

Sustainability Optimisation programme

Driving Sustainability for Our Future



Sustainability: Global challenges need our solutions

Having a sustainability agenda is no longer a foreign concept within modern organisations, yet sustainability has long been synonymous with the sole aspect of targeting resource efficiency driven by cost savings. Today, we're moving towards a world where more is expected and needs to be done – where global sustainability targets have been recognised and outlined in the Paris Agreement at COP21 and the UN Sustainable Development Goals – setting not only the consensus of our future direction regarding climate action but also setting concrete and measurable goals.

At Ricoh we recognise that the hardest part is to turn your actions into something sustainable itself. Therefore we help our customers and partners by leveraging sustainability as a source for innovation - by introducing new ways to rethink how you operate your print infrastructure, reinventing the flows of information that are the lifeblood of your company and by making sure the products and services you use are engineered towards preserving and building upon a better future. Sustainability is no longer a cost saving but rather a continued demonstrable result towards your bottom line and will be your part in meeting our shared global challenges head on.

Why choose Ricoh?

To achieve these goals is something that can't be done in isolation. Companies often reinvent their entire supply chain and rely on their suppliers and partners to join them in this change. Ricoh has been an early pioneer acting on sustainability, and the change that drives it, since its inception in 1936. Over the years our practice has evolved from setting up a dedicated environmental protection office in the 70s, to creating recognised business theory frameworks such as the 1994 Comet Circle Principle. To this day, Ricoh is encouraged for its efforts having received numerous international awards. Awards aside, we aim to pass on our learnings and share best practice to help you tackle those challenges and make a difference.

Sustainable environmental management

Our definition of a sustainable society balances three elements, namely our Planet (environment), its People (society) and Profit (economic activities). Within our approach we address four pillars where we can bring about change - but our objective is twofold: Reducing the impact on the environment is not enough, we aim to get our activities to a level where the Earth's self-recovery capabilities can manage.

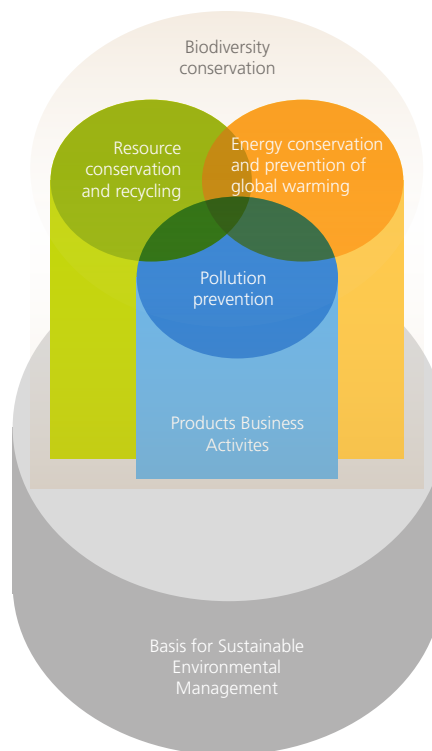
To commit to the following:

- Conserving energy and preventing global warming
- Conserving and recycling resources
- Preventing pollution
- Preserving biodiversity

We strive to achieve the reduction of our total lifecycle of CO2 emissions by 30% by 2030, and by 100% by 2050 (base year 2000).

Not only are we replacing materials in our product that are at a high risk of depletion (e.g. crude oil, copper and chromium), we're also on track to reduce new input of resources by 25% by 2030, and by 93% by 2050 (base year 2007).

We're also tackling pollution by minimising the risks of chemical substances throughout the product lifecycle by 2020 (in compliance with SAICM)



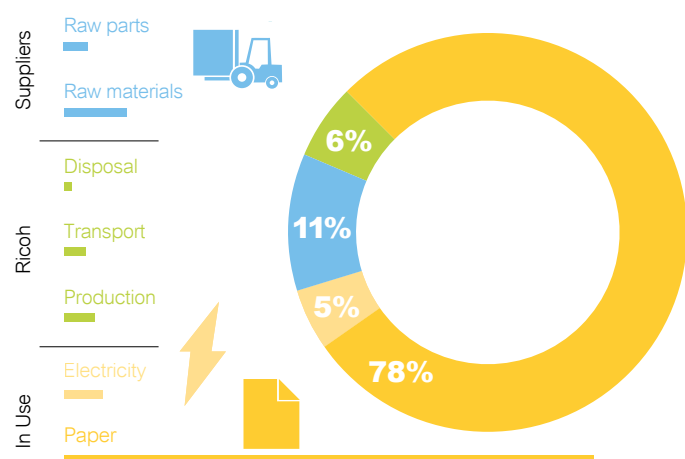
4 pillars of Ricoh's environmental management

Transparency of the environmental impact

We've set our targets, but sustainability is truly all encompassing and unlike what is often perceived, negative environmental impact is not always something that largely occurs in the production phase.

