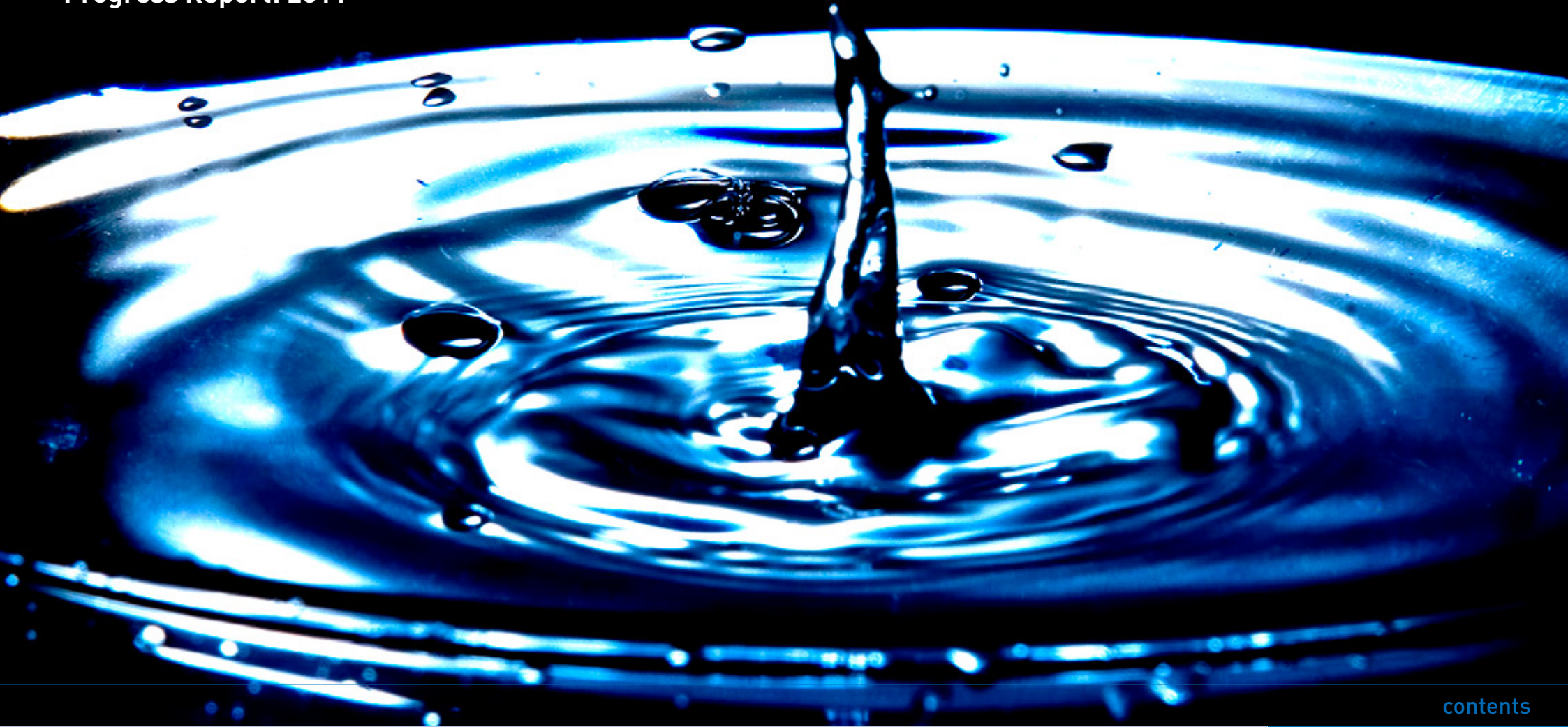


# The Federation House Commitment

Reducing water use within the Food & Drink Industry

**Progress Report: 2011**



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‘16 additional companies have signed up to the FHC making public their commitment to reducing water use. This brings the total to 54 active signatories across 245 sites.’



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## Executive summary

The Federation House Commitment (FHC) has now been running for three years, and continues to turn the commitments made by signatories into real, tangible water savings across the food and drink sector.

Between April 2010 and March 2011, 16 companies have signed up to the FHC making public their commitment to reducing water use. This brings the total to 54 active signatories, across 245 sites, engaged in making on-site improvements to reduce their water use.

FHC signatories have access to a package of support to help them to review and reduce their water use. From 2010, all FHC signatories are being offered a new service, which includes technical implementation support which can be provided as on-site support or in house training.

From November 2010 to end March 2011 support has been delivered to 32 different signatories. This has primarily been through one to one on-site support, with additional help and advice provided at FHC peer working group meetings, and through the FHC dedicated phone number and email address.

The benefits are clear, at least 102 sites have achieved a reduction in water use since 2007. In total, with assistance from the technical advisors, FHC signatories have identified potential water savings of over 1.3 million m<sup>3</sup> so far, representing an average 12.5% of site water use.

Signatories have also been encouraged to share best practice and three peer working group meetings, held in the first half of 2011, were well received. Issues covered included cleaning methods and techniques to reduce water use, cleaning in place (CIP) systems, cleaning checklists and preparing water efficiency plans. Additional peer working group meetings are planned throughout 2011.

Overall, 2010 has seen FHC signatories reduce their water use (excluding that in product) by 5.3% compared to 2007, continuing the trend identified in 2009.

This reduction is equivalent to almost 1.3 million m<sup>3</sup> or 520 Olympic swimming pools. This reduction is impressive considering that production for these sites increased by 7.5% in 2010, whilst water use (excluding that in product) per tonne of product decreased by a significant 11.9%.



**Liz Goodwin**  
CEO, WRAP

I'm delighted that signatories and the Food and Drink Federation (FDF) remain totally committed to this important initiative, as this continued progress shows. Water is one of the most precious resources the planet has and I'm delighted that, along with other initiatives, such positive steps are being taken to tackle the issue of water scarcity here in the UK.



**Nick Bunker**  
Chair of FDF Sustainability Steering Group and President of Kraft Foods UK & Ireland

I am delighted that strong progress to reduce our sector's water use continues, three years since the launch of the FHC. However, we cannot rest on our laurels. Water scarcity is a growing risk that impacts upon everyone so I urge all food and drink manufacturers to sign up to this Commitment to improve water use efficiency and reduce the pressure on the UK's water supplies.

