The Federation House Commitment Progress Report 2013

FHC2020 HELPING THE FOOD & DRINK SECTOR IMPROVE WATER EFFICIENCY

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Front cover photography: Water drop

Executive summary

For the past five years, the Federation House Commitment (FHC), managed by WRAP in partnership with the Food and Drink Federation (FDF) and Dairy UK, and supported by the Environment Agency, has been helping signatories across the food and drink manufacturing sector turn their commitments into real water savings.

This report summarises the water savings made by FHC signatories in 2012. As well as demonstrating the collective progress made by signatories, the report highlights measures taken by individual companies to reduce water use at their UK manufacturing sites.

Between 2007 and 2012 signatories collectively made a **16.1%** reduction in their water use (excluding that in product). This reduction is equivalent to **7.4 million m^3** water or 2,965 Olympic-size swimming pools.

Water intensity has been reduced by **20.9%** compared to the 2007 baseline. This equates to a water reduction of 0.52 m^3/tonne of product. This is a notable achievement given that production for these sites increased by 6.1% over the same reporting period.

Between 2011 and 2012 signatories reported a 1.5 million m^3 reduction in water use. This represents a saving of around **£2.2 million** in the purchase of water alone.

Between January 2012 and June 2013 an additional nine companies signed up, bringing the total number of signatories to 71 across 294[1] active sites.

Together, these signatories represent an estimated 23-25% of UK food and drink manufacturing (based on water use). Collectively the signatories are in a position to make a significant impact on the amount of water used by the entire sector.

At the end of 2012, Dairy UK and WRAP signed an agreement that saw Dairy UK become an official partner to the FHC. This partnership will promote greater awareness of water efficiency within the dairy sector and facilitate wider participation from Dairy UK members.

The FHC is working with Zero Waste Scotland's Resource Efficient Scotland programme to develop a Scotland-specific focus for activity. Targeted support will be offered to Scottish sites and this will highlight the associated energy and cost savings that can also be realised through reducing both water use and effluents.

The FHC works closely with the Environment Agency to encourage participation, and to ensure a coordinated approach is taken at sites regulated under the Environmental Permitting Regulations.

[1] Any difference in signatory site numbers between this report and the previous report is attributable to new sites, to sites that have closed during the course of the FHC programme or have been acquired by non-signatory companies and have therefore left the scheme.

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1.0 Introduction

The Federation House Commitment (FHC) was developed to help companies in the food and drink sector reduce water use across their manufacturing sites. This followed the Food Industry Sustainability Strategy (FISS) recommendation; that the food industry achieve a water reduction target of 20% by 2020 against a 2007 baseline.

The FHC voluntary agreement is managed by WRAP, the FDF, Dairy UK and the Environment Agency, and administered by Hyder Consulting. All companies that sign up to the FHC agree to make a contribution to the food and drink industry water reduction target. Since its launch in 2008, the FHC has helped signatories turn their commitments into tangible water savings, reaping environmental and financial benefits in the process.

The support provided to signatories includes:

- Technical implementation support, including on-site support;
- Peer working group meetings;
- Opportunities to promote their success to the rest of the industry and the wider public through the FHC Progress Report and standalone case studies; and
- A dedicated signatory area on the FHC website.

An FHC Conference was held, for the first time, in March 2013 and provided an opportunity for signatories to meet WRAP and FHC partners, to review progress to the commitment, identify potential priorities and help shape future delivery of the FHC. Support will continue to be focussed on implementation and knowledge-sharing, and a new suite of online materials[2] is already available to signatories, while different methods of peer working group delivery will be explored to ensure increased access by signatories.

Further details of the support available can be found on the FHC website.

[2] Please note online resources can only be accessed when you are signed in to the members' pages of the FHC website.

2.0 Progress to date – water reduction

2.1 Data overview

FHC signatories are required to provide data annually on water use and production. To maintain individual company data confidentiality, water usage data is aggregated and reported on a collective basis[3].

It is important to note that a direct comparison between this report and data in any previous report cannot be made. This is because at the time of each analysis, the dataset will vary depending on which sites report and the sub-sector they represent. To determine the year on year trend since 2007, and to give a like for like comparison, only FHC sites reporting data for 2007 (the baseline year), 2011 and 2012 have been considered in this analysis. This represents 250 sites.

The FHC measures reduction in water use against a 2007 baseline. This is expressed as two key performance indicators (KPIs)[4]:

- absolute KPI: water use (excluding that in product), discussed in this section and shown in bold in Table 1; and
- relative KPI or water intensity: water use (excluding that in product) per tonne of product.

The FHC is focused on reducing water use and reducing the intensity of water use. For completeness and consistency with previous FHC progress reports, data relating to total water use (which includes water in product) is shown on page 17.

The methodology used to analyse the data is summarised on page 16.

2.2 2012 Water reduction progress

- Between 2007 and 2012 FHC signatories collectively made a **16.1%** absolute reduction in their water use (excluding that in product).
- This represents a saving equivalent to **7.4 million m^3** or enough water to fill around 2,965 Olympic-size swimming pools.
- During this period production across the sites represented increased by 6.1%.

Water use data for 2007 (baseline), 2011 and 2012 are summarised in Table 1 and Table 2. The relationship between water use and production is shown in Figure 1.

