Sustainable manufacturing

While Second Nature fabrics embody the heart and soul of environmental design, all our fabrics bear the hallmark of sustainable manufacturing. We've been accredited to ISO 14001 since 1996 and have been recognised for environmental best practice.

Since October 2004 we have been using Green Electricity at our UK manufacturing sites derived from renewable and sustainable sources such as windpower, hydro and landfill gas. Our main manufacturing site is equipped with intelligent lighting which automatically adjusts the brightness in relation to the natural light available.

We have been using a natural on-site borehole since 1995 which provides water for all fabric scouring purposes. A borehole saves the energy required to pump water through the mains network and does not need to be treated to drinking water quality. Investing in a Jetvac continuous scouring machine reduced water usage from 280,000 litres per day to 190,000 litres – a reduction of 33%.

Our European manufacturing facility benefits from green heating generated from burning waste wood, rainwater purification for factory sanitation, and an air re-circulation system which recycles 75% of heat.

Environmental Policy

We've made some great progress over the years, but we realise it never stops and there's always more to do. That's why we've a detailed environmental policy which is regularly reviewed in light of changing needs and priorities. We're currently focused on continued waste reduction to landfill, energy management and evaluation of cleaner transportation fuels, sustainable sourcing and product development, and additional recycling/re-purposing of yarn and fabric.

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camira

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sustainability is Second Nature

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At Camira sustainability is Second Nature… It's not just our registered trademark to identify fabrics designed with sustainability in mind. It's part of our corporate DNA and has been for over 10 years… We've long since faced up to our responsibility as a manufacturer to take action on the environmental issues which are relevant to us. We started working initially on more sustainable manufacturing initiatives, targeting reduced water and energy usage. Then we turned to environmental product design. We've made great strides. There's still more to do.

This brochure signals our commitment to environmental advancement and sets out in detail the closely defined environmental product categories that we designate Second Nature.

"Designers are in a powerful position to create a better world… Or to contribute to further destruction" (Victor Papanek, Design for the Real World)

We don't just want to create products which look great, we've a responsibility to understand and minimise their full environmental impacts. So we have careful choices to make in terms of raw material selection, process routes, technical specifications and chemical performance enhancements. And there are different approaches, including extreme longevity to avoid replacement (24/7+ fabric), removing the need for additional components (net suspension fabrics without foams), knit to fit covers with no waste (Teknit fabrics), and, of course, Second Nature branded fabrics which meet closely defined environmental criteria: recycled, renewable & compostable, and climate neutral.

second nature™
recycled

Second Nature - Recycled

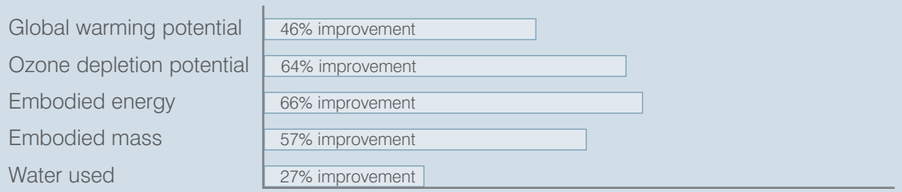
We're all learning to recycle more to reduce landfill, save virgin raw materials and give our waste materials a new lease of life as newly made products. At Camira we re-use or recycle 50 – 60% of our waste, with fabric selvedges going into carpet underlay and loft insulation, non-reusable yarn cones being made into plastic buckets and pallets, and 100,000 yarn cones being re-used every year.

Our Lucia fabric range is made from 100% recycled raw materials consisting of post-industrial waste polyester created during the manufacture of polyester yarn. Rather than being scrapped and ending up in landfill, this waste goes back into the loop and is melted down and re-extruded into fibre. The added benefit is that we don't draw on virgin fibre derived from non-renewable petroleum resources. Since the introduction of recycled yarn in the Lucia range we have diverted over 1,000 tonnes of yarn waste away from landfill and saved the same amount of virgin fibre. Just think – that's the equivalent weight of over 750 Volkswagen Golfs!!