A Life Cycle Analysis (LCA) shows us that the within the lifespan of a typical Ricoh product*, the largest impact – more than 60% - occurs in the In-Use phase with paper accounting for 78%. Traditionally, the In-Use phase is solely controlled by customers, however it's easy to literally leave anyone to their own devices.

This is why we take the responsibility and commitment to help our customers not only optimise and get the most out of their infrastructure and investment but also to operate a sustainable business model that is innovative, within a sustainable society.



Life cycle analysis of a typical Ricoh core product

* Based on an MP C4504SP device.



Introducing Sustainability Optimisation programme

Within our sustainability portfolio of products and services that address the challenge of energy efficiency, we offer the Sustainability Optimisation Programme. This programme is a service adopting a consultancy-based approach to help you achieve a measurable reduction in your CO₂ emissions by optimising your document production and reducing your Total Cost of Ownership (TCO) within the In-Use phase.

While demonstrating the environmental impact of the In-Use phase, the Sustainability Optimisation programme offers transparency from the start. It gives insights into the carbon footprint of your Ricoh office equipment at the stages of raw materials extraction, manufacturing and assembly and distribution to the delivery destination, the so-called Pre-Use phase (1.)

(1.) The Pre-Use data is based on the EcoLeaf environmental label driven by the Japanese government that uses the LCA method to quantitatively show environmental information of products through life cycle stages from the extraction of resources to manufacturing/assembly, distribution, use and discarding/recycling, in accordance with the ISO 14040 / 14044 standards <http://www.jemai.or.jp/>

A validated approach

Our approach consists of five steps that will help you to achieve an average reduction of 34% in carbon emissions and 29% in your TCO. To complete the path towards a zero carbon footprint, we analyse, design, implement, govern and neutralise. This programme is founded on a vast pool of experience in analysis and implementation, having completed more than 10,000 green audits since its launch covering both SMBs and large corporations across Europe. Through these insights, we have continuously innovated and evolved to accommodate for the needs of our customers by improving our sustainable hardware product lines, tailoring software designed to optimise workflows, reduce waste and overflow and by bringing about change management by facilitating environmental awareness with the use of our solutions.

Tested and proven

In addition, the Sustainability Optimisation programme has been accredited by SGS complying with ISO standards and recognised as a factual way to calculate greenhouse gas emissions from document printing in a transparent and reproducible way.



Step 1:
Analyse



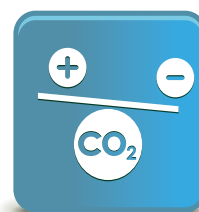
Step 2:
Design



Step 3:
Implement



Step 4:
Govern



Step 5:
Neutralise



Step 1: Analyse

Consultancy requires a thorough understanding. The beginning of the Sustainability Optimisation process in document-based workflows consists of a detailed analysis of the current state. All relevant information about the document output environment is collected and quantified by an audit and interviews with end users.

Tailored scope

Ricoh consultants perform bespoke customer audits by collecting and quantifying all relevant information on current TCO and carbon emissions. The various pieces of data to collect might cover energy and paper bills, number, type and location of output devices etc. The scope of the project will also be determined by existing corporate policies, goals and restrictions, combined with defined needs and concerns.

From this data, Ricoh derives a baseline, a key component in understanding the extent of the current carbon footprint..

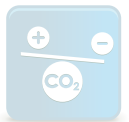
Energy consumption

The main contributors to CO₂ emission are energy and paper consumption. The visualisation of the use of energy includes a detailed description of the existing document output infrastructure and how it impacts on the environment. Any OEM*'s existing hardware and connectivity products and the networking approach are all taken into consideration.

Floor plans will show where devices are currently placed, and each device's usage is quantified.

Basic questions will be posed: can the company consider switching to the renewable energy? Answer to those can result in substantial savings in many cases.

* Original Equipment Manufacturer



Paper Consumption

Are all document workflows optimally streamlined? Investigation of the document environment and production activities identifies where improvements can be made. Paper-intensive processes can be redesigned, and current document output habits adjusted. All activities are benchmarked against best practices, which may go as far as redesigning complete document workflows. Simply not printing every document single-sided by default may already lead to tangible paper reductions.