Table 1: Annual water use compared to baseline year for 250 sites with comparable data

Water use (million m^3)			
Year	**Water use (excluding that in product)**	Water in product	Total water use
2007	**46.1**	5.5	51.6
2011	**40.2**	6.1	46.3
2012	**38.7**	6.0	44.7

[3] Individual company data is held by Hyder Consulting, under contract to WRAP, in confidence and in accordance with UK data protection legislation.
[4] Other KPIs, relating to total water use, are discussed in the Supporting information section of this report.

- Between 2011 and 2012 signatories reported a 1.5 million m^3 reduction in water use.
- This represents a savings of around **£2.2 million** in the purchase of water alone[5].

Table 2: Percentage water use reduction relative to baseline based on 250 sites with comparable data

Water use (excluding that in product)	
Year	% reduction relative to baseline
2007	-
2011	12.8%
2012	16.1%

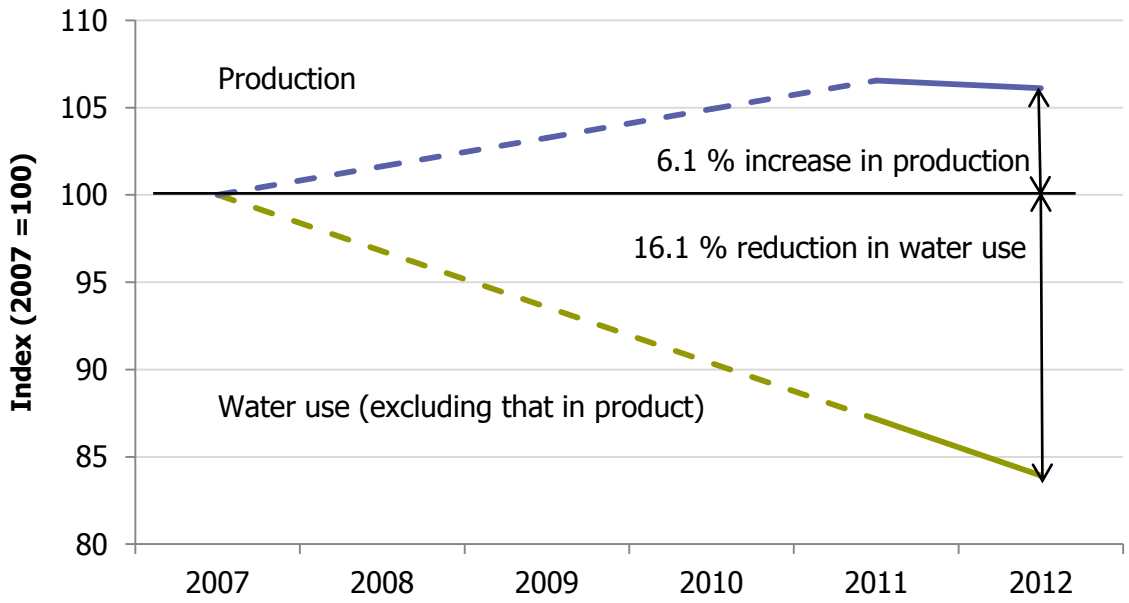
In addition to the significant water savings that have been achieved, it is likely that further environmental benefits will have been realised, including savings in energy consumption, raw materials and associated carbon impacts.

A number of sites have already made significant savings, and some of these are illustrated in the Case studies section.

2.3 Comparing water use and production

The trend in water use and production between 2007 and 2012 for the 250 sites with comparable data is shown in Figure 1. This shows that there is a continuing downward trend in water use of 16.1% between 2007 and 2012 (Table 2). Concurrently, production saw an increase of 6.1% (18 to 20 million tonnes); although there was a 0.4% reduction in production figures over the last 12 months.

Figure 1: Water use and production trends between 2007 and 2012[6].



[5] Assuming that all water savings are from the public water supply, and an average cost of £1.49/m^3 applies, based on the average standard user tariff for 2013 from main water companies in England and Wales.
[6] In Figure 1 data for 2008, 2009 and 2010 are interpolated and shown as a dashed line.

2.4 FHC water reduction trend

Reporting absolute reduction in water use does not take into account any changes in production. Water intensity (the ratio of water use to product) provides a complementary method of assessing the food and drink sector's performance and provides an important check that any changes in absolute water use are not solely the result of changes in production volumes. The FHC water reduction trend is therefore best shown using water intensity and is expressed as water use (excluding that in product) per tonne of product.

