

A top-down view of a breakfast table. In the upper right, a hand pours milk from a white pitcher into a bowl of cereal. Next to it is a cup of black coffee on a saucer and a small glass of milk. Below the coffee, a hand holds a small bowl of yogurt topped with raspberries and blueberries. To the right of this is a butter dish with a large block of butter and several pats. Further right, a hand is seen with a toaster rack containing slices of toast. In the lower right, a plate holds more toast with butter. In the lower left, a hand holds a small glass of milk with a straw. Next to it is a small vase with white flowers. At the bottom center is a cup of latte. A black and white cow-shaped milk carton lies horizontally in the center of the table. Two spoons are placed near the top center. A bowl of fresh berries sits near the bottom center.

Dairy Roadmap 2013

Environmental Sustainability Report



Milk from 1.81 million cows¹ looked after by over 50,000 farmers and farm workers² is made into nutritious dairy products by 26,000 people working at British dairy manufacturing sites³ and sold to British consumers through 85,720 retail shops⁴ and 262,000 foodservice outlets⁴ and enjoyed by millions in Britain and around the world to deliver a total value of **£9.81 billion** in annual sales⁵.

¹ Defra, June 2012

² www.thisisdairyfarming.com

³ ONS Business Survey, 2012

⁴ IGD, 2013

⁵ Kantar Worldpanel/ AHDB retail figures for 52 weeks to 14 April 2013 + UK Customs and Excise export numbers 2011

Welcome to the
Dairy Roadmap
Environmental
Sustainability
Report
2013

Report
Structure

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World Leaders



THE BRITISH DAIRY
INDUSTRY LEADS THE
WORLD ON ENVIRONMENTAL
SUSTAINABILITY

Nowhere else in the world has the supply chain, from farmers right through to retailers, come together to agree such a broad programme with hard, time-bound environmental sustainability targets.

Looking internationally, we know that there are individual cases of companies around the world undertaking supply chain projects, or focusing on the environmental performance of their sites. However, to achieve real change we need the whole supply chain to work together from farmers through to retailers. In order to provide additional reassurance, in Britain we have the Red Tractor scheme which certifies that food has been produced to independently inspected standards at farms and manufacturing sites.

We started in 2008 as the Milk Roadmap focusing solely on the liquid milk sector. We published a further report in 2009 before expanding to cover total dairy production in 2011. In this 2013 Report you will see a number of new targets and some targets that have been expanded.

This reflects that we are constantly developing what we do on environmental responsibility. With each report, the ambition and reach of the

industry has grown and this is reflected in the way the Roadmap has developed.

As you read through this Report you will see that our dairy farmers and dairy manufacturers have made excellent progress against the tough targets we have set for ourselves, but there are still some areas where we have work to do.

Retailers in Britain have also publicly supported the aims and objectives of the Dairy Roadmap and provided tangible evidence of the steps that they are taking to support the achievement of the Roadmap's ambitions.

There is no end point, no finish line on environmental sustainability and we will continue to challenge ourselves to keep progressing in this area.



Kate Allum
chair,
Dairy Roadmap



Integrated Communication



WE HAVE DONE
THINGS DIFFERENTLY
WITH THIS REPORT

Firstly, we have chosen an online report rather than a hard copy for two reasons. Of course, it fits with our environmental credentials to favour an electronic copy, but most importantly it is a demonstration that this Report is a living document. What we do on environmental sustainability is constantly evolving and we wanted the flexibility of an online report to reflect this.

Secondly, while you can read about how we're doing against the various 2015 and 2020 targets we have set out for the industry, if you want more background detail this is provided elsewhere on the [Dairy Roadmap website](#).

Thirdly, we have developed an integrated package of channels to put a spotlight on just a few of the people that make up the British dairy industry. Through the Dairy Roadmap website you can view some short case studies that link in with dairy farmer and dairy manufacturer targets. We plan to upload more case studies

over the coming months, and you can register on the website if you want us to let you know when new case studies are available to view.

In addition, we have a new Twitter address [@dairyroadmap](#) where you can follow us to get news updates, further environmental news from the British dairy industry and our perspective on great environmental sustainability stories happening in other parts of the world

Setting Targets



WE HAVE SET SPECIFIC TIME-
BOUND ENVIRONMENTAL
TARGETS FOR DAIRY FARMERS
AND DAIRY PROCESSORS

While we are fully focused on achieving these targets, we recognise that these will not be achieved if individual companies or groups of farmers, or individual retailers, or foodservice companies, work in isolation. We also recognise that we need to engage wider than just the dairy supply chain.

Our aim is to build collective engagement from governments, businesses, non-governmental organisations and other stakeholders to work alongside us and make our environmental sustainability work as robust and far-reaching as possible.



Dairy Roadmap

Dairy Farmer Targets

Since the first Roadmap Report in 2008, we have had strong commitment from dairy farmers towards meeting the challenge of producing more from less, reducing environmental impact and planning a more sustainable future.

This report details the progress made so far against the 2015 & 2020 targets and introduces new targets, underlining farmers' commitment to producing more while impacting less.

2015
Dairy Farmer
Targets

— 01 —

90% of dairy farmers
are actively nutrient
management planning

— 02 —

65% of dairy
managed farmland
into Environmental
Stewardship Schemes

— 03 —

70% uptake of water
use efficiency measures

— 04 —

10 – 15% of dairy
farmers investigating
and / or implementing
at least one form of
renewable energy
technology

— 05 —

50% of dairy farmers
implementing new
developments and
/ or technologies to
reduce emissions from
agriculture

— 06 —

Declining trend in
serious pollution
incidents on-farm

— 07 —

Dairy farmers
encouraged to calculate
carbon footprints and
implement carbon
reduction plans

2020
Dairy Farmer
Targets

— 01 —

20 – 30% reduction in
GHG (including carbon
dioxide, methane and
nitrous oxide) emissions
from dairy farms
between 1990 and 2020

— 02 —

70% of non-natural
waste is recycled or
recovered as standard
practice

— 03 —

90% uptake of water
use efficiency measures

— 04 —

40% of energy used on
dairy farms is from
renewable sources

01

Progress achieved
against 2015 targets

90% of dairy farmers are actively nutrient management planning

Good nutrient planning ensures that the nutrients applied, either as artificial fertiliser or organic manures, match requirements for optimal plant growth, and replace the mineral nutrients removed when the crop is harvested. This requires a good understanding of crop nutrition, up to date information on soil nutrient status and manure composition, appropriate application techniques, and careful timing of application to maximise nutrient uptake by the growing plant ⁶.

Nutrient Management plans help farmers and growers to plan the use of fertilisers and manure, meet regulatory demands and protect the environment. The proportion of dairy holdings with a nutrient management plan has reached 73% ⁷. This figure is up from 60% in 2009.

