leading independent brewing and pub retailing business in the UK. With around 500 managed pubs and 1,650 tenanted pubs, the estate consumes a significant amount of energy. The business has a growing focus on energy efficiency in order to meet carbon emissions targets and drive down the operational costs associated with electricity and energy prices. To meet these challenges Marston's has taken a proactive approach.

Marston's have worked with the company powerPerfactor whose voltage optimisation technology can help to cut companies energy use by up to 20 per cent: Marston's first trialled two powerPerfactor units in 2010. After exceeding the predicted savings VPO has been rapidly installed at 20 suitable sites across the managed pub estate. The programme is saving 353 tonnes of CO₂ annually and has helped the business earn the Carbon Trust Standard.

The programme was delivered without affecting the day-to-day operation of the business.

Annual Savings (based on 25 sites)

CO ₂ kg:	Av % saving:	NOx kg:
352,940	9.3	735



Mitchells & Butlers

Mitchells & Butlers is the largest managed house operator in the UK running 1,600 restaurants and pubs in the UK. The business has made great progress in reducing waste and diverting waste from landfill. Key figures and targets:

- 81,000 tonnes of waste diverted from landfill in 2011 compared 2010's result of 38,000 tonnes of waste being recycled
- 85% of waste diverted from landfill by the end of September 2011 across the whole estate
- Target of zero waste to landfill by the end of 2013

Six thousand tonnes of food waste have been diverted from landfill since 2009. This is the carbon saving equivalent of taking 12,500 family cars off the road. The food waste is recycled using anaerobic digestion and bio-gas is produced. This gas can be converted into electricity and the solid waste, which is a by-product of the process, can be used as fertilizer. The food collection service is currently in operation in around 75% of Mitchells & Butlers' locations with a full roll out planned for later this year.

Around 2,500 tonnes of used cooking oil was also collected last year from pubs across the UK for recycling into bio-diesel saving almost 5,000 tonnes of carbon. This is equivalent to taking 2,000 family cars off the road every month.

Mitchells & Butlers is keen to share best practice across the industry in recycling programmes and have already worked with industry groups including WRAP to share knowledge. Our waste management team is engaged with Government and other stakeholders on reducing the impact of waste, opportunities for the food and drink industry and building on the progress already made.

BBPA Members – 2012

3M Healthcare
Admiral Taverns Limited
Adnams PLC
Alectia Ltd
Anheuser-Busch InBev
Arkell's Brewery Ltd
Barracuda Group
Black Sheep Brewery plc
Brakspear Pub Company
Budweiser Budvar UK
C and C Group plc
Camerons Brewing Ltd
Carlsberg UK
Charles Wells Ltd
Close Brewery Rentals
Daleside Brewery
Daniel Batham & Son Ltd
Daniel Thwaites plc
Diageo plc
Elgood & Sons Ltd
Enterprise Inns plc
Everards Brewery Ltd
Felinfoel Brewery Co Ltd
Frederic Robinson Ltd
Fuller Smith & Turner plc
George Bateman & Son Ltd
Gray & Sons (Chelmsford) Ltd
Hall & Woodhouse Ltd
Harvey & Son (Lewes) Ltd
Heavitree Brewery plc
Heineken UK
Heron & Brearley Ltd
Holden's Brewery Ltd
Hook Norton Brewery Co Ltd
Hydes Brewery Ltd
iNTERTAIN Ltd
J.C. & R.H. Palmer Ltd
J.W. Lees & Co

John Gaunt and Partners
Joseph Holt Ltd
Kurnia Licensing Consultants
Liberation Group
Maclay Group plc
Marston's PLC
McMullen & Sons Ltd
Miller Brands UK
Mitchells & Butlers
Mitchells of Lancaster Ltd
Molson-Coors Ltd
Popleston Allen
powerPerfector
Punch Taverns
R W Randall
Robert Cain & Company Ltd
Route Organisation
S.A. Brain & Company Ltd
Sharp's Brewery
Shepherd Neame Ltd
St Austell Brewery Co. Ltd
T & R Theakston
Thomas Hardy Brewing
& Packaging Ltd
Timothy Taylor & Co Ltd
Titanic Brewery
Wadworth & Co Ltd
Weston Castle
Young & Co's Brewery plc

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