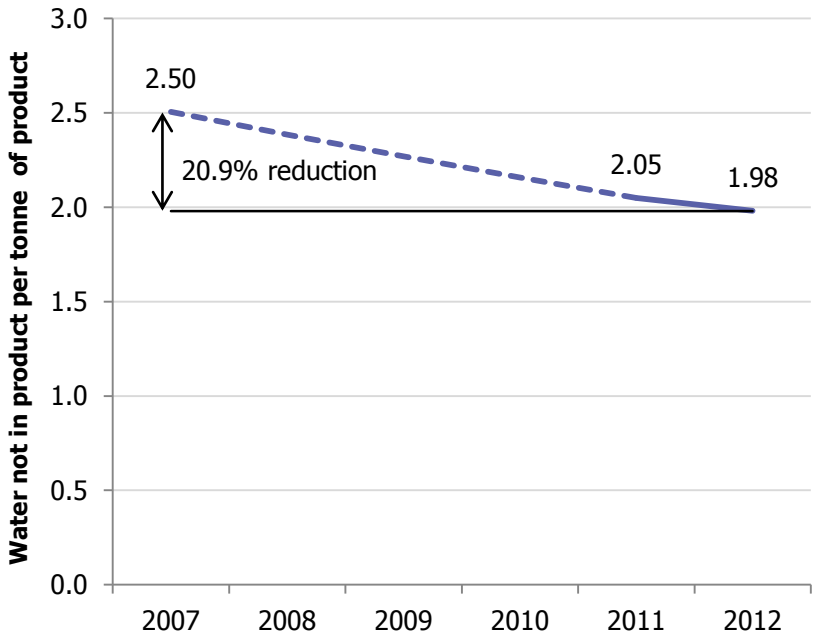
FHC signatories continue to make good progress in reducing water. A 20.9% reduction in water intensity was achieved between 2007 and 2012. This is summarised in Table 3 and shown in graphical format in Figure 2.

Table 3: Water intensity trend for 250 sites with comparable data

Water use (excluding that in product)		
Year	m^3 per tonne of product	% reduction relative to baseline
2007	2.50	-
2011	2.05	18.2%
2012	1.98	20.9%

Figure 2 shows the water intensity for the 250 sites with comparable data. It shows that the reduction in water intensity appears to be slowing down, an observation also highlighted in the last progress report. This is to be expected, given that many signatories have tackled the "easier wins" and are now looking at more capital-intensive investments to ensure further reductions in water.

Figure 2: FHC water intensity reduction trend[7]



Over the last two years the technical support site visits have provided valuable insights into current practices for sites where production has decreased or the production profile has substantially changed. Where this occurs, it may result in gaps in production which can lead

[7] In Figure 2 data for 2008, 2009 and 2010 are interpolated and shown as a dashed line.

to a requirement for additional cleaning and potentially an increase in water use compared to previous years.

Consequently, despite reducing water use in other areas, some sites are seeing a plateau in water use per tonne. The FHC will continue to work with signatories to find practical solutions to this challenge.

2.5 Sub-sector coverage

A wide variety of manufacturing operations, across a range of sub-sectors within the food and drink sector, are represented within the FHC.

Table 4 and Figure 3 provide a sub-sector breakdown of the signatories by water use. Of the 250 sites, with comparable data, around half (48%) of water use is attributed to three sub-sectors: dairy (20%), meat processing (18%) and soft drinks (10%).

Figure 3: Food and drink sub-sectors represented within the FHC based on water use (excluding that in product)

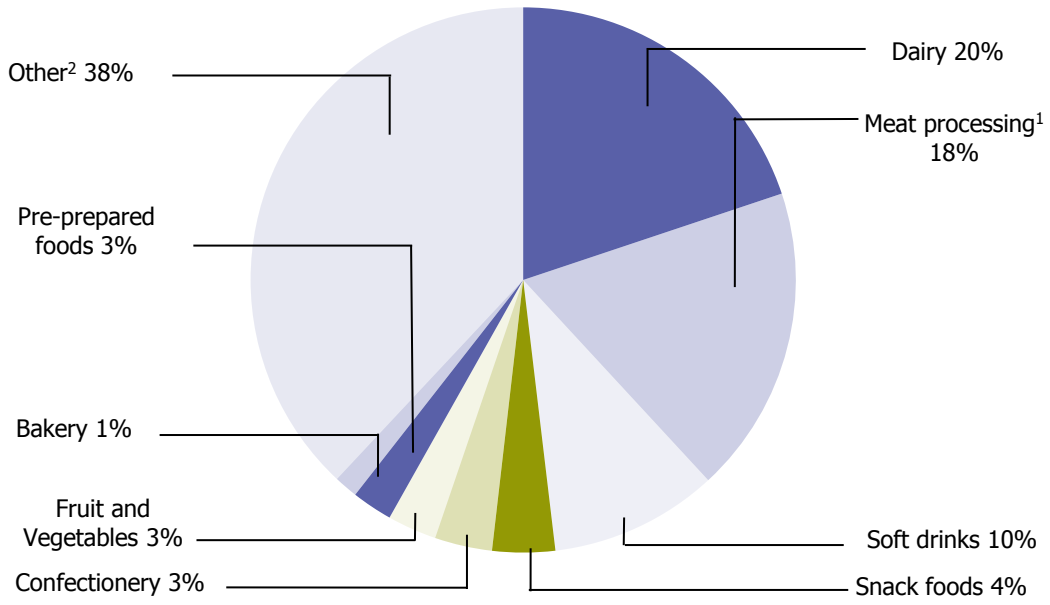


Table 4: Food and drink sub-sectors represented within the FHC (in descending order of water use)

UK breakdown 2012	Water use (excluding that in product) (million m^3)
Dairy	7.7
Meat processing[1]	7.1
Soft drinks	3.9
Snack foods	1.4
Confectionery	1.3
Fruit and Vegetables	1.1
Pre-prepared foods	0.9
Bakery	0.5
Other[2]	14.7
Total	**38.7**