At the current rate of progress, the industry is on target to achieve 90% of farmers actively nutrient planning by 2015.

⁶ Tried & Tested, Nutrient Management Plan http://www.agindustries.org.uk/documents/fertilisers/trying_and_tested_2010.pdf

⁷ The Defra Farm Practices Survey 2012 – ‘England Greenhouse Gas Mitigation Practices’.

02

65% of dairy managed farmland into Environmental Stewardship Schemes

There are 5,170 ⁸ agreements in place where dairy farmers are currently part of an Environmental Stewardship Scheme (ESS) in England. As a result, the total area of dairy holdings in an ESS is 841,810ha, which represents approximately 69% of dairy managed farmland.

This puts us on target to hit the 2015 target.

The majority of English dairy farmers participating in an agri-environment scheme receive payments under the Entry Level Stewardship Scheme to help with environmental management.

The most popular environmental options for dairy farmers are:

- Hedgerow management which is designed to support wildlife habitat whilst improving the local landscape and historic boundaries.
- Permanent grassland with low inputs, which is designed to support a greater variety of plants and wildlife.
- Protection of in field trees, which helps provide wildlife habitat.

⁸ Natural England



Case Study
David Harding
Court Lodge Farm,
Wartling,
Sussex

[Click here to view film](#)

David Harding proves that dairy farmers are custodians of the countryside as well as food producers. For most dairy farmers, producing milk is a family business; their priorities are long-term financial security, being able to hand the farm onto the next generation, and caring long-term for their land and animals which make up their herd. This is the main reason that 65% of dairy farmland in England has now been entered into recognised countryside stewardship agreements, which ensure that farming operations complement nature.

03

70% uptake of water use efficiency measures

Figures of around 1,000 litres have been quoted as a global average for the quantity of water required to produce a litre of milk⁹. However, due to our temperate climate, the UK dairy industry does not need to use irrigated water. Most UK dairy feed comes from rain-fed crops, which means only 7-8 litres of water are needed from mains supply, or are abstracted from rivers or boreholes, to produce a litre of milk¹⁰.

The 2015 and 2020 targets for water efficiency were amended to reflect broader progress towards increased water efficiency measures and continuing developments in water footprinting.

The results of a DairyCo Resources Survey¹¹ that took place in December 2012 demonstrate an increasing farmer interest in water usage:

- 78% were implementing efficiency measures, and a third of these were considering taking further steps to improve water efficiency
- Of these, 31% collect rain water, 94% re-use water from the plate cooler, while 53% have diversified water supplies using borehole water
- 61% of dairy farmers were using metered water, and 96% checked regularly for leaks

At the current rate of progress, the industry is on target to achieve the target by 2015.

⁹ Mekonnen and Hoekstra (2012). A Global Assessment of the Water Footprint of Farm Animal Products, Ecosystems (2012) 15: 401–415

¹⁰ The Volumetric Water Consumption of British Milk, Report by Cranfield University for DairyCo (2012)

¹¹ DairyCo Effective Use of Resources Survey (2012)

04

10 – 15% of dairy farmers investigating and / or implementing at least one form of renewable energy technology

Investigating and/or implementing some form of renewable energy is becoming increasingly popular amongst farmers. Renewable energy is seen as a form of farm diversification and alternative source of income as it can help to reduce energy bills and create revenue.

- 28.9% of respondents to the DairyCo Resources Survey had implemented some form of renewable energy
- Of these, 71.1% had installed solar photo-voltaic (PV) panels, 22.3% had erected wind turbines, and 5.0% had put in Anaerobic Digestion (AD) plants
- 38.7% of respondents had plans to introduce some form of renewable energy

As you can see, at the current rate of progress, the industry is on target to achieve the target by 2015.



Case Study
Steve Edmunds

[Click here to find out more about Steve's pioneering approach](#)

© Farmers Weekly 2012

Steve manages a 200 cow dairy herd in partnership with his brother. He has invested in 90 kilowatts of ground-mounted solar PV on the farm, which replaces 50% of imported power for the 200-cow dairy unit, three farm dwellings and a neighbouring poultry unit. In addition, two 25kW biomass boilers replace heating oil for the two houses and save 60t of carbon a year.



05

50% of dairy farmers implementing new developments and / or technologies to reduce emissions from agriculture

ON TARGET

Dairy farming is a progressive, technologically aware industry. In a recent DairyCo survey, 80.2%¹¹ of respondents were implementing measures, tools or skills which were new to the farm and which had the potential to improve technical efficiency and reduce GHG emissions.

These varied from changes in management practices to the adoption of new and better technologies. More fuel efficient machinery reduces energy consumption, while use of the most up to date technology can increase the accuracy of operations such as manure or slurry application.

Better breeding programmes match genetics of the animal to the farming system, and increase production efficiency by allowing the potential of superior animals to be expressed. Improvements in health status ensure good animal welfare while reducing production losses due to disease. Increasing the feed efficiency optimises animal performance, which will reduce environmental impact.