## Foreword: FHC – a small but important step on a journey to better water stewardship.



**Dr. A.K. Chapagain**  
Senior Water Advisor,  
World Wildlife Fund (WWF)-UK

The trend in water demands is rising sharply which is having significant effects on the quantity and quality of water available at local and global scales. With uncertainty in the access to water, societies are becoming acutely vulnerable to a wide range of issues associated with limited water availability, such as loss in productivity, degraded ecosystems, poor health and hygiene leading to higher death rates and social unrest. Hence, water has become an issue of global concern.

Against this background it is essential that we all understand how to use water more wisely, particularly our scarce blue (surface and ground) water resources. The Federation House Commitment (FHC) is an important part of this process, encouraging signatories both to reduce water use and examine how their processes might be improved to be more efficient in future. Although the FHC targets apply only to direct water use in the UK, they also serve to raise awareness of the amount of water involved in food production more widely and introduce principles which can be applied in other contexts and situations.

It is also important to look at water alongside other aspects of resource use. A recent report, jointly produced

by WRAP and WWF-UK, shows that each year 8.3 million tonnes of food and drink are wasted at a household level, and as a result 6,200 million cubic metres of freshwater that are used to grow and produce this food and drink is wasted at a global level. This food and drink waste is also responsible for greenhouse gas emissions of 20 million tonnes CO<sub>2</sub> equivalent per year. At the same time, the impacts of water use need to be understood in the wider context of balancing the water available for the environment, people and businesses. Unlike carbon, each unit of water used has a different impact depending on location. Thus the geographical context in which water is used should always be considered. Even within the UK, some regions have experienced periods of serious water stress over the last few years and these are likely to increase in the future.

Recently ‘water risk’ has become a management priority for companies globally, since it affects not only the performance, but also sometimes the survival of the firm itself. Water risk can hit a company’s direct operations as well as its supply chain, ultimately affecting operational costs, profits, and future growth. Besides physical risks related to lack of water availability or poor water quality, there are also reputational risks, regulatory risks, and eventually financial risks from water scarcity and pollution.

Assessing water consumption and improving operational efficiency through responsibility deals such as the FHC provides the first step in the journey towards

effective management of corporate water risk. As a second step, companies can begin assessing broader supply chain risks. Often this means collaboration with other water users, for example other companies in a specific watershed, and other local users such as farmers who are likely to share the same risks.

Hence, there needs to be collaboration among businesses and the whole supply chain needs to be taken into account. At the same time, local communities and other stakeholders located in different sections of a water basin need to be engaged in a dialogue, together with the government authorities (who are ultimately responsible for deciding water allocations and water quality standards). In this respect, collaborative groups, such as the FDF, can facilitate and help in developing such a platform for wider stakeholder engagement, and the FHC is the first such step in the right direction. The WWF was pleased to be associated with the work done by the FDF last year to see how its existing Five-fold Environmental Ambition – which already includes the FHC in respect of water – could be extended to cover impacts across the supply chain and promote closer working with other stakeholders. There are various other water initiatives such as the ‘CEO Water Mandate’ and the ‘Alliance for Water Stewardship’ aiming to create certified standards and methods to help businesses in this journey towards sustainable water management. The WWF hopes that, working together with WRAP, the FDF, FHC signatories, and other businesses, we can effectively contribute to a better water world.

## Introduction

The FHC is a voluntary agreement (also known as a responsibility deal), managed by WRAP and the FDF<sup>1</sup>. It aims to help manufacturing companies in the food and drink sector to reduce water usage within their company, and by doing so, contribute towards an overall sector-wide water reduction target of 20% by the year 2020 against a 2007 baseline.

The FHC is helping this sector to become a leader in national efforts to improve water efficiency. All food and drink manufacturers are encouraged to become signatories and in doing so can improve their environmental efficiency and increase their profits.

As FHC signatories, food and drink companies pledge to review their on-site water use and develop site specific action plans within six months of signing up to the Commitment. Signatories then review and update the action plan and commit to provide data on water and cost savings made on-site on an annual basis.

In Autumn 2010, WRAP appointed Hyder Consulting to act as an independent administrator of the FHC. With its water efficiency expertise, and experience of working with food and drink companies, Hyder also plays a central role in helping signatories by providing expert advice on assessing water use, identifying water saving opportunities and developing implementation plans.

Under the FHC, food and drink companies pledge to review their individual on-site use and take action to reduce it. The five key steps that signatories commit to are:

1. to establish a baseline of water use for individual signatories;
2. to assess water use at each participating company's manufacturing sites;
3. to develop site-specific action plans to reduce water use;
4. to implement those action plans; and
5. to report water and cost savings to WRAP annually.

The FHC has now been running for three years, and continues to turn the commitments made by signatories into real, tangible water savings across the food and drink sector.

This is the third FHC Annual Progress Report (last year's report can be accessed from the FHC website [www.fhc2020.co.uk](http://www.fhc2020.co.uk)). The 2011 FHC Annual Progress Report summarises water savings made by signatories in 2010 and highlights progress made in signing food and drink manufacturers up to the FHC during the period April 2010 to March 2011.

It demonstrates the collective progress its signatories are making and highlights some of the measures individual companies have adopted to reduce their water use at UK manufacturing sites.



<sup>1</sup> FDF is the voice of the UK food and drink industry, the largest manufacturing sector in the country. The FHC is a key component of FDF's Five-fold Environmental Ambition, launched in 2007 to demonstrate FDF's commitment to making a real difference to the environment.

## Why the FHC?

The food and drink sector is a major water user, both from direct abstraction and its use of the public water supply. According to Defra's Food Industry Sustainability Strategy<sup>2</sup> (FISS, 2006), the food and drink industry<sup>3</sup> in England and Wales uses an estimated 252 million m<sup>3</sup> per annum of which 157 million m<sup>3</sup> (equivalent to 430 mega litres per day or 10% industrial use) is from the public water supply and 95 million m<sup>3</sup> (equivalent to 260 mega litres per day) is from direct abstraction.

The overall water reduction target of 20% by 2020 against a 2007 baseline, as set out in the FISS, is considered to be feasible by implementing water use best practices across the sector. The FHC provides an avenue to help the industry to achieve this target.

Although not a requirement of the FHC, the 20% industry-wide target has been incorporated into many FHC signatory's own corporate targets and in some cases signatories have set even more challenging objectives to drive down water use and achieve their individual sustainability goals.

While the FHC and this Report are specific to the food and drink manufacturing sector, other businesses can benefit from improving their water efficiency. Companies can contact WRAP for free expert advice by visiting [www.wrap.org.uk](http://www.wrap.org.uk) or calling the Resource Efficiency Helpline on 0808 100 2040.