Figure 3 and Table 4

[1]Meat processing includes red meat and poultry
[2]'Other' includes:

- *fish processing;*
- *alcoholic beverages;*
- *other non-alcoholic beverages;*
- *pet food and animal feed;*
- *milling;*
- *desserts;*
- *sauces and condiments; and*
- *other*

3.0 Signatories and organisational structure

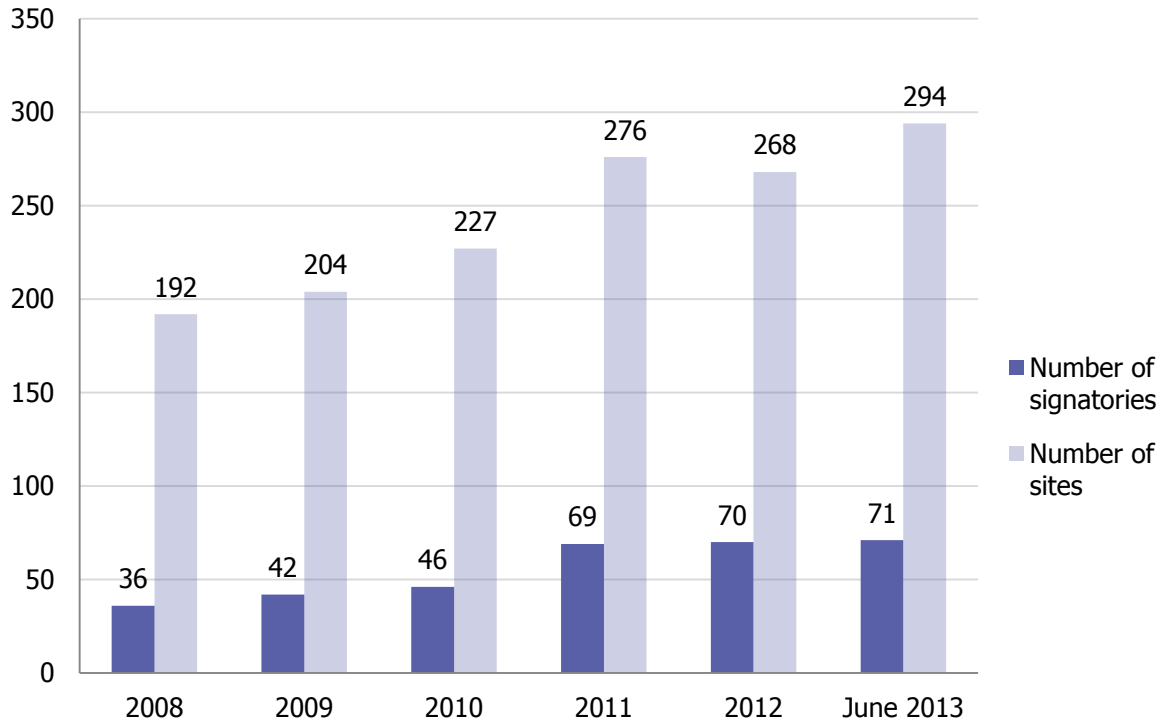
3.1 Signatories

The number of FHC sites continues to grow – as shown in Figure 4. Between January 2012 and December 2012, five further companies signed up to the FHC, and an additional four companies signed in 2013, bringing the total number of signatories to 71 across 294 sites. A full list of current signatories is provided on in Table 8.

Although there appears to be little increase in the overall number of signatories since 2011 this is due to a number of mergers, acquisitions, and signatories leaving the scheme. Furthermore, due to company restructuring and consolidation of production, some sites closed during 2012.

The FHC signatories represent an estimated 23-25% of the UK food and drink manufacturing sector (based on total water use in 2007). This highlights that the FHC's sphere of influence across the food and drink manufacturing sector continues to increase, not just in size but also in sub-sector coverage. The methodology used to calculate sector coverage is summarised on page 18.