11 DairyCo
Effective Use
of Resources
Survey (2012)



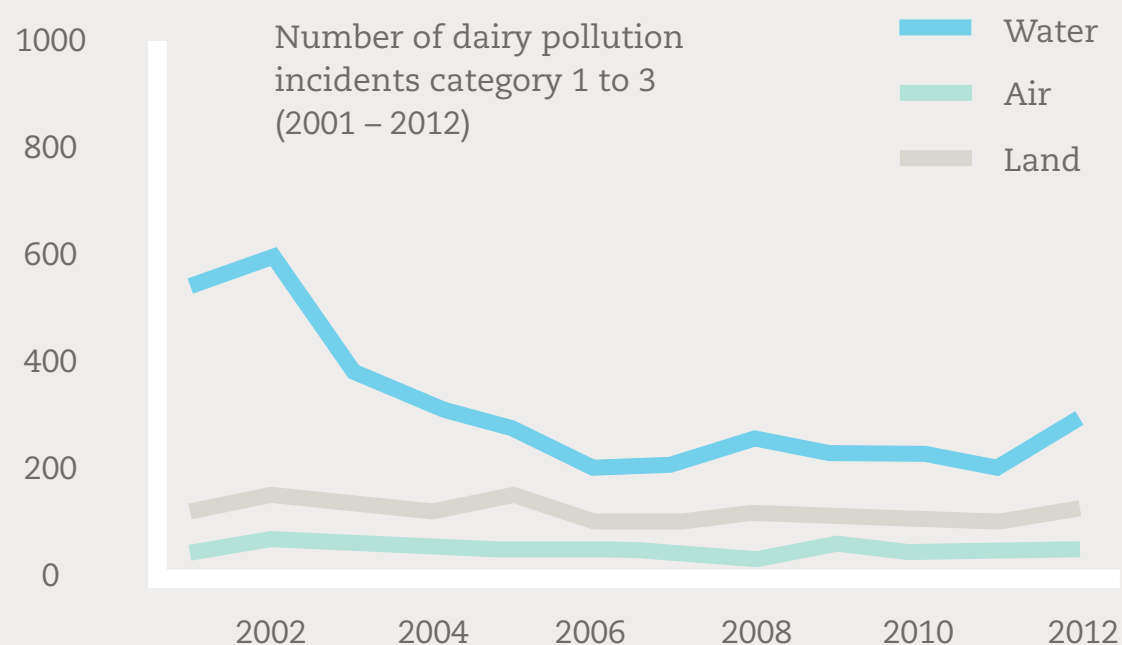
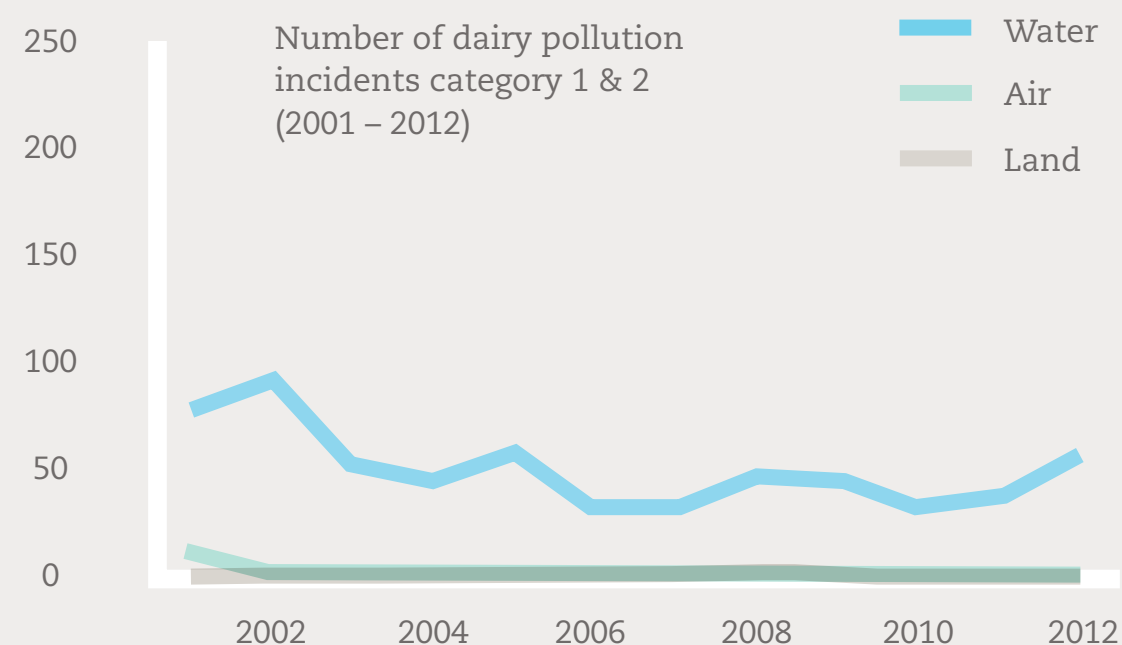
Case Study
First Milk - Nestlé
Sustainability Partnership

*[Click here for more details on the First Milk
Nestlé partnership](#)*

The strength and uniqueness of the Dairy Roadmap is that it demonstrates an industry working together to achieve much more than the effort of individual companies or farmers. An example of this is the partnership which has been in place since 2010 to build a sustainable supply chain for the manufacture of chocolate crumb in Ayrshire, Scotland. Over the last 3 years this partnership has worked with 70 farmers within a 35 mile radius of Nestlé's Girvan factory to reduce the supply chain's carbon footprint and water usage as well as investing in professional development and biodiversity.

06

Declining trend in serious pollution incidents on-farm



Category 1: persistent or extensive impact on the environment
 Category 2: significant impact
 Category 3: minor impact

Data from the Environment Agency shows a consistent long term trend towards reducing pollution incidences associated with dairy farms.

07

Dairy farmers encouraged to calculate carbon footprints and implement carbon reduction plans

Sustainable food production and dealing with climate change are global issues that need a global solution and dairy farmers are part of that solution. Our climate, geography and knowledge mean that British dairy farmers are ideally suited to produce dairy products in an efficient and environmentally sustainable way.

Carbon footprinting enables a holistic view of farm efficiency to be taken. It provides a detailed review of resource use, and calculates the impact of farm-specific parameters such as level of milk output and herd replacement rate, on Greenhouse Gas (GHG) emissions.

Farm carbon footprinting

— 38%¹¹ of respondents to the DairyCo resources survey (2012) had undergone a carbon footprint audit on their farms, and 52% of these had used

11 DairyCo Effective Use of Resources Survey (2012)

the carbon audit to adjust their management

- A DairyCo study of 415 dairy farms conducted in 2011 ¹² benchmarked the carbon footprint for GB milk at 1309g CO₂ eq./ l of milk — comparable to that of most efficient dairy producing regions of the world ¹².
- For the same reference sample, the average carbon footprint was 5% lower in 2012 ¹³.
- Retailers and processors continue to actively promote carbon footprinting as a route to improving technical efficiency and environmental sustainability.

“Carbon footprinting challenges us to look at the efficiency of our farm, and where we could improve it. We are always on a learning curve.”

David Harding, Court Lodge Farm

¹² Greenhouse Gas Emissions from the Dairy Sector - A Life Cycle Assessment, report prepared by: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS Animal Production and Health Division, FAO, 2010) <http://www.fao.org/docrep/012/k7930e/k7930e00.pdf>

¹³ Greenhouse gas emissions on British dairy farms. DairyCo carbon foot printing study. 2011/2013

¹⁴ Greenhouse Gas Emissions from UK Agriculture by Sector for 1990 and 2010, Report to DairyCo by Rothamstead North Wyke, February 2013.

Progress achieved against 2020 targets

01

20 – 30% reduction in GHG (including carbon dioxide, methane and nitrous oxide) emissions from dairy farms between 1990 and 2020

Two perspectives are available on the trends in GHG emission from dairy farming. The first is the national inventory data, used by Government to report on UK international commitments to carbon reduction under the Kyoto protocol.

National inventory:

- Calculated GHG emissions from the UK dairy sector reduced by 26% between 1990 and 2010 ¹⁴
- Over the same period, the contribution of dairy farming to total UK agriculture emissions reduced from 29% to 27% ¹⁴

The second source is carbon footprint information collected on-farm by the dairy industry itself. At this point carbon audits have been completed on over 2000 farms.

02

At the current rate of progress, the industry is on track to achieve this carbon reduction target by 2020.

A supporting objective of the Roadmap is to increase the use of carbon auditing, enabling dairy farmers to adjust management to increase production efficiency, reduce cost and lower carbon footprint.