Lifecycle assessment – recycled versus virgin polyester

Life cycle assessment analyses the full environmental impacts of a product, from its very creation until it's either disposed of or recycled. A standard LCA examines things such as the amount of energy needed to make a product, how that process affects the ozone layer and what kinds of waste materials the process creates. The result of the LCA on recycled polyester fabric provides concrete proof that recycled is better than virgin - not just a bit but by far. Here are just some of the main aspects covered:

- **Global warming potential** - the release of gases such as carbon dioxide and methane which contribute to global warming
- **Ozone depletion potential** - the release of substances that contribute to destruction of the earth's ozone layer
- **Embodied energy** - amount of energy contained in both the raw material and the product, and the amount of energy required to manufacture the raw material and product
- **Embodied mass and water used** - the total mass and water required to produce, recycle and/or dispose of raw materials and products



Source: Interface Research Corporation (2002) : Recycled polyester fabric versus virgin polyester

Second Nature - Renewable & Compostable

We all understand that if we continue to consume non-renewable resources then one day they'll run out. Using renewable materials means that we can be assured of their supply both today and in the future. And many materials that are made into fibres are renewable on an annual basis, which is true for wool shorn from sheep typically once a year, or for some of the new fibre types we are working with including nettles, bamboo, hemp and flax.

Pure New Wool

Wool is one of the most famous of all natural fibres and is probably the oldest known textile in the world. It's a unique natural performance fibre thanks to its many advantages, not least of which is its environmental profile:

- Environmentally it is 100% natural, renewable and sustainable. It is also fully bio-degradeable and wool fibre has even been used as fertiliser on arable land. Today, we still send our cropped fibres for use as animal bedding on local farms.
- A snapshot from a detailed LCA by the New Zealand Merino Industry shows the energy consumption for wool fibre manufacture to be far less than for synthetic fibres.

Textile	Energy consumption (kWh/kg of fibre)
Nylon	69.4
Polyester	34.7
Polypropylene	31.9
Viscose	27.8
Wool	17.5

Source: Barber and Pellow (2006) : Lifecycle Assessment : New Zealand Merino Industry, The AgriBusiness Group

- Wool is a natural protein-based fibre which will completely decompose for back to earth compostability. Under the specific temperature and relative humidity conditions of BS 6085 : 1992, the decomposition of wool is confirmed in less than 28 days.
- Camira's Second Nature wool collections use fibres sourced from cross-bred New Zealand merinos, producing a finer micron wool with superb softness, whiteness and handle. New Zealand is renowned not just for its clean, green and unpolluted environment, but for its stringent farming practices with the prohibition of toxic and persistent organochlorine based pesticides in favour pesticides using biodegradeable chemicals.

Did you know?
The fleece from a typical sheep produces 4kg of fibre which can make up to 8 metres of fabric

Second Nature - Climate Neutral

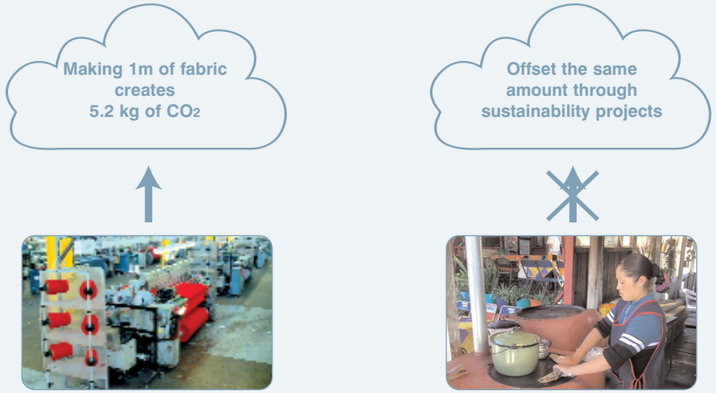
Evidence is now "unequivocal" that humans are causing global warming
(United Nations Report, 2 February 2007)

Humans have added 2.3 trillion tonnes of CO_2 to the atmosphere in the last 200 years. Half this amount was added in the last 30 years alone.
(World Resources Institute)

Hard scientific evidence is stacked up. We're all adding to climate change. We need to alter how we live our lives and do business. That's why we're improving our production processes to reduce our CO_2 emissions. That's why we've been using the offset principle to balance CO_2 emissions produced by employee travel and inter-site product movements for over 10 years. And that's why we have specific fabrics which customers can choose and specify safe in the knowledge that there is no effect on global warming and climate change.