Figure 4: Growth of FHC – numbers of signatories and sites



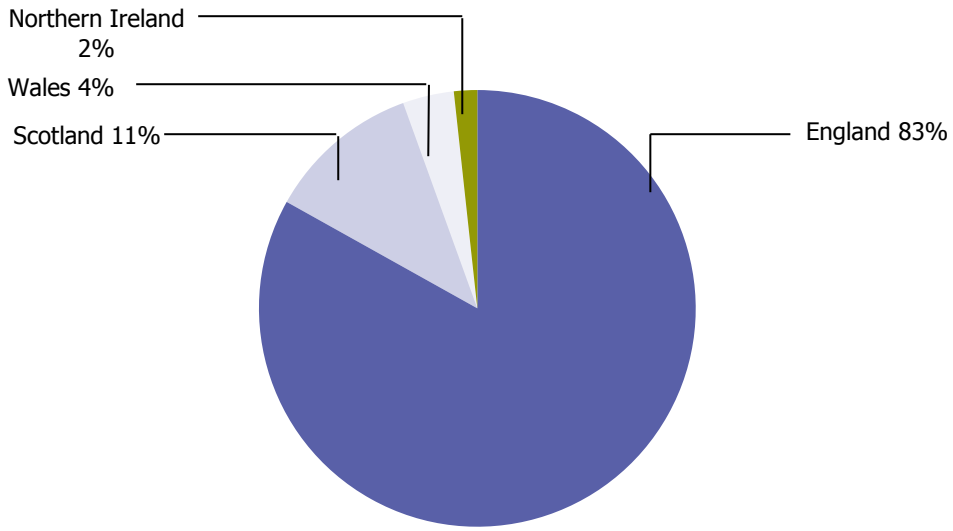
3.2 Organisational structure

It is part of FHC delivery strategy to develop partnerships with key sectors to work to maximise the water use reduction, and at the end of 2012, Dairy UK and WRAP signed an agreement that saw Dairy UK become an official partner to the FHC. This has already led to the recruitment of a number of new companies, bringing with them twelve additional dairy sites and increased FHC coverage of the sector. Dairy UK members now signed up to the FHC are: Arla Foods, BV Dairy, Dairy Crest, First Milk, Müller Dairy and Müller Wiseman Dairies. This partnership will promote greater awareness of water efficiency within the dairy sector and facilitate wider participation from Dairy UK members.

The FHC is now working with Zero Waste Scotland's Resource Efficient Scotland programme to develop a specific focus for activity for companies and sites based in Scotland. Targeted support will be offered to Scottish sites and this will highlight the associated energy and cost savings that can also be realised through reducing both water use and effluents. In particular, companies within the water use hotspot sectors of dairy, drinks, fish and meat processing will be targeted for support.

FHC signatories operate across the UK, although FHC activity is currently focused on England and Scotland as requested by their respective national governments. Figure 5 shows the distribution of current FHC sites across the UK.

Figure 5: Distribution of all FHC signatory sites (based on number of sites)



4.0 Case studies

As part of the FHC technical support provision, signatories have the opportunity to share the water management initiatives they have implemented, and the results they have achieved, through development of a case study. Case studies promote a signatory's water sustainability practices industry wide, so other businesses can see how the FHC can benefit them, and which water management activities could work in their supply chain.

The case studies included in this report show how new and existing signatories have used FHC expertise, to recognise water reduction opportunities and support their implementation.

- poultry processor **Moy Park** has already achieved significant reduction in water use across their sites through implementation of a range of water saving measures;
- **Brakes** has improved monitoring of their water use, identifying and targeting the high water use areas including cleaning to achieve a significant reduction in water use;
- dairy processor **Müller Wiseman Dairies** describes the benefits of treating waste water for reuse;
- **Natures Way Foods** summarise their experience of the FHC and how they have used the technical support to support implementation of the recommended opportunities and
- **Orchard House Foods** discusses how technical support has helped them identify opportunities to reduce water, and then support the business through the implementation of improvements to operational practices.

Moy Park reduce their water use by 17%

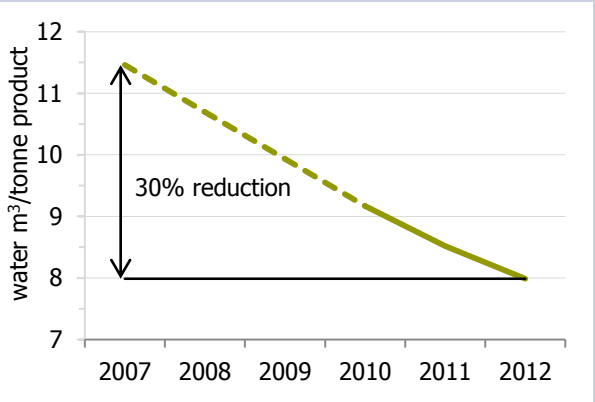
Moy Park produces 1500 products for categories including fresh poultry, coated poultry, ready to eat, light bites and sides. They have seven FHC UK manufacturing sites and have been signatories since October 2010.

Overall, Moy Park's FHC sites have realised an impressive 17% reduction in absolute water use whilst recording a 19% increase in total production since 2007.

Water intensity (water use per tonne of product) has also shown a continued downward trend: overall the seven sites have achieved a 30% reduction in water use per tonne of product since 2007.

To date, four sites have received on-site technical support from the FHC; two in 2010 and two in 2012.

FHC sites - water intensity trend



A variety of quick wins and innovative solutions were identified during these visits including:

- the recovery of reverse osmosis concentrate[8] to the hot water tanks for reuse;
- the recovery of softener regeneration liquors for low grade washing;
- the installation of foam and clean machines[9], optimising the sites' cleaning processes;

[8] The fraction of water that is retained by the membrane; where suitable, this can be recovered for reuse
[9] Chemical cleaning stations that provide point source supply of foam cleaning agents, and hot water for rinsing, often delivered through a high pressure low flow lance.

- the elimination of cooling water used on a once through basis; and
- the review of spray heads and flow through taps on hygiene stations to reduce wastage.

Brakes Group reduce their water use by over 22% since 2010

Brakes provide both food and non-food products to the food service industry, ensuring their foods meet the highest technical and food safety standards.

Since joining the FHC in December 2009, each of their food manufacturing sites has received an FHC technical site visit.