70% of non-natural waste is recycled or recovered as standard practice

Typically, non-natural waste is made up of plastics (i.e. silage wrap, containers, fertiliser bags) and also items including paper/cardboard, oil drums, building waste, batteries and tyres.

Currently some of the biggest development needs for farmers recycling waste are around the availability of recycling facilities and the high cost of collection schemes.

This is a stretching target which will involve encouraging development of infrastructure to allow for the disposal of such material as well as better methods of measuring progress.

03

90% uptake of water use efficiency measures

This target expands on the 70% target for 2015.

04

40% of energy used on dairy farms is from renewable sources

This target builds upon the 10 - 15% target for 2015.

Government has set a target to deliver 15% of the UK's energy consumption from renewable sources by 2020¹⁵. The 40% target for renewables is a challenging one, but reflects the potential and the interest among farmers in generating renewable energy.

¹⁵ UK Renewable Energy Roadmap, Department of Energy and Climate Change, July 2011
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48128/2167-uk-renewable-energy-roadmap.pdf



Dairy Roadmap

Dairy Manufacturer

Dairy processors purchase and collect milk from farms across the country transporting it to dairies to process into a wide range of products and then transferring these to retail, foodservice and export customers. All of this of course has an environmental impact and this next section details how the dairy manufacturers are reducing this through Roadmap targets.

Dairy companies have this year taken the progressive step of individually signing up to the Dairy Roadmap and committing to take action and help the sector meet its targets. This will not only improve the quality of the reporting data year on year, but also serve to increase the transparency of the initiative and improve our understanding of where our efforts should be concentrated. A full list of those organisations that have signed up to date can be found on the [Dairy Roadmap website](#).

2015 Dairy Manufacturer Targets

— 01 —
Every large processing site will have in place an Environment Management System (EMS) covering carbon, energy, water, effluent, waste and packaging, with all permitted sites progressing to an externally verified EMS by 2015

— 02 —
Small sites to be investigating EMS

— 03 —
All major processing companies to be implementing a carbon management programme

— 04 —
A 20% relative reduction of water brought onto site

— 05 —
To achieve a 20% relative reduction in Chemical Oxygen Demand (COD) load in discharged effluent

— 06 —
To send zero ex-factory waste to landfill, where environmentally advantageous, for all large processing sites

— 07 —
Three Anaerobic Digestion (AD) plants at Dairy Roadmap sites

— 08 —
30% recycled material in High Density Polyethylene (HDPE) milk bottle

— 09 —
Remove all Hydrofluorocarbons (HFCs) at all large processing sites

— 10 —
80% of paper-based cartons to be Forest Stewardship Council (FSC) labelled

— 11 —
A Biodiversity strategy for processors to be written and to be in the process of implementation

— 12 —
All major processing companies to be part of the Freight Transport Association's (FTA) Logistics Carbon Reduction Scheme or to commit to equivalent fuel efficiency targets

— 13 —
All major Dairy Companies to have phased out Euro4 engines

2020 Dairy Manufacturer Targets

— 01 —
To achieve a 15% improvement in energy efficiency

— 02 —
30% relative reduction in water brought onto site

— 03 —
A 20% relative reduction in Chemical Oxygen Demand (COD) in pre-primary treatment effluent

— 04 —
To send zero ex-factory waste to landfill

— 05 —
50% recycled material in HDPE milk bottles

— 06 —
All tertiary packaging to be reusable or recyclable

— 07 —
100% of paper-based cartons to be FSC-labelled

01

Progress achieved
against 2015 targets

Every large processing site will have in place an Environment Management System (EMS) covering carbon, energy, water, effluent, waste and packaging, with all permitted sites progressing to an externally verified EMS by 2015

An EMS allows an organisation to achieve its environmental aims through consistent measurement and management of its processes and operations.

Of the 36 large processing sites (those processing over 50 tonnes of milk a day) currently reporting into the Roadmap, 32 (88%) have an EMS in place.¹⁶

Of the 27 environmentally permitted sites, 26 (96%) currently have an externally verified EMS, with the vast majority of these being to ISO14001 standard.¹⁶