### Why sign up?

By signing up to the FHC, companies within the food and drink manufacturing sector are reaping the benefits from improved water efficiency and financial savings, whilst contributing to the overall industry-wide target to reduce water use.

**Improving the bottom line:** By taking action, food and drink manufacturers that have not previously examined their water consumption can make savings on bills of up to 30%, often with little initial financial investment.

**Gaining a competitive edge:** Environmental sustainability is an important area to address. Today's consumers are increasingly savvy shoppers who care about the impact they make on the environment, and are subsequently attracted to companies that do too. FHC signatories are making a public declaration of their commitment to environmental sustainability. As the focus of consumers and stakeholders alike extends more and more throughout the supply chain, this is important whether you are a business-to-business or consumer focussed company.

**Anticipating the future:** Making an investment today with specialist access to expertise is smart preparation for a more resource constrained future.

**Operational compliance:** Many food and drink companies are regulated through environmental permits or operate a certified environmental management system where monitoring, setting targets and demonstrating continuous improvement are requirements. The FHC commitment aligns to these requirements and can help signatories ensure continued compliance.

Between April 2010 and March 2011 (the period covered by this report), the FHC has continued to grow with a further 16 companies making the public commitment to reduce their water use. This brings the FHC membership to 54<sup>4</sup> active signatories representing 245<sup>5</sup> sites who are engaged in making on-site improvements to reduce their water use.

2. The Food Industry Sustainability Strategy, 2006, [www.defra.gov.uk](http://www.defra.gov.uk)
3. Which includes wholesale, retail, food service and food and drink manufacturers.
4. In 2010 three signatories withdrew from the FHC and two merged.
5. A number of sites have closed during the course of the FHC programme.

### Why the FHC?

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## Why the FHC?

### New signatories

16 companies representing 58 sites, joined the FHC from April 2010 to March 2011:

- Brake Bros
- Constellation
- Hain Celestial UK Ltd
- Heinz Single Service Limited
- HJ Heinz Company Limited
- HJ Heinz Frozen & Chilled Foods Limited
- HP Foods Limited
- Medina Processing Ltd
- Milk Link - The Cheese Company
- Moy Park Ltd
- Oscar Mayer
- Produce World Ltd
- Refresco UK
- Thorntons plc
- Tulip Ltd
- Wilkin & Sons

This brings the total number of signatories to 54 across 245 active sites. A full list of participants is provided at the back of this [report](#).

Signatories signing up to the FHC pledge to follow five steps to progress:

- Step 1 – Develop a 2007 water use baseline.
- Step 2 – Assess water use at each manufacturing site by mapping water use and preparing a water mass balance.
- Step 3 – Develop a site-specific action plan.
- Step 4 – Implement the actions identified.
- Step 5 – Report annual water and cost savings.

WRAP will continue to work with each of these new and existing signatories to help them identify, develop and implement water saving initiatives at their manufacturing sites.



## FHC signatory benefits

FHC signatories have access to a package of tools and specialist support to help them to review and reduce their water use. From September 2010, all FHC signatories are being offered a new service, which includes:

- free technical implementation support; including on-site support<sup>6</sup>;
- an opportunity to participate in peer working group meetings;
- access to on-line water management tools, benchmarking information and Good Practice Guidance;
- an opportunity to promote success to the rest of the industry; and
- access to a dedicated signatory's area on the FHC website.

The new service has been introduced to ensure signatories receive:

- tailored 1:1 support in the early stages of implementation;
- technical support specific to their site and company needs;
- improved access to water efficiency tools and information; and
- opportunities to access and exchange information on specific water efficiency issues via the peer working groups.

### Technical Support Delivery

Signatories are provided with a range of technical support options when they sign up to the FHC to help them to:

- establish a baseline for water use, ideally using 2007 data;
- calculate a KPI (i.e. water used per tonne of product);
- assess water use and develop a water mass balance;
- identify key water saving initiatives;
- develop a site specific action plan;
- programme or prioritise actions on site; and
- report annual water use.

FHC technical advisors discuss requirements with the signatory company to identify the most appropriate level of support to deliver the maximum cost and environmental savings.

This approach aims to help signatories to adopt and implement the commitment steps appropriately throughout all their sites, not just those that have received a site visit.

6. The actual amount of support offered depends on identified need and potential for making water savings and is agreed between Hyder and WRAP.



## FHC signatory benefits cont.

The overall aim of the technical support delivery is to help signatories fulfil their commitment and achieve water efficiency savings. In particular it can help them to identify specific opportunities for water reduction, whilst also highlighting the potential cost and environmental savings.

Signatories are then able to use this information to justify any resource requirement, production changes or capital expenditure needed to achieve the water savings identified.

From November 2010 to end March 2011 signatories have identified a significant quantity of savings with the help of technical support (Table 1).

This is clearly making a significant contribution to helping signatories to identify water saving ideas and options, and contributing to the industry target of '20% by 2020'.

**Table 1:** Potential water savings identified with signatories through technical support

Signatory	No. sites visited	Total water use <sup>7</sup> (m <sup>3</sup> /annum)	Potential water savings	
			(m <sup>3</sup> /annum)	(% total)
Existing signatories	33	8,661,859	1,081,572	12.49%
New signatories <sup>8</sup>	13	1,994,317	253,216	12.70%

Note: that the savings identified are only those that could be easily quantified during the site visit. In many cases other areas have been highlighted which require the sites to investigate further before a saving can be quantified.

7. Total water use at date of site visit, for visits undertaken between November 2010 and March 2011.
8. Signatories who signed up between April 2010 and March 2011. The majority of these were signed up between September 2010 and March 2011 when Hyder Consulting's focus was on targeting new signatories.



## FHC signatory benefits cont.

### Peer Working Group Meetings

As part of the FHC, signatories are invited to attend peer working group meetings. These meetings are intended to provide training and specific advice (technical and managerial) to signatories and provide them with specific help to implement action plans.

The meetings also provide signatories with the opportunity to:

- share best practice with peers in an informal environment;
- network with peers and supply chain colleagues;
- discuss progress with the commitments steps; and
- obtain guidance on good practice techniques and technologies.