Collectively Brakes FHC sites have realised an impressive 22.4% reduction in absolute water use whilst recording an increase in total production since 2010.

Supported by the findings of the visits, recent successes have been demonstrated at their Flint and Grimsby sites through the implementation of a range of water saving initiatives and process alterations.

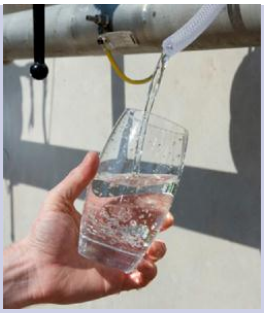
M&J Seafood, Grimsby has reduced water use by 45% whilst increasing production by 12.5% since 2010. On site initiatives include:

- installation of sub-meters to key areas of the site allowing accurate monitoring and assessment of the effectiveness of changes made to the cleaning process;
- review of wash down routines, reducing the number of hoses and increasing the use of squeegees;
- review water use in equipment such as pressure washers and spray bars, to reduce use without compromising effectiveness; and
- redesign of the 'Box Wash' system has reduced its water use by 9 litres per minute, saving 471 m^3 per year.

Creative Foods, Flint has reduced water use by 5% in 12 months, whilst increasing production by 7.5%. On site initiatives include:

- relocating the site's CIP (Cleaning in Place) machine, which due to a reduction in pipework length, takes less cleaning. This has resulted in water savings of 780 m^3 per year;
- investigating the cleaning process of the two pasta cookers; water use was reduced by 1,300 litres per clean, saving 946 m^3 per year; and
- reviewing the pasta cooling process; water is now delivered as a mist for cooling instead of a spray. This has resulted in water savings of 2,054 m^3 per year. In addition, no waste water is produced.

Müller Wiseman – recycling waste water



Through the recently agreed Memorandum of Understanding with the FHC and Dairy UK, Müller Wiseman Dairies are one of the FHC's newest signatories. Recognised as one of the most efficient dairy companies in the UK[10], the company is making a step change in water efficiency and sustainability by recycling waste water. As part of its sustainability strategy it has a stretch target to reduce water use by 25% by 2015 against a 2010 baseline.

Reverse osmosis (RO) technology was first introduced at Müller Wiseman's Bridgwater plant in early 2011, and has since expanded to provide over 50% of the water required by the dairy, which has an annual production of around 0.5 million m^3 milk.

Recycled water is returned to the mains water tank to be used across the dairy for everything from cleaning the filling lines to pasteurising the milk, and significantly reduces the requirement to draw water from the local water supplies.

Müller Wiseman Dairies processes and delivers almost a third of the fresh milk consumed in Britain every day and therefore feels it has a duty to maximise water efficiency and minimise its environmental impact. This innovative project is allowing Müller Wiseman Dairies to significantly reduce its demands on the local water supply and the associated environmental impacts, including reducing its carbon footprint.

Natures Way Foods reduce their water use by over 20%

Natures Way Foods are leaders in fresh produce processing, supplying bagged salads, prepared fruit and salad bowls and trays. They employ around 750 people at three factories in the Chichester area of West Sussex. As significant water users they have always recognised the importance of managing their water effectively.

Natures Way Foods became a FHC signatory in September 2009 and since then they have already achieved some significant reductions. Using 2007 as their baseline, the company has reduced their total water use by just over 20% and significantly reduced their trade effluent, with total water-related cost savings amounting to over £65,000 per annum.

Continued supported from the FHC has resulted in the identification of further water management and water efficiency opportunities such as:

- improving water balance accuracy through better metering and improvements to the company's telemetry system;
- addressing 'quick wins' to reduce water use within the process (including the repair of pump seals, improved control in 'auto-fill' systems to prevent overfilling of wash baths, and reducing pressure in distribution systems to drop hoses); and
- understanding the true cost of water – the cost of water is not just the supply cost (53 p/m^3) but also the 'added value' e.g. softening costs or energy costs from heating or chilling.

The Group is driving progress on their sites, targeting a further 10% reduction through their internal 'continual improvement' processes.

[10] Dairy Roadmap

Orchard House Foods modify operations and save water

Orchard House Foods are the UK's market leader[11] in ready-to-eat fresh fruit products, fresh fruit patisserie and drinks for leading UK retailers. The company employs around 900 people in five purpose-built factories located in Corby, Northamptonshire.

Orchard House Foods became an FHC signatory in late 2011. Soon afterwards they received free technical support. Since the initial site visit several actions have already been implemented, including:

- installing water meters to enable water consumption to be monitored and tracked;
- benchmarking water use and setting targets; and
- the alteration of operational practices to reduce water consumption, including:
  - only filling and using the fruit washing water baths as required – this action alone has saved 10 – 15 m^3 per day;
  - reducing the number of flushes of fresh water used after cleaning – this is down from ten flushes to only the number required;
  - using hot water hoses for cleaning in some locations rather than cold – this uses a lot less water, but slightly more energy; and
  - overhauling pasteuriser pumps so that aborted runs, which require wash-down and start-up, are now rare.

Although the majority of these actions were only implemented in May/June 2012, there was a resultant drop in water consumption for 2012 of around 7% compared to 2011. Financial savings associated with this reduction in water use are expected to be over £9,000 per year. In early 2013, further water savings opportunities were identified, which could potentially reduce water use by a further 5-10%.