¹⁶ Dairy UK
Environmental
Benchmarking
Exercise

02

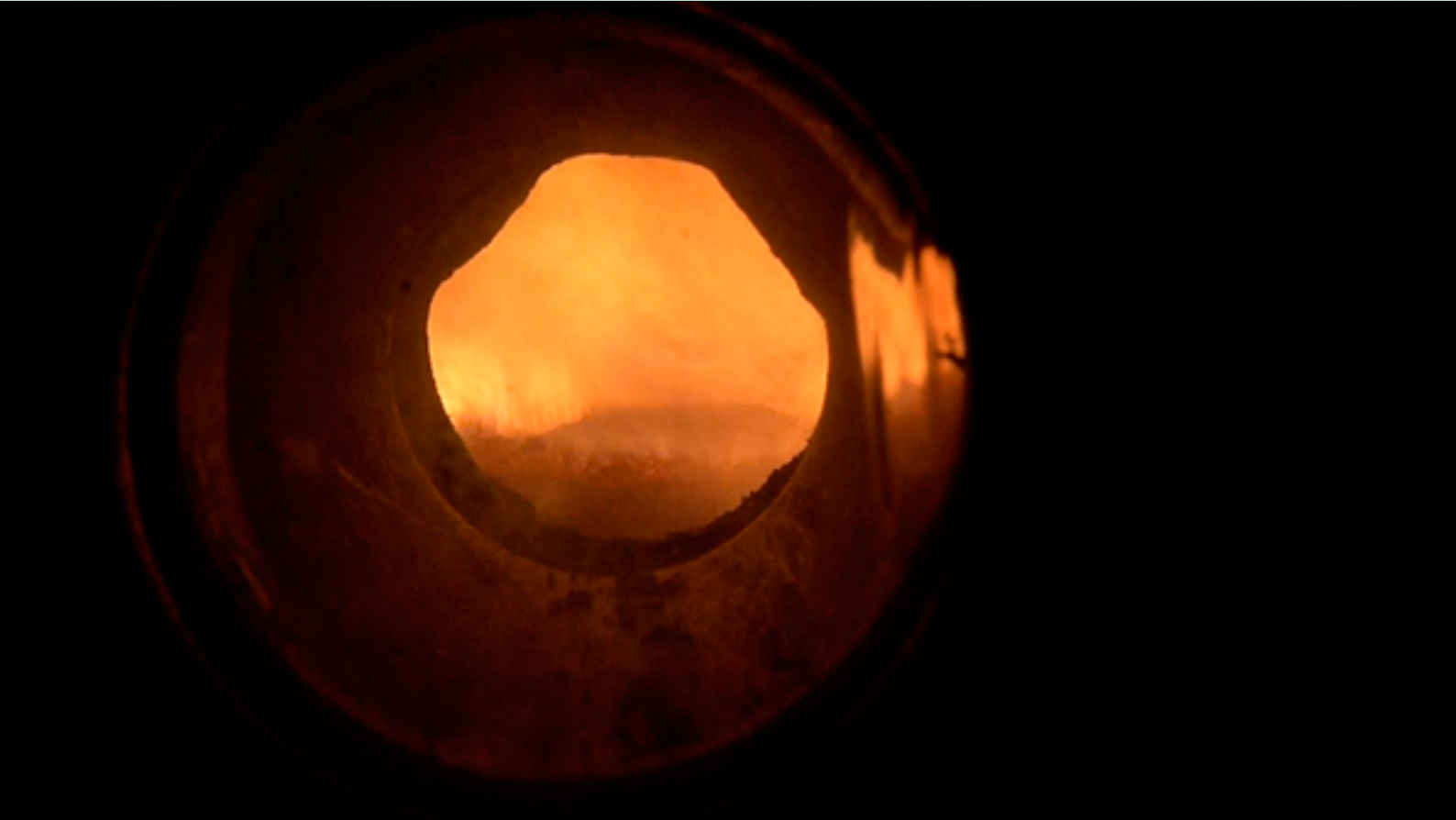
Small sites to be
investigating EMS

There are currently only three small sites reporting into the initiative; of these two are already investigating EMS and should have systems in place by 2015.

At present it is not possible to give accurate figures on the level of uptake of EMS amongst small and very small sites across the UK dairy processing sector. A key task for the Roadmap over the course of the next two and half years will be to engage with more of the smaller sites and to encourage them to take part in the Roadmap and contribute towards its aims.



Click here to find out why Rodda's, who have been making cream in Cornwall for over 120 years, believe a well-produced Environment Management System will help ensure that they will be around for many years to come.



*Case Study
Dairy Crest
Biomass Plant*

*[Click here to see how renewable energy is
being utilised to cut fossil fuel usage](#)*

Turning milk into great tasting cheddar requires energy, power and steam, and until 2011 this large Cornish creamery generated its requirements from traditional fossil fuel sources. However, Davidstow now utilises one of the biggest biomass boiler systems in the UK and in doing so has reduced its carbon footprint by 20,000 tonnes per year. The wood pellets which fuel the two boilers come from recycling grade A wood and hence no new trees are felled to create them, and their use prevents 18,000 tonnes of waste going to landfill.

03

All major processing companies to be implementing a carbon management programme

Within the context of the Dairy Roadmap a carbon management programme is defined as a comprehensive plan to quantify, record and reduce a company's carbon emissions. While not exclusively so, emission sources will principally be from electricity and fuel use at manufacturing sites, transport and logistics, and packaging. Details of the plan and progress against it should also be publicly available either through an organisation's website or a published sustainability report.

Of the 5 major processing companies (those processing in excess of 200,000 tonnes per year) currently reporting into the Dairy Roadmap (defined as a company processing in excess of 200,000 tonnes of milk a year) all have programmes to monitor and reduce their carbon emissions. Over the next two and half years, companies will work to fully meet the requirements of this target, with carbon plans available either on individual company websites or through the Dairy Roadmap website.

04

A 20% relative reduction of water brought onto site

Water use within the dairy manufacturing sector is used principally for cleaning equipment. While this may represent a relatively small portion of the total 'water footprint' of a dairy product, in total it is not an insignificant amount. It is estimated that the food and drink industry in total uses around 252 million m³ ¹⁷ of water a year, with the dairy processing sector accounting for around 13% ¹⁸ of this, or 33 million m³ annually – that's enough water to fill the Empire State Building in New York over 30 times.

As part of the sector's commitment to reducing water consumption, Dairy UK formed a partnership with the Federation House Commitment (FHC) in early 2013. The FHC is a voluntary initiative run by WRAP which aims to help reduce water usage across the food and drink industry sector by 20% by 2020. The partnership aims to encourage more dairy companies to participate in the initiative and asks participants to develop water reduction plans, provides access to free expert advice and site visits, and requires submission of data to demonstrate progress made each year.

Dairy Roadmap sites have reduced their relative water consumption by 5.7% since 2008 from 1.28

¹⁷ Food Industry Sustainability Strategy – Defra, 2006

¹⁸ Water Efficiency in the UK Drinks Sector –WRAP, 2007

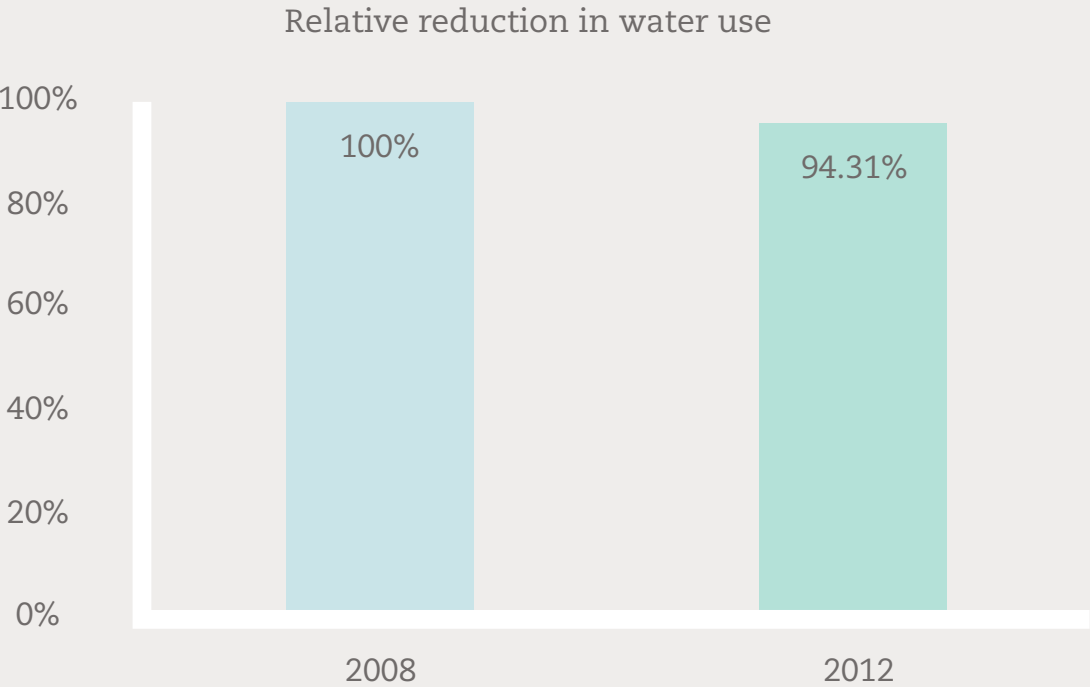
litres of water per litre of milk processed to 1.21. This equates to 577,171 m³ ¹⁹ — that's about the annual water use of 3,150 families ²⁰.