The principle of offsetting

Offsetting is a process which counteracts and therefore neutralises the impact of climate change caused by CO_2. Whatever steps we take to improve our business processes, it's inevitable that we'll still consume energy and produce some carbon dioxide emissions. Carbon offsetting is a way of compensating for the emissions produced with an equivalent carbon dioxide saving.



second nature™
climate neutral

What we offset

We have carefully analysed the carbon dioxide emissions created by the different processes involved in making a finished fabric from a New Zealand merino fleece. This encompasses fibre manufacture, fabric manufacture, dyeing and finishing, plus all transportation which occurs from raw material to finished product. Equivalent carbon dioxide reductions are then made by investing in a portfolio of projects which target renewable energy, energy efficiency and forest restoration.

Who we work with

As our offset provider we have chosen the specialist UK organisation Climate Care which was set up in 1998 as a company limited by guarantee, dedicated to tackling climate change by reducing greenhouse gases in the atmosphere. As well as working direct with individuals, Climate Care work with over 200 businesses including many blue chip organisations such as British Airways, Cooperative Bank, Barclays Bank, Keycamp Holidays, Land Rover, Times Newspapers, and Lastminute.com.

climatecare

The Climate Care Approach

Climate Care manage a portfolio of high quality CO_2 offset projects around the world, which as well as reducing levels of carbon dioxide bring a range of other benefits to local communities such as poverty alleviation, health improvements and increased bio-diversity. Some core principles include:

- **Additionality**
  Climate Care will only fund a project if they can be confident that it would not have gone ahead without their assistance.
- **Kyoto Protocol**
  Climate Care are committed to reducing CO_2 emissions beyond those that have already been promised under the Kyoto Agreement.
- **Real reductions ("verification")**
  Climate Care validate claims in CO_2 reductions through third party reports and on-going project management.

Climate Care projects

Climate Care's projects focus on sustainable energy and energy efficiency, plus they have one forestry based project restoring indigenous rainforest in Uganda. All projects are covered in more detail, some with video clips, on Climate Care's website at **www.climatecare.org**. Here are just three examples:

Sustainable energy

- bio-fuel school stoves in India

In the Punjab region schools usually cook their food on expensive liquid petroleum gas - a fossil fuel. A local engineer is now funded by Climate Care to build stoves that run on low emission briquettes made from crop waste. These are sold to schools on a hire purchase agreement, paid for out of savings on fuel bills. Local farmers, who can now sell their crop waste to briquette makers, also benefit from a new source of income.

1 bio-fuel stove = 39 tonnes CO_2 saved per year

Energy efficiency

- energy efficient lamps in the Marshall Islands

In the western Pacific Ocean, the Marshall Islands are dependent on imported diesel for their electricity supply, most of which is used for household lighting. Climate Care is working with the Majuro Energy Company to install 10,000 highly efficient compact fluorescent lamps. Over its lifetime of 4 – 6 years, each lamp is calculated to save the equivalent of driving 3,000 miles in a diesel car (at 50mpg).

1 energy saving bulb = up to 1.75 barrels of oil

Rainforest restoration

- helping climate and primate in Uganda

In Kibale National Park in Western Uganda, Climate Care is funding the re-establishment of a rainforest – much of which was destroyed in the 1970s – with over 30 native species of trees. When mature, they will be home to a number of endangered primates, including chimpanzees. The project is also generating jobs for some 400 people.

1 hectare of rainforest = 400 tonnes CO_2 saved per year