[11] http://www.ohf.co.uk/about.html We remain the UK's market leader in ready-to-eat fresh fruit products, fresh fruit patisserie and drinks for leading UK retailers. Our commitment to innovation and NPD is renowned, as is our investment in our people.

Appendix 1: Glossary and abbreviations

Term	As defined in this report
Dairy UK	Dairy UK is the trade association for the Dairy industry, and represents the interests of the entire dairy supply chain including farmers, producer co-operatives, manufacturers of dairy products, and processors and distributors of liquid milk throughout the United Kingdom. Dairy UK's members represent about 85% of UK milk production.
EA	The Environment Agency (EA) is an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs. Its principal aims are to protect and improve the environment, and to promote sustainable development.
FDF	The Food and Drink Federation (FDF) is the voice of the UK food and drink industry, the largest manufacturing sector in the country.
FHC	Federation House Commitment
FISS	The Food Industry Sustainability Strategy (FISS) was drawn up in 2006 with the aid of stakeholders and sets out how all those involved in the UK food and drink industry beyond the farm gate (manufacturers, wholesalers, retailers and food service providers) can, through widespread adoption of best practice, help achieve sustainable development. FISS estimated that the food and drink industry in England and Wales uses 252 million m^3 water per annum. Based on these findings, the FISS Water Champions Group recommended a food and drink industry water reduction target of 20% by the year 2020, against a 2007 baseline, which the Strategy considered to be achievable through the implementation of best practice in water use across the industry.
Food and drink industry	For the purpose of this report the food and drink industry is defined as retail, hospitality and food service, wholesale and manufacturing.
Food and drink industry water reduction target	The FISS estimated that the food and drink industry in England and Wales uses 252 million m^3 water per annum. Based on these findings, the FISS Water Champions Group recommended a food and drink industry water reduction target of 20% by the year 2020, against a 2007 baseline, which the Strategy considered to be achievable through the implementation of best practice in water use across the industry.
KPI	Key performance indicator.
Production	Finished saleable product, excluding reject product (expressed in tonnes).

Term	As defined in this report
Resource Efficient Scotland	Resource Efficient Scotland is a Scottish Government funded programme, delivered by Zero Waste Scotland, which brings together specialist support for all businesses and organisations in the private, public and third sectors. It provides a one-stop-shop for free advice, access to funding, training and resources to help organisations use energy, water and raw materials more efficiently to help them cut costs, meet environmental commitments and stimulate growth.
Total water use	This is the sum of public water supply and directly abstracted water. It includes water used as a raw material in the preparation of the product (ingredient water), employee water use (washrooms), and non-consumptive water use (such as cooling water).
WRAP	WRAP's vision is a world without waste, where resources are used sustainably. WRAP work in partnership to help businesses, individuals and communities improve resource efficiency. Established as a not-for-profit company in 2000, WRAP is backed by government funding from England, Northern Ireland, Scotland, and Wales.
Water use (excluding that in product)	Water use (excluding that in product) is defined as any water brought on site (mains or direct abstraction) that is used as a raw material in the product subtracted from the total water use. It is often referred to as ingredient water and includes water used in reject product. It is not the same as the water content of a product, since the latter excludes losses from any baking process but includes any water already in the ingredients brought onto site (e.g. syrups, sauces and fillings).
Zero Waste Scotland	A programme delivered by WRAP for the Scottish Government. Incorporates action on energy, waste and materials efficiency under the Resource Efficient Scotland brand.

Appendix 2: Supporting information

The FHC measures reduction in water use against a 2007 baseline and reports on annual water use (excluding that in product) to show progress towards the industry's targets. Production levels are taken into consideration to accurately reflect improved water efficiency with increases or decreases in production.

A. Data analysis methodology

Water use data was received from 266 sites (of a total of 71 signatories and 294 active sites), representing a response rate of 90%. Some of this data was excluded from analysis because either the data was incomplete or required further investigation (which could not be completed in time for inclusion). Data summarised in this report represents 85% of sites and 80% of signatories (i.e. 250 sites from 57 signatories).

As the number of FHC signatories and sites change year on year, the baseline total water use will change. As a result, reduction in total water use cannot be directly compared with previous reports.

Comparison between years has been calculated as percentage reduction relative to the 2007 baseline.

The following elements may affect the dataset under review:

- addition of signatories or sites that were recruited in the current reporting year;
- continual changing mix of sub-sectors represented;
- sites where the production profile has changed (i.e. change in type of products manufactured);
- sites that have closed during the current reporting year and will no longer report; and
- sites that failed to submit complete data in time for inclusion.

B. How is the water reduction measured?

A detailed data methodology for FHC data collection, analysis and reporting is used to deliver consistent reporting; Hyder works with WRAP to review this methodology to ensure that it provides a true representation of the progress of FHC signatories year on year. Signatories provide data to WRAP between January and March either through the FHC portal or directly to FHC administration team. Once received, the data is reviewed for accuracy, knowledge of the site and reporting from previous years. The FHC administration team discuss any discrepancies with the site to clarify and ensure accurate reporting.