Two meetings were held in early 2011 and these were kindly hosted by two signatory companies: Nestlé and Kraft Foods. 28 representatives of signatory companies attended the half day sessions which provided detailed technical advice on:

- cleaning methods and techniques to reduce water use;
- cleaning checklists to aid identification of water saving techniques on site;
- cleaning in place (CIP) systems, including system optimisation; and
- preparation of water efficiency action plans.

The meetings were well received and feedback identified further topics for future discussion including:

- 'added value' water use;
- new technologies;
- boiler houses and cooling towers; and
- re-use and recovery to include rainwater harvesting and wastewater reuse.

In response to this feedback another series of meetings are being arranged focusing on 'added value' water, the first of which was undertaken at Wilkin & Sons Tiptree site in June. 'Added value' water refers to water that has been chemically treated or has energy associated with it. This includes water used in boilers and cooling towers.

A programme for peer working groups for the rest of 2011 is currently being developed and to supplement this, on-line training is being used to deliver more generic information.



## Progress to date

Over the last year FHC signatories have made continued progress in reducing their water use.

FHC signatories are required to provide data to WRAP annually (through Hyder Consulting) on their water use and associated costs. To maintain individual company data confidentiality, water usage data is aggregated and reported on a collective basis.<sup>9</sup>

### How is the water reduction measured?

FHC measures its water usage reduction against a 2007 baseline. WRAP reports on annual water use (excluding water that goes into the end product) to show progress towards the targets, and takes production levels into consideration, so as to accurately reflect improved water efficiency even in the event of growing operations.

### Water not in product

WRAP reports on two main figures; annual 'total water use' which includes all water used at a manufacturing site including Water In Product (WIP); and, annual 'water use (excluding WIP)', also sometimes referred to as Water Not In Product (WNIP). By reporting WNIP 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.

9. Individual company data is held by WRAP in confidence in accordance with data protection legislation.

WNIP is calculated as total water use less WIP. WIP is calculated as the proportion of total water use 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.

$$\text{WNIP} = \text{Total water use} - \text{WIP}$$

### 2010 Signatory and site summary

As the number of signatories and sites increases year on year the baseline total water use will change. This is summarised in Table 2. As a result reduction in total water use cannot be directly compared with the previous report, however it is useful to show how the FHC coverage is increasing.

**Table 2:** Summary of signatories, total water use and production.

2007 baseline data				
Annual report	No. signatories	No. Sites	Total water use (m <sup>3</sup> /annum) <sup>11</sup>	Production (tonnes/annum)
2010 report	42	204	44,951,827	15,549,744
2011 report	54	227 <sup>10</sup>	53,781,142	16,448,833

10. This includes sites that have since closed but excludes sites with insufficient data for 2007 and those new signatories which have not yet submitted data.

11. This includes WIP.



## Progress to date cont.

### Data used for analysis

The following section summarises water use data for 2010. Data was analysed in April. At that time there were 245 FHC registered sites, of these, 91% submitted data for 2010. In the 2010 report (on 2009 data) data was reported for 190 sites. However, only 154 site datasets were used to assess 2010 progress and the 'year-on-year trend', for the following reasons:

- 13 sites closed during 2010 and therefore either didn't submit or submitted part data for 2010 (5.3% sites).
- 25 sites had not provided baseline data for 2007 (10.2% sites). This includes newly recruited signatories' sites or signatories that have new sites or have acquired sites since 2007 and therefore have not been able to submit data for 2007 as their baseline year.
- 17 sites had not submitted 2010 data (6.9% sites). This includes some newly recruited signatories.
- 32 sites had submitted either incomplete data or data that requires verification (13% sites), for any year used in the analysis.
- 4 sites have not submitted 2009 data (1.6% sites).

In addition, Hyder Consulting has reviewed all data submitted since the FHC was launched to clarify baselines and ensure comparability and consistency in calculation of WNIP. As a result data is not directly comparable with that given in previous reports. Future reports will be reported on the new basis.

WRAP is also reviewing the data reporting process to determine how we can best demonstrate progress made by a greater proportion of FHC signatory sites in the future.

### 2010 Water reduction progress

Based on 154 sites (i.e. those with robust data for 2007, 2009 and 2010), total water use by FHC signatories has fallen by around 2.3 million m<sup>3</sup> between 2007 and 2010.

Water use (excluding WIP) by FHC signatories in 2010 has reduced by 5.3% from 24.2 million m<sup>3</sup> to 22.9 million m<sup>3</sup>, against the 2007 baseline, equating to a saving of around 1.3 million m<sup>3</sup> or enough to fill 520 Olympic swimming pools.

Hyder has reviewed all submitted data since the FHC was launched to clarify baselines and ensure comparability and consistency in calculation of WNIP. On this revised basis the reported reduction in water use (excluding WIP) for 2009, (based on 154 data sets

that we have comparable data for) is 3.5% (see Table 3). Future reports will be reported on the new basis.

At least 102 sites within the FHC have achieved a reduction in on-site water use since 2007, while many are still in the early stages of implementing water saving initiatives. Some sites have already made significant savings and a number of these are illustrated in the case study examples in this report.

In addition to the significant water savings that have been achieved, further environmental benefits including savings in energy, raw materials and associated carbon impacts will also have been realised. Assuming all water savings are from the public water supply and an average cost of £1.31/m<sup>3</sup><sup>12</sup> of water is applied, savings of around £1.68 million in the purchase of water alone will have been achieved. Further cost savings can be expected through changes in water treatment, effluent disposal and raw materials.

**Table 3:** Total water use against baseline year for 154 sites with comparable data

Year	Total water use		Water use (excluding WIP)	
	Total water use (m <sup>3</sup> /annum)	% reduction relative to baseline	Water use (excluding WIP) (m <sup>3</sup> /annum)	% reduction relative to baseline
2007	34,318,652	–	24,215,737	–
2009	33,251,276	3.1%	23,365,468	3.5%
2010	32,044,430	6.6%	22,932,676	<b>5.3%</b>

12. Based on average standard user tariff for 2010 from main water companies in England and Wales.

## Progress to date cont.

### FHC water reduction trend

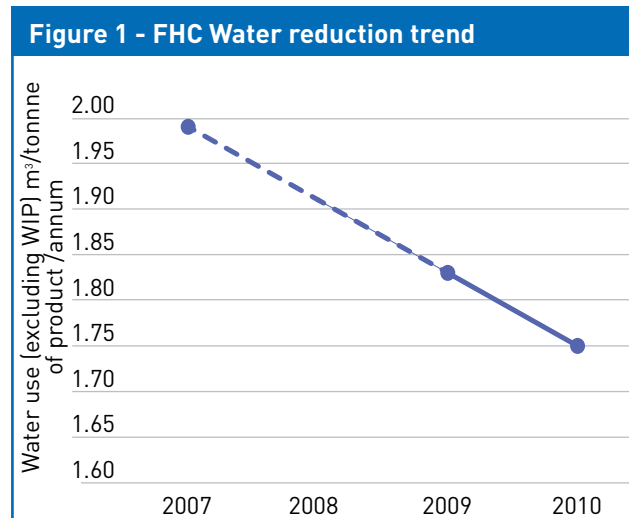
FHC signatories are continuing to make good progress in reducing water: a 7.9% reduction in water use (excluding WIP) per tonne of product was achieved between 2007 and 2009 and in 2010 a further 4.0% reduction was achieved, representing an overall reduction of 11.9% against the 2007 baseline (see Table 4).