Click here to find out how Müller Wiseman Dairies is significantly reducing its demands on local water supplies and the associated environmental impacts including reducing its carbon footprint.

19 Dairy UK Environmental Benchmarking Exercise

20 Based on average family water use of 500 litres per day – Environment Agency



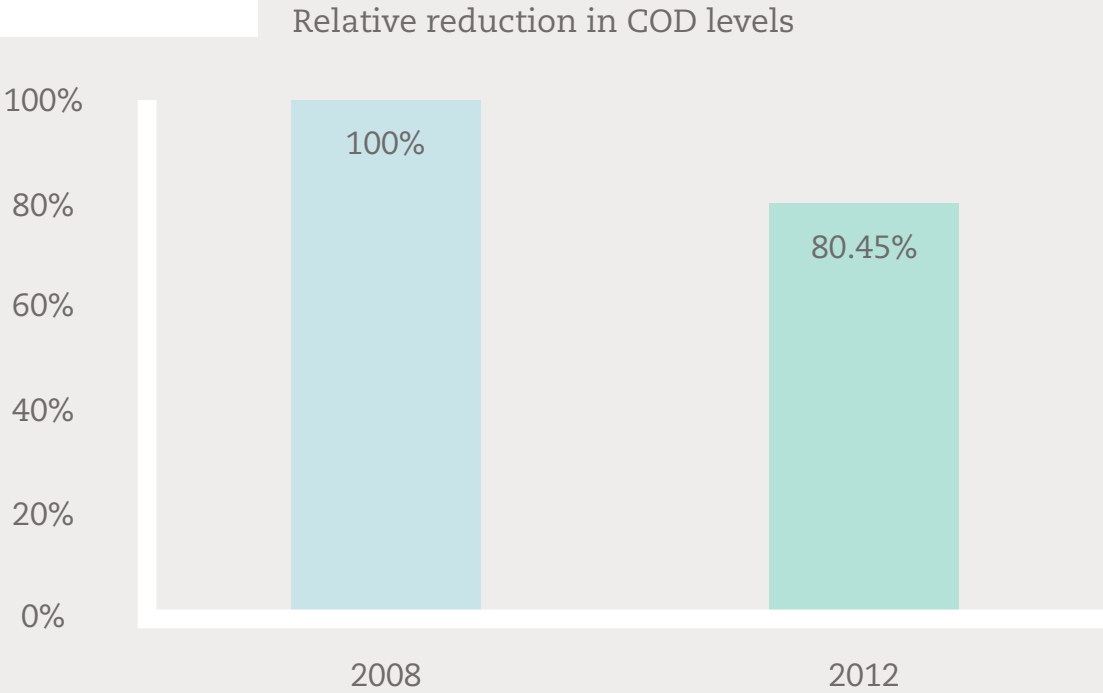
05

To achieve a 20% relative reduction in Chemical Oxygen Demand (COD) load in discharged effluent

Chemical Oxygen Demand (COD) load is a measure of the amount of organic compounds in a sample of water. In the context of the Roadmap this measures the amount of compounds (principally milk) in the annual effluent discharge load of the 40 Dairy Roadmap sites and gives us a very good indication of the quality of water discharged from dairies.

Dairy Roadmap sites have reduced their relative COD loads by an impressive 20% since 2008, from 2.1 kg per litre of milk processed to 1.7 kg per litre hitting their target two years early ²¹.

21 Dairy UK Environmental Benchmarking Exercise



06

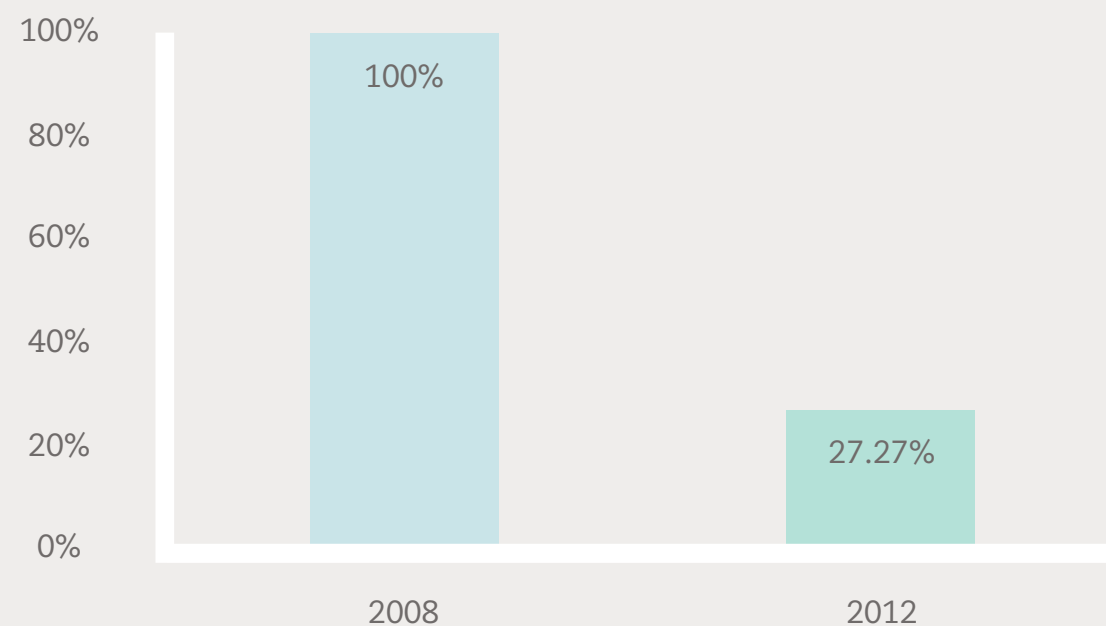
To send zero ex-factory waste to landfill, where environmentally advantageous, for all large processing sites

22 155 tonnes of CO₂ based on average of 34 kg of CO₂ emitted per tonne of plastic going to landfill – Defra/DECC GHG Conversion Factors 2012

In today's world we have to look at waste as a resource to be reused, recycled and recovered as much as possible; this makes both environmental and business sense.

Dairy Roadmap sites have reduced the amount of waste going to landfill by 4,541 tonnes since 2008, a reduction of 73%. This reduction equates to a reduction of 155 tonnes of CO₂ ²². There still remains some way to go but the sector is well on target to hit zero tonnes by 2015.

Relative reduction in waste levels



Dairy Manufacturer 2015

07

Three Anaerobic Digestion (AD) plants at Dairy Roadmap sites

Anaerobic digestion represents a significant opportunity for the dairy industry for both waste management and renewable energy production. AD as a process uses bacteria to break down organic material (principally waste from dairy processing) in the absence of oxygen. The by-products of this process are: methane and carbon dioxide (biogas) that can be used to produce renewable energy, biomass digestate that can be sold and used as fertiliser and water.

There are currently two AD plants in operation at Dairy Roadmap sites, one at BV Dairy in Shaftesbury, England and one at Ballyrashane Dairy in Coleraine, Northern Ireland. A further AD plant for Arla at Aylesbury is due to come on line later in 2013.

08

30% recycled material in High Density Polyethylene (HDPE) milk bottle

In 2009, we saw the introduction of the first milk bottle to include up to 15% Recycled High Density Polyethylene (HDPE) – a world first – right here in Britain. Since then the industry has managed to achieve a national figure of 15% so that if a consumer picks up a milk bottle in the supermarket they can be sure that it now contains 15% recycled material.

A lot of hard work is being undertaken by all players in the market (retailers, dairies, blow moulders and recyclers) to make progress towards achieving the 30% target and we are confident that it can be achieved by 2015.

In addition to the increase in recycled material, the major bottle manufactures are working hard to reduce the overall weight of bottles and thereby further reduce the carbon and resource impact of milk bottles in the UK.

09

Remove all Hydrofluorocarbons (HCFCs) at all large processing sites

HCFCs are a group of commonly used refrigerants in the food and drink industry. Due to their ozone depleting properties, the European Commission has regulated to ensure that since 2010 no new equipment has been produced using HCFCs and that from 2015 no HCFCs will be available to refill existing equipment. The dairy processing sector aims to go one step further than this and ensure that all large sites are completely HCFC free by the end of 2015.

HCFC use currently accounts for around 25% of all types of refrigerant use at dairy processing sites ²³.

²³ Dairy UK
Environmental
Benchmarking

New Targets introduced

In line with the ethos of the Dairy Roadmap being a living document, the processor sector has worked hard to develop new targets to ensure the scope of the Dairy Roadmap keeps pace with current environmental best practice and the wider sustainability landscape.

The following new targets have been added since the last Dairy Roadmap report was issued in 2011.



Case Study
Nampak recycled
materials in milk
bottles

*Click here to view our story on sustainable
packaging*

As is often the case with our most common everyday items, there is a fascinating story of innovation and cutting edge technology behind the “infini” milk bottle. Over the last 5 years, the UK’s largest manufacturer of milk bottles (Nampak) has developed a polybottle that is not only 20% lighter but which will also incorporate 30% recycled materials in its construction by 2014. This is 12 months ahead of the Dairy Roadmap target.

10

80% of paper-based cartons to be Forest Stewardship Council (FSC) labelled

Carton packaging makes up a relatively small proportion of the total packaging used on dairy products in the UK but the industry is still committed to reducing its impact in this area where it can and will work with its suppliers to do so. This target aims to ensure that at least 80% of the paper used in dairy carton packaging comes from responsible, FSC accredited, forests by 2015.

Progress against this target will be reported on in 2015.

11

A Biodiversity strategy for processors to be written and to be in the process of implementation

The dairy processing sector is currently developing the scope and focus of a biodiversity strategy. Updates will be available from the Dairy Roadmap website in due course.

Progress against this target will be reported on in 2015.

12

All major processing companies to be part of the Freight Transport Association's (FTA) Logistics Carbon Reduction Scheme or to commit to equivalent fuel efficiency targets

The dairy processing sector believes that it is vitally important to take account of transport emissions within the Dairy Roadmap and to demonstrate that action is being taken to reduce impact in this area. The Logistics Carbon Reduction Scheme is a voluntary industry-led approach to reducing carbon emissions from road freight by recording and reporting reductions in emissions. The overall aim is to reduce the intensity of CO₂ emissions by 8% by 2015.



Arla Foods transports considerable volumes of dairy products and this consumes large quantities of diesel. To counter this, Arla took the decision to invest in Liquefied Natural Gas (LNG) technology and replace diesel use by LNG. This solution replaced 65% of normal diesel usage with LNG increasing fuel efficiency and reducing carbon emissions by 20%.

13

All major Dairy Companies to have phased out Euro4 engines

To date, three of the five major processors have signed up to the scheme. Full progress against this target will be reported on in 2015. For further information on the scheme please see the [FTA Website](#).

The European Union defines acceptable limits for exhaust emissions for all new vehicles sold in the EU, with increasingly higher standards required in successive years following the introduction of the regulation. The dairy processing sector is again looking to lead by example and will ensure all company-owned haulage vehicles use Euro 5 engines or better by the end of 2015.

01

Progress achieved against 2020 targets

To achieve a 15% improvement in energy efficiency

At the start of 2013 the dairy processing sector negotiated an energy efficiency target with government of a 13.6% improvement between 2008 and 2020. This Dairy Roadmap target aims to go beyond this and requires an additional 1.4% reduction over the same period.

During the course of the first Climate Change Agreement (CCA) phase from 2000 to 2010 the dairy processing sector improved energy efficiency by 28% which equated to an annual energy use reduction of 1,457,407 mWh ²⁴. That is the equivalent amount of energy used by 74,000 households ²⁵, or enough energy to supply a city the size of Oxford in England.

²⁴ Dairy Sector Climate Change Agreement Data

²⁵ 74,000 households based on an average household energy use of 19,800 kWh a year (adjusted to primary energy) – Ofgem: Typical domestic energy consumption figures 2011

02

30% relative reduction of water brought onto site

This target builds upon the 20% target for 2015.

03

A 20% relative reduction in Chemical Oxygen Demand (COD) in pre-primary treatment effluent

This target is related to the COD target for 2015, but instead measures exclusively any reduction in the amount of compounds reaching the effluent plant, rather than those leaving the site. In this regard, the target aims to specifically measure and reduce food wastage in processing. A key challenge for this target will be to ensure that as many companies are monitoring this measure as possible as it is currently not standard industry practice.

04

To send zero ex-factory waste to landfill

This target goes beyond the 2015 target and aims to ensure that all Dairy Roadmap companies, no matter how small, are managing their waste effectively and efficiently by 2020.

05

50% recycled material in HDPE milk bottles

This target pushes the boundaries further from the 30% target in 2015.

06

All tertiary packaging is to be reusable or recyclable

Tertiary packaging can be defined as the packaging used for bulk storage of products and typically includes pallets, cardboard boxes and shrink wrap. The setting of a target to ensure all of this packaging is reusable or recyclable will be a significant challenge for the sector and will require close cooperation with many partners and stakeholders from across the supply chain as well as Government.