C. Water use (excluding that in product)

Signatories report two water-use metrics:

- annual **total water use**, which includes all water used at a manufacturing site including water in product (WIP); and
- annual **water in product** (WIP).

These metrics are used to calculate annual **water use (excluding that in product)**. By reporting water use (excluding that in product), the FHC is reporting the amount of water that can be reduced by implementing best practice on site, it is not commenting on potential product changes.

Figure 6: Water use (excluding that in product) calculation

water use (excluding that in product) = Total water use – WIP

WIP is the amount of water that is used as a raw material in product. It is also sometimes referred to as 'ingredient water,' and is determined by the water requirements of the product and the manufacturing process.

Because the FHC's main focus is on annual water use (excluding that in product), the main body of the report relates to this metric[12]. However, there are other KPIs that relate to total water use[13] and for completeness and consistency with previous FHC progress reports, these are summarised in Section D.

D. 2012 Water reduction progress: total water use

Over the past year FHC signatories have continued to reduce water use on site. Based on 250 sites with comparable data for 2007, 2011 and 2012, total water use by FHC signatories has reduced by 1.4 million m^3 over the last year and 6.9 million m^3 (13.4 %) between 2007 and 2012 (see Table 5).

Table 5: Total water use compared to baseline year for 250 sites with comparable data

Total water use		
Year	Total water use (million m^3)	% reduction relative to baseline
2007	51.6	-
2011	46.3	10.2%
2012	44.7	13.4%

As mentioned in the Progress to date section of the report, water intensity (ie the ratio of water use to product) provides a complementary method of assessing signatory performance. Water intensity is shown in Table 6; a 18.4% reduction in water intensity was achieved between 2007 and 2012.

Table 6: Water intensity compared to baseline year for 250 sites with comparable data

Total water use		
Year	m^3 per tonne of product	% reduction relative to baseline
2007	2.80	-
2011	2.36	15.7%
2012	2.29	18.4%

[12] Expressed as either an absolute KPI (water use excluding that in product) or relative KPI (water use excluding that in product per tonne of product).
[13] Expressed either as an absolute KPI (total water use) or relative KPI (total water use per tonne of product).

E. FHC sector coverage

To assess the coverage attributed to FHC sites within UK food and drink manufacturing (termed FHC sector coverage), a comparison is made between FHC signatory water use and UK water use, based on the FISS figure (Figure 7). Based on this data, current FHC sector coverage has been calculated to be 23% of UK food and drink manufacturing (Table 7)[14].

Figure 7: FHC sector coverage calculation

$$\text{FHC sector coverage} = \frac{\text{FHC total water use 2007}^{14}}{\text{UK food and drink manufacturing total water use 2007}}$$

In 2012, WRAP commissioned a separate study to calculate the water use for the food and drink industry in 2007 (manufacturing, retail, wholesale and hospitality and food service) and estimated the total water use in 2007 for UK food and drink manufacturing to be 231 million m^3. Based on this data, current FHC sector coverage has been calculated to be 25% of UK manufacturing (Table 7).

Table 7: Sector coverage (based on total water use in 2007)

Total water use: UK food and drink manufacturing 2007		
Data source	Total water use (million m^3)	% sector coverage
FISS	252	23%
Water use study (2013)	231	25%

[14] A number of FHC sites have closed since 2007. In cases where the production from these sites has been transferred to other FHC sites, the 2007 water use from these subsequently closed sites is included in the sector coverage evaluation. Note: in most cases production is transferred to a number of sites and as such it is not possible to apportion water use to these sites for 2007. As such only data from 'active' FHC sites is used to calculate the other KPIs reported by the FHC 2012.

Appendix 3: FHC signatories

Table 8: FHC signatories (companies in bold were recruited between January 2012 and 1 June 2013)

FHC signatories			
2 Sisters Food Group	Cott Beverages	Mondelez	Premier Foods
Anglo Beef Processors	Cranswick	Moray Seafoods	Produce World
Accolade Wines	Dairy Crest	Moy Park	R&R Ice Cream
Adnams	**First Milk**	Müller Dairy UK	Refresco (UK)
A G Barr	Framptons	**Müller Wiseman Dairies**	Rowse Honey
Apetito	Freshtime	Natures Way Foods	Thorntons
Arla Foods	G's Fresh	Nestlé UK	Tulip
Bernard Matthews	General Mills	**New England Seafood**	Unilever UK
Bettys & Taylors of Harrogate	Greene King	Newly Weds Foods	United Biscuits
Birds Eye	Greenvale AP	Noble Foods	Vitacress
Brakes	GSK Consumer Healthcare	Orchard House Foods	**Walkers and Sons**
Branston	Haribo	Oscar Mayer	Warburtons
British Bakels	HJ Heinz Frozen and Chilled Foods	**OSI Food Solutions**	Weetabix
British Sugar	HJ Heinz Manufacturing UK	Paradise Foods	Wilkin & Sons
Britvic Soft Drinks	Kellogg Europe Trading	Paramount 21	William Jackson Food Group
Burtons Foods	**Kitchen Range Foods**	Pataks (AB World Foods)	Young's Seafood
BV Dairy	Mars	Paterson Arran	
Coca Cola Enterprises	Medina Processing	Pepsico	

Note: one signatory wishes to remain confidential.

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