To determine this year-on-year trend since 2007, and to give a like-for-like comparison only FHC sites reporting data for 2007 (baseline year), 2009 and 2010 have been considered in this analysis. This represents 154 sites.

When considering total water consumed per tonne of product manufactured, it is clear that this reduction correlates to actual water savings rather than variations in production rates. Since 2007 production by FHC sites has increased by 7.5% and water use (excluding WIP) per tonne of product has decreased from 1.99 m<sup>3</sup>/tonne of product to 1.75 m<sup>3</sup>/tonne of product, a reduction of 11.9% against the

2007 baseline. Table 4 summarises these figures and Figure 1 shows the water reduction trend.

**Figure 1** shows the volume of water (excluding WIP) as m<sup>3</sup>/tonne product for 154 sites with comparable data. Based on available data for 2007, 2009 and 2010.



**Table 4:** Total water use per tonne of product compared to baseline year for 154 sites with comparable data

Year	Total water use		Water use (excluding WIP)	
	Total water use (m <sup>3</sup> /tonne of product/annum)	% reduction relative to baseline	Water use (excluding WIP) (m <sup>3</sup> /tonne of product/annum)	% reduction relative to baseline
2007	2.81	-	1.99	-
2009	2.60	7.5%	1.83	7.9%
2010	2.44	13.1%	1.75	<b>11.9%</b>



## Progress to date cont.

### New signatory progress

Between April 2010 and March 2011, 16 new signatories have signed up to the FHC representing 58 new sites. This brings the total to 54 signatories and 245 manufacturing sites.

Of the 13 sites that have received on-site technical support, the potential savings identified during these visits account for around 12.7% of site total water use (see Table 1, page 9). which is a significant contribution to the industry target of 20% reduction by 2020.

### Scotland, Wales and Northern Ireland

FHC Signatories have sites across the UK. Table 5 and Figure 2 show how sites, represented by their total water use baseline figure, are distributed across the UK.

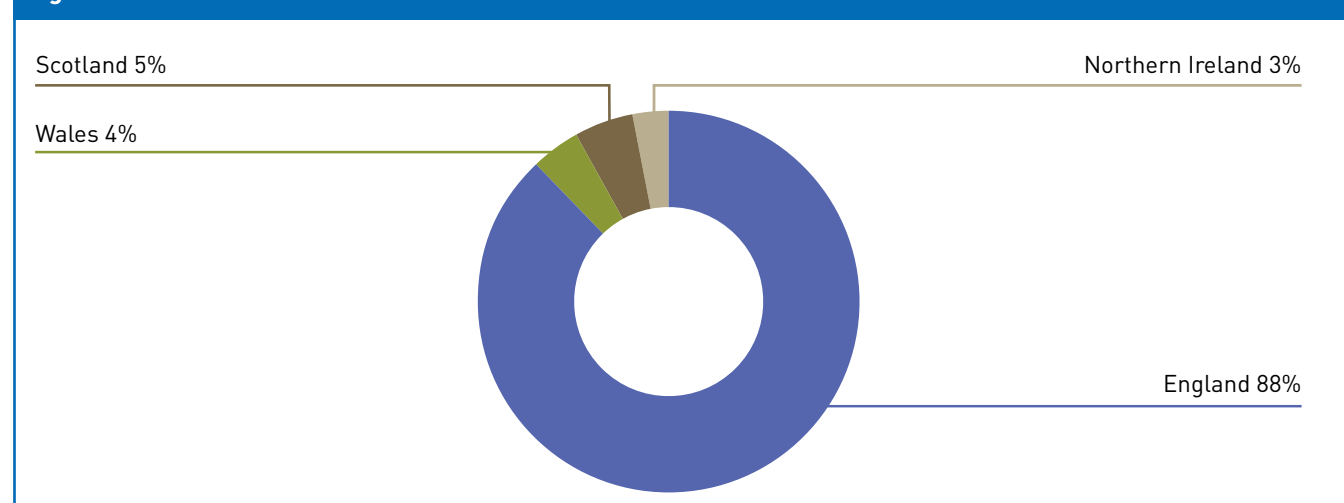
**Table 5:** Breakdown of sites by country

UK Breakdown	No. Sites	Total water use (m <sup>3</sup> )
England	186	47,393,403
Wales	13	1,984,082
Scotland	23	2,654,485
Northern Ireland	5	1,749,172
<b>Total</b>	<b>227</b>	<b>53,781,142</b>

### Sector coverage

To ensure that the FHC is making a significant contribution to the overall food and drink sector target to reduce water use by 20% by 2020, the FHC has set itself a goal to recruit 30% of the food and drink manufacturing sector (based on total water use in 2007<sup>13</sup>) to the FHC by March 2012. Recruitment at end March 2011 stands at 21% across the UK.

**Figure 2: UK breakdown of total water use**



13. Sector water use is based on FISS 2006 data, and includes food and drink wholesale, retail, food service and manufacturing.

## Actions and case studies

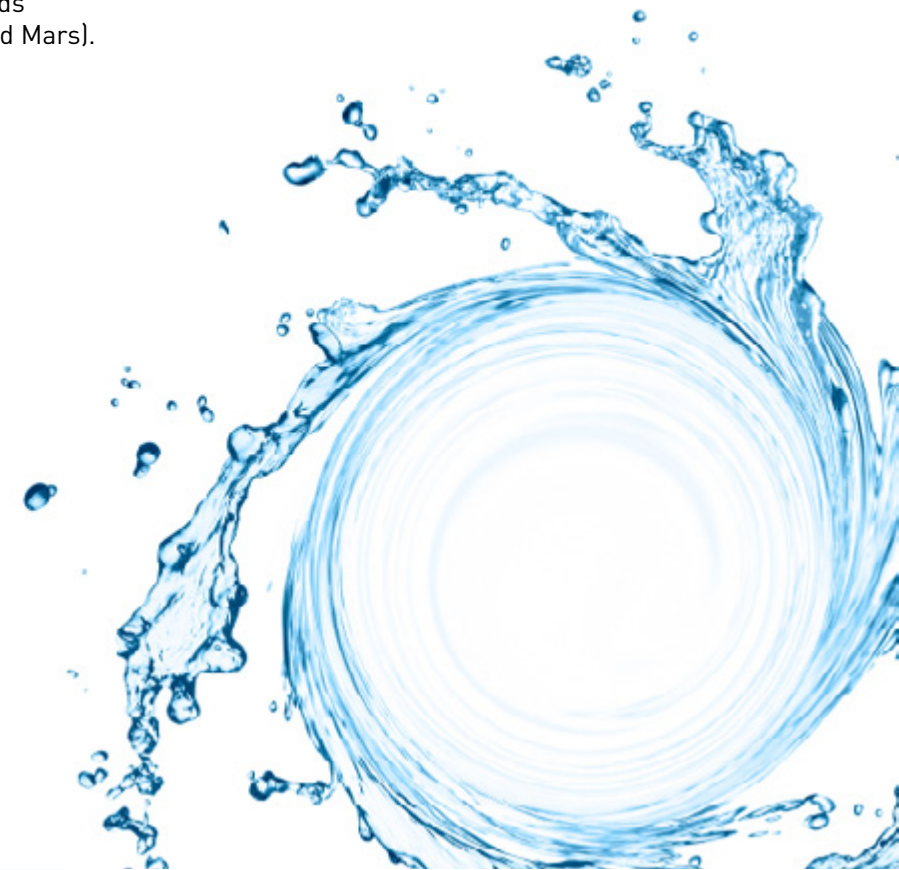
The FHC annual report provides signatories with the opportunity to promote their achievements. There are three case studies included in this report that highlight signatories experience of the FHC and summarise how they have used the technical support provided to help identify and implement changes at their sites.

From November 2010 to end March 2011, 32 different signatory companies incorporated one to one on-site support, with additional help and advice provided at FHC peer working group meetings and advice by telephone and email on request.

On-site technical support has already identified quantified potential savings of over 1.3 million m<sup>3</sup> typically representing an average 12.5% site's total water use.

Further case studies highlighting specific actions and activities that can be taken to reduce water use are available in the 2010 annual report which can be downloaded from the FHC website at [www.fhc2020.co.uk](http://www.fhc2020.co.uk). These include:

- Building teams and involving staff (case study - apetito).
- Using water balances and water use trends (case studies – Coca-Cola Enterprises and Mars).
- Development of an action plan (case study – Premier Foods).
- Benchmarking your water use (case study – Burton's Foods).
- Purchasing water efficient products (case studies – Warburton's and Young's).
- Water re-use initiatives (case study - United Biscuits).



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## Case Study Cott Beverages – Technical support for Kegworth site



'The one day visit from the FHC was very useful as it opened our eyes to other cost savings we had previously not identified. We found the day very informative and were impressed with the level of technical help provided'

Jim Dawson, Group Health, Safety and Environment Manager, Cott Beverages Ltd

**Cott Corporation is one of the world's largest non-alcoholic beverage companies and the world's largest retailer brand soft drink provider. The Cott Beverages Ltd site in Kegworth has six PET bottling lines producing bottled water and carbonated soft drinks. They became a signatory of the Federation House Commitment in February 2008.**

Cott Beverages Ltd recognised the potential benefits from improving water efficiency and signed up to the FHC shortly after its launch in 2008. Even so, the company realises that improvements in water efficiency cannot be made overnight, with some improvements having to be made over a period of time or perhaps requiring major re-organisation of process equipment.

Joining the FHC acted as a catalyst and made us start to look at our water use. In doing so we uncovered many water-related issues needing investigation, some of which threw up significant water saving opportunities. One of the larger ones was associated with our liquid ring vacuum pumps. Our vacuum pumps use water for cooling and forming the 'seal' - the liquid ring. Instead of using water on a once-through basis it was decided to try to recover this water and re-use it by recirculating the seal water via chillers. The first recirculation system was installed earlier this year and has been operating successfully. It is now saving us a lot of water (>75,000 m<sup>3</sup>/y). With our average cost of water at around 70p/m<sup>3</sup> this has helped us save over £52,000/y -a lot of money!

We recently had one of the FHC on-site reviews which proved very useful. It provided a 'health check' on our own findings and conclusions and also helped us identify other opportunities we had not been aware of. Through this technical assistance we were also able to gain a much better understanding of actual costs associated with water and waste water making some potential improvements more financially advantageous.

Actions and case studies

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# Case study Nestlé UK & Ireland – Technical Support for Halifax Site



Good Food, Good Life

‘Population growth, consumption habits and the impacts of climate change are combining to present a serious threat to the security of one of the world’s most precious resources – water. Global drying needs to quickly get to the top of the agenda because the issues related to water are short term and in many cases irreversible. As founder signatories of the FHC we see the benefits of setting targets and dealing with water issues.’

Inder Poonaji, Head of Safety, Health and Environment Sustainability



## Nestlé UK & Ireland signed up to the FHC at its launch in January 2008, and has received a range of support through the agreement.

Nestlé relies on access to clean water to make quality products and has adopted rigorous standards to reduce water consumption at all plants and facilities.

The Water Resources Review (WRR) programme focuses on five areas: water quantity; water quality; regulatory compliance; site protection; and relationships with other stakeholders.

### Acting fast on water

In line with our global strategy, Nestlé UK & Ireland has water reduction programmes in place at all manufacturing sites, offices and distribution centres. To date we have reduced absolute water usage by 36% since 2006 – well ahead of our own 2020 target and our commitments under

the Federation House Commitment. This has been achieved through a range of site specific reductions ranging from the installation of a new £500,000 waste treatment plant at our Girvan site in September 2010 to reducing the amount of water taken in at our Fawdon factory by 25% by removing cooling towers and installing new washing systems.

### Added value water provides opportunity to reduce water and achieve significant cost savings

The generation of steam is a costly form of water and is often referred to as an ‘added value water’. Identifying opportunities to use steam more efficiently helps the site to reduce water use, and thus contribute to the FHC industry target, as well as reducing energy costs, a key driver for Nestlé. One such project resulted in a reduction of steam consumption by 70%, saving 17,911m<sup>3</sup> of water per annum (35% of the sites total usage) and £25,000 on water and effluent charges per annum.

### Communication is the key to success

Raising awareness in water efficiency is something that the FHC is keen to promote and is the key to successful and continued implementation of water reduction campaigns. At Nestlé’s Halifax site they identified all main areas that use water.

Engagement of the employees was maintained by use of a meeting room called the DOR (daily operational review) where progress was meticulously recorded and graphically presented. This was a compliance driven project that took an engineering lead and was able to deliver a payback of 3.6 years based on a £3.9 million investment.

**“As part of the technical support, the FHC technical advisor provided a useful independent review of what the Halifax site had implemented.”**

Ryan McNeill, Engineering Manager, Nestlé Halifax

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## Case study Wilkin & Sons Ltd – New signatory experience



‘Joining the Federation House Commitment has made Tiptree even more aware of the importance of water use and water efficiency and how these can impact on site performance both environmentally and financially. The on-site technical support helped us to improve our water balance and pointed us in the right direction to further reduce water use in several areas which was a great help.’

Kevin Townsend, Environmental Officer, Wilkin & Sons Ltd



**Wilkin & Sons joined the FHC in 2010 and have used the support available to identify potential water savings. They describe their experience of the FHC here.**

We at Wilkin & Sons in Essex are known for our ‘Tiptree’ jams and marmalades. We are committed to a programme of continual improvement in environmental performance. Water is key to all our manufacturing processes, and as such we became a signatory of the FHC.

As a new signatory to the FHC we were encouraged to sign up for an on-site technical support visit almost straight away. This proved to be extremely useful.

Although we thought we were ‘on top’ of water issues the visit highlighted some anomalies in our water balance which we were able to investigate.

The on-site support allowed a review of water use across all of the site operations.

Again we thought we had this under control but the review allowed us to ask ourselves questions about where, how and why we were using water.

Apart from highlighting opportunities for immediate savings some opportunities identified will allow us to save hot water – which we learnt has a much higher value – around £2.68/m<sup>3</sup> on our site – compared to a mains water cost of 58p/m<sup>3</sup>.

The potential improvements identified, include the possibility of dry lube conveyors, improvement in hygiene station taps, repair of leaking valve glands and others. This has now allowed us to develop an action plan which we are now in the progress of working through.

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# The Federation House Commitment – steps to progress

Signatories to the FHC pledge to follow five steps to progress.

## Step 1 – Develop a water use baseline

Water data for 2007 is submitted for each manufacturing site. This data is used to form the 2007 baseline. Where this may not be possible, for example, sites built or acquired after 2007, the baseline is taken to be the first year that the site operated from.

Baseline data is required to be submitted within three months of making the commitment.

For multi-site organisations, this can be taken forward as a staged process, building up to full coverage over a period to be agreed in advance between each relevant signatory and WRAP.

## Step 2 – Assess water use at each manufacturing site

Each manufacturing site maps its water usage and constructs a water balance. This step is designed to identify those areas on site that have high water usage and is used to pinpoint potential areas for further investigation. It is also a useful way to highlight where there may be gaps in the data or identify unknown water use including leaks.

## Step 3 – Develop a site-specific action plan

Once specific areas of water usage have been identified, a series of focussed actions to provide on-site improvements to reduce water usage should be developed.

Action plans are required to be submitted within six months of making the commitment.

Example actions might include the installation of sub-metering to better understand water use in certain areas, the opportunity to optimise cleaning including CIP, or to investigate water reuse as part of overall operations.

## Step 4 – Implement the actions identified

This step aims to realise the potential water efficiencies that have been identified and the associated cost savings.

## Step 5 – Report annual water and cost savings

On-going monitoring helps to track progress and measures the impact of actions that have been implemented. FHC signatories are required to report water use for each site to WRAP on an annual basis (by calendar year). This information is usually collected in January onwards for the preceding year.

Reporting these results annually demonstrates the contribution that the FHC is making to reduce overall water use in the food and drink sector. It also demonstrates to signatories the progress that they have made in implementing water savings.

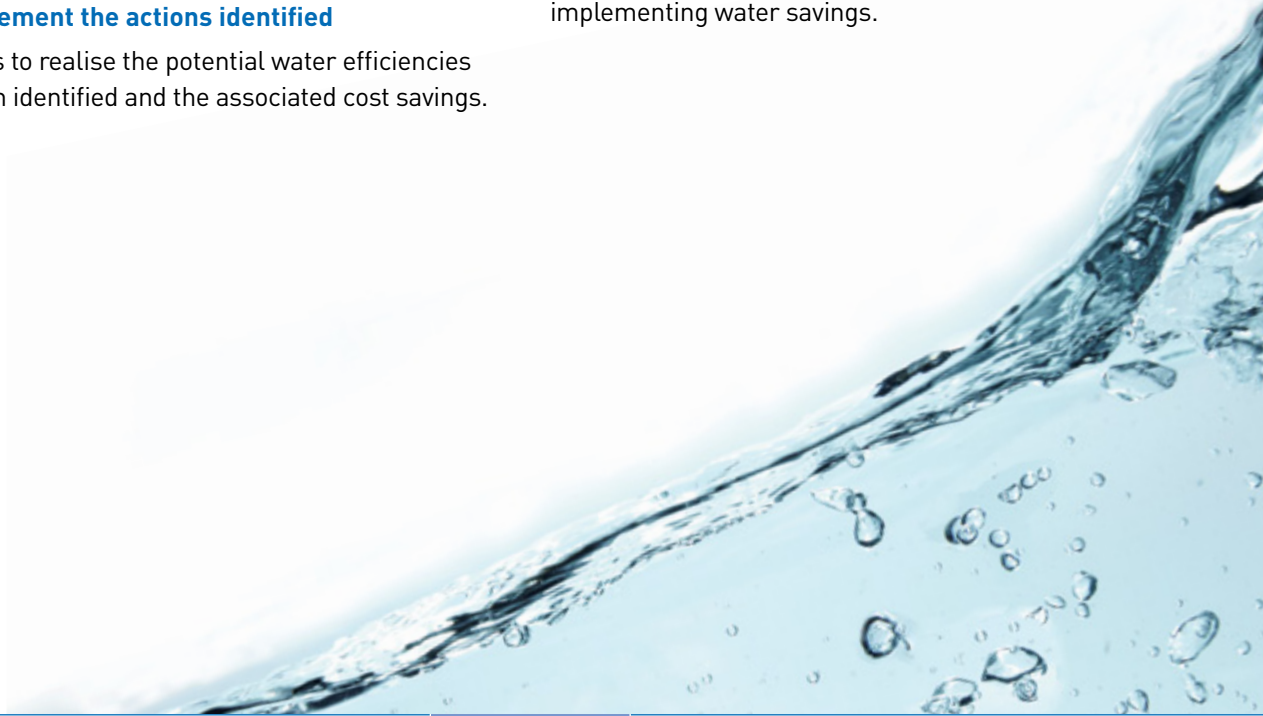
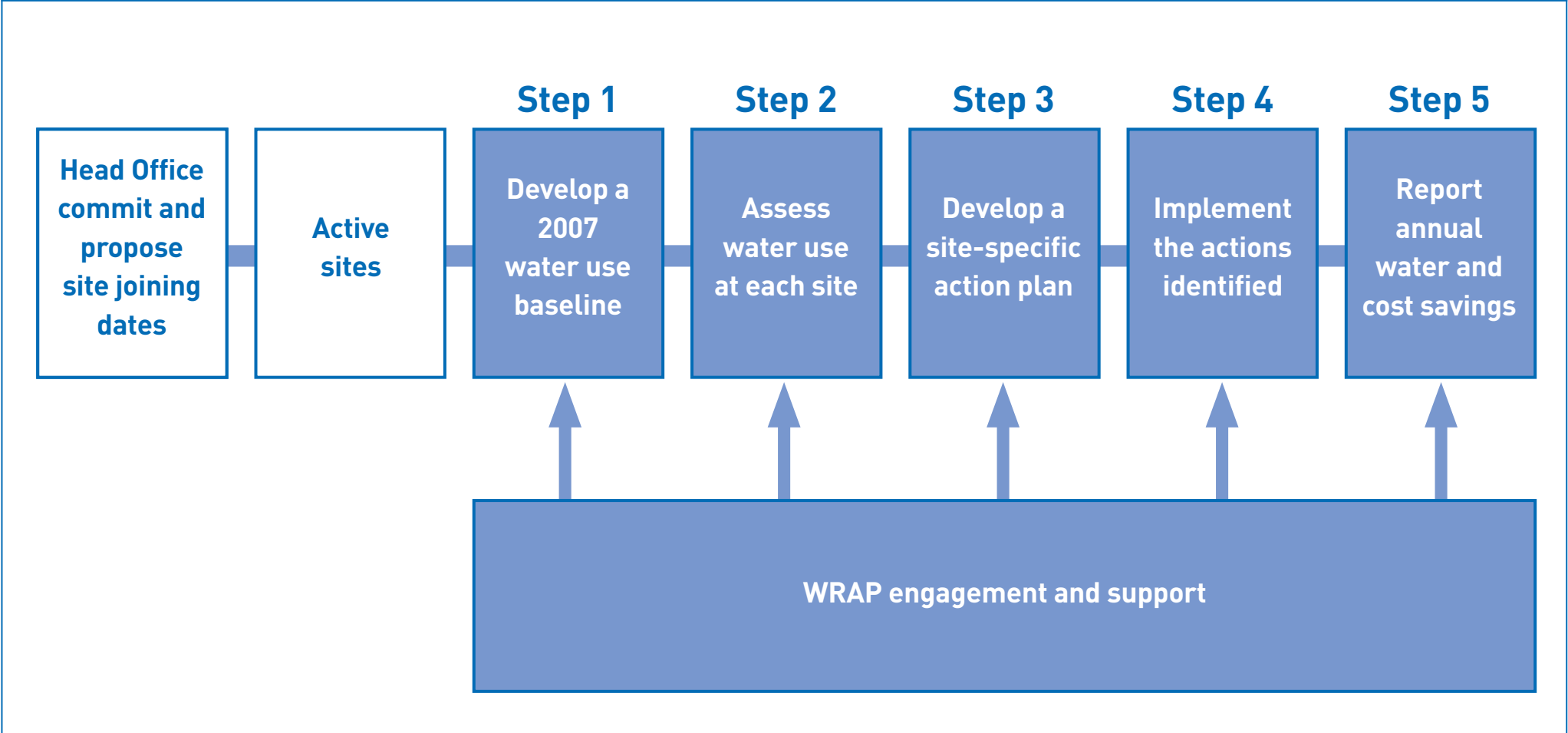


Figure 3: FHC – Five steps to progress



## FHC signatories (March 2011)

FHC signatories before April 2010			New FHC signatories (signed up between April 2010 and March 2011)	
Apetito	Framptons Ltd	Paterson Arran Ltd	Brake Bros	Milk Link The Cheese Company
Bettys & Taylors of Harrogate	Freshtime	PepsiCo	Constellation	Moy Park Ltd
Birds Eye	Kellogg Europe Trading Ltd	Premier Food Group	Hain Celestial UK Ltd	Oscar Mayer
British Bakels	Kraft Foods	R&R Ice Cream	Heinz Single Service Limited	Produce World Ltd
Britvic	Mars	RWM Foods	HJ Heinz Company Limited	Refresco UK
Burton's Foods	Moray Seafoods	Unilever	HJ Heinz Frozen & Chilled Foods Limited	Thorntons plc
Coca Cola Enterprises	Muller	Uniq	HP Foods Limited	Tulip Ltd
Cott Beverages	Natures Way Foods	United Biscuits	Medina Processing Ltd	Wilkin & Sons
Cranswick Country Foods	Nestlé	Warburtons		
Dairy Crest	Newlyweds Foods Ltd	Weetabix		
General Mills	Northumberland Cheese Company	William Jackson		
GlaxoSmithKline	Paramount 21	Young's Seafood		
Greenvale AP	Pataks (AM World Foods)			

## For further information about the FHC

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**Web:** [www.fhc2020.co.uk](http://www.fhc2020.co.uk)

**Phone:** 0121 345 9014

## For further information about the FDF

**Web:** [www.fdf.org.uk](http://www.fdf.org.uk)

## For further information about resource efficiency contact WRAP

**Tel:** 0808 100 2040

**Web:** [www.wrap.org.uk](http://www.wrap.org.uk)

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