07

100% of paper-based cartons to be FSC-labelled

This target aims to build upon the 80% target for 2015

Retailer Commitments



RETAILERS FORM A
VITALLY IMPORTANT
AND INFLUENTIAL PART
OF THE DAIRY SUPPLY
CHAIN AS THE DIRECT
LINK TO CONSUMERS



Retailers are working alongside dairy manufacturers to develop increasingly close working relationships with dairy farmers. Supporting the Dairy Roadmap vision of a whole supply chain initiative, retailers are active and dedicated partners, carrying out a wide range of activities to help the sector meet its targets. For example:

- Conducting carbon footprint assessments on supplying farms
- Conducting water use assessments
- Running farmer workshops on a range of efficiency and environmental issues
- Conducting on farm biodiversity impact assessments

In the following pages you can find statements of commitment from the retailers that are involved in and support the Dairy Roadmap. In addition, a summary of supporting activities for each of the retailers can be found on the [Dairy Roadmap website](#).

“ASDA is committed to the sustainability of the British dairy sector and the objectives of the Dairy Roadmap. Our business founders were dairy farmers and we value this heritage. The dairy sector represents one of the most successful and dynamic parts of the ASDA food offer.”

The **co-operative**

“The Co-operative is proud to support the aims and vision of the Dairy Roadmap. Through The Co-operative Dairy Group launched in August 2011, we are committed to supporting our dairy farmers and are working in partnership with them to improve the environmental impact of dairy processing.”



“At M&S we are committed to becoming the world’s most sustainable retailer by 2015 and our eco and ethical plan, Plan A, is central to the way that we run our business. An important part of this activity is our M&S Farming for the Future programme which sees us working closely with our farmers to adapt to challenges, improve technical efficiency, environmental management and ethical practice. We are, therefore, proud to support the ongoing aims and objectives of the Dairy Roadmap.”



“Protecting the environment whilst maintaining a steady supply of food is important to all of us and that’s why Morrisons are proud to publically support the aims and objectives of the Dairy Roadmap. Dairy products are a staple purchase for our 11.5 million customers and we want to do everything we can to help our farmer suppliers take steps to reduce the industry’s carbon footprint.”



“We believe that the work of the Dairy Roadmap Taskforce, and the objectives set out in the Roadmap can play an important role in ensuring the long term sustainability of the UK Dairy Industry. The Roadmap can also play a role in establishing the UK Dairy Industry as a global leader in environmental best practice. We are committed to playing our part in the Roadmap, supporting our suppliers’ move towards a cleaner and greener supply chain.”



“At Waitrose we are committed to reducing the environment impacts of all our products and activities and are therefore proud to publicly support the ongoing aims and objectives of the Dairy Roadmap. Dairy foods represent a significant proportion of the products found on our shelves and taking action to reduce their impact is therefore a key priority for us and one we take most seriously.”



For further information about the specific activities retailers are undertaking to help the sector meet its targets please see the Dairy Roadmap website.



Looking ahead



WE ARE CONTINUING TO
DEVELOP NEW SCIENCE
AND BETTER SYSTEMS OF
MEASUREMENT IN RELATION
TO ENVIRONMENTAL IMPACT

In 2010, DairyCo and DairyUK joined forces with the Carbon Trust to produce guidelines for the carbon footprinting of dairy products. Similarly, we are actively involved in developing improved methodologies for water footprinting and for life-cycle analysis so that the industry can be aware of, and work to reduce, its environmental impact.

Often this involves international collaboration. New research has recently been commissioned to assess the nutritional, environmental, and value-for-money benefits and trade-offs from the inclusion of dairy in the GB diet.

We are striving to increase the efficiency of animal production, with ongoing trials to investigate how best to improve feed efficiency (converting feed to milk as efficiently as possible), as well as researching the use of alternative sources of plant proteins for use in animal diets. The dairy industry is committed to pursuing the responsible sourcing of soya

currently being imported into the UK, as well as conducting research and development to investigate the extent to which soya use in dairy cow diets can be reduced. The dairy industry, via the trade association Agricultural Industries Confederation, has developed a statement of intent in conjunction with Defra to work towards achieving 100% sourcing of credibly certified palm oil by the end of 2015.

In addition to our work with British retailers, we are working to involve foodservice companies in supporting the aims and objectives of the Dairy Roadmap.

The work that we are doing within these areas, in addition to the time-bound targets that we have set out in this report, reflects our desire to make our environmental sustainability focus as robust and far-reaching as possible.

The next formal Dairy Roadmap Report will be in 2015.

An external view



OUR DAIRY INDUSTRY WORKS
BETTER WHEN IT WORKS
TOGETHER AND WE SHOULD BE
PROUD OF THE NEW AMBITIOUS
DAIRY ROADMAP. THE SMARTEST
SECTORS KNOW THEY MUST
MINIMISE THEIR IMPACT ON THE
ENVIRONMENT TO MAXIMISE
FUTURE PROFITS.

David Heath CBE MP
Minister of State for Agriculture and Food

As we can see from this Report, the British dairy industry is working responsibly to mitigate its environmental impact & providing for a more sustainable future.

This Dairy Roadmap Report and supporting case studies provide a fantastic platform for the British dairy industry to not only make a case to customers and consumers to sell more British dairy produce in this country, but also become serious players on the global marketplace.

Defra will provide whatever assistance, support and facilitation it can for this key industry to sell more British products at home and abroad.



David Heath CBE MP
Minister of State for
Agriculture and Food

Delivering the Dairy Roadmap



THE DAIRY ROADMAP
OPERATES THROUGH
TWO DISTINCT BODIES:
A STEERING GROUP AND A
WIDER TASKFORCE.

The steering group is focused on checking and evaluating against the set targets and benchmarking what we are doing against global environmental best practice to ensure that we have the right stretching targets for the future. This group also has lead responsibility for production of the Dairy Roadmap report and its supporting materials.

Current members of the steering group are:

- Chairperson: Kate Allum, First Milk
- Paul Flanagan, First Milk
- Ray Keatinge, DairyCo
- Richard Laxton, Arla Foods
- Luke Ryder, National Farmers' Union
- Richard Warren, Dairy UK
- Dr. Karen Wonnacott, BOCM Pauls

Taskforce Members

The wider taskforce is made up of various industry stakeholders including farming representatives, retailers, dairy processors, Government and industry partners. It meets twice per annum.

The terms of reference for the taskforce state its objectives as:

- Support and encourage industry adoption and implementation of the Dairy Roadmap at the respective levels of the dairy supply chain.
- Review targets and implement initiatives in light of new scientific knowledge and industry performance.
- Monitor performance against targets.
- Agree major communication activities relating to the Dairy Roadmap.

Post farm-gate, the scope of the Dairy Roadmap applies right across the UK. Additional, regionally-focused farm sustainability policies, consistent with the aim and ethos of the Roadmap, may also be implemented in devolved administrations in Wales, Scotland and Northern Ireland.



A Forfarmers Company



Funding

The broad-based support for the Dairy Roadmap is apparent in the make-up of funders for this Report. The money came from dairy processors, farming bodies, feed and packaging companies.



A ForFarmers Company