Total CO₂ emissions

The results of both energy consumption and paper usage are fed into Ricoh's externally validated carbon calculation system. The calculation results in a quantitative value that becomes the benchmark or baseline for environmental measurement. Typically the calculation is provided on a fleet or site basis as a measurement of the overall current fleet environmental impact.

Thorough analysis of current hardware and workflows makes cost structures transparent and reveal where improvements are to be made: vision by insight.



Step 2: Design

The outcome of the assessment provides the basis for the optimisation design, a plan that clearly identifies key areas for improvement including TCO and CO2 reduction targets. Ricoh may also provide expected standards which have been identified in specific industries and vertical markets.

Blueprint

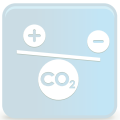
The optimisation design will contain environmental recommendations based on industry best practices, aligned with your environmental policies and interests. The design also incorporates your own management commitments and ambitions relating to process efficiency, cost optimisation and productivity improvement.

Adopting the recommendations in the optimisation design will have an immediate impact on environmental sustainability. The recommendations are all of a pragmatic nature and the placement of the most environmentally efficient products is calculated for each site, as well as modes of usage.

The office

New digital floor plans will show where devices should be consolidated, replaced or made redundant. But hardware alone is not sufficient. The issue of how this hardware is utilised during the average day at the office is an essential factor.

Ricoh can therefore provide bespoke training programmes to raise your environmental consciousness. A Change Management Plan can be part of the efforts to bring about a change in attitude, complete with communications and measurement procedures for organisational education and accountability. The end-result is that you know how to operate devices in the most sustainable way.



Quantified promises

Our consultants will draw up a report using the results of the analysis as baseline data. To make the report more tangible, the carbon footprint of the In-Use and Pre-Use phases are visualised, including energy, paper and CO2 savings projections.

Integrated recommendations

To make the transition as smooth as possible, all recommendations are aligned with existing sustainability goals and objectives. We even provide the appropriate transaction documentation for ordering the devices that will be deployed. Immediate promises:

- Improved insight into current operating procedures..
- Tighter financial control resulting from accurate data and quantified practices.
- Clear blueprint for sustainable document infrastructure.



Step 3: Implement

The elements identified in the Analyse and Design stages are leveraged to ensure a positive impact on power and paper consumption and resulting overall CO₂ emissions. In the Implementation Phase the plan is applied: devices are installed and set up to work as intended, end-users are given training to enhance their environmental awareness and to make them understand the cost and sustainability impact of document printing.

Offices will be transformed into efficient workplaces through the placement of the most environmentally efficient products. This extends down to the detailed level, where increased double-sided printing has an impact on paper saving. All newly placed devices will incorporate additional saving behaviour such as power management, resulting in savings on energy bills. In addition to these immediate results, all devices and consumables are covered by recycling and disposal initiatives, again lessening the environmental load.

Sustainable equipment

More specifically, the Ricoh equipment and software inherently offer eco-friendly features, provided that they are set up intelligently. Reductions are achieved by:

- Consolidating multiple devices (copy, printer, fax, and scanner) into one multifunctional printer (MFP).
- Hardcopy output reduction via duplex printing and N-up function.
- Reducing misprints by using on-demand printing function.
- Reduction of overall electricity consumption.
- Device recycling, disposal and re-manufacturing.



- Toner and consumables recycling.
- Paper waste elimination through software solutions.

Sustainable behaviour

Optimising the fleet alone is not enough. Users need to be made aware of how to operate devices in the most energy-efficient manner and how to print in the most sustainable way.

Ricoh has built up a vast pool of expertise. Decades of experience in sustainability projects have resulted in invaluable knowledge of how to create awareness of sustainable printing operations.

Sustainability training

A blend of training methods and technologies are available for both end users and administrators on all Ricoh devices and Ricoh software solutions. Training formats and schedules are of course customised and based on specific needs.

As a result, you'll be able to obtain maximum benefits from all products and/or solutions, in terms of both cost and the environment.



Step 4: Govern

It is possible to integrate remote diagnostics and monitoring software into the new document infrastructure, making it easy to track usage data. By comparing actual CO₂ emissions against the set targets on an ongoing basis, interventions can be made where appropriate. This ensures that performance will stay up-to-date, and CFOs are pleased to have a firm grip on sustainability.

Continuous tracking

The goal is to achieve continuous sustainability improvement on a long term basis. Ricoh's pragmatic view is that there is only one way to reach this goal, and that is to start by measuring the results. The actual sustainability performance of the newly optimised fleet and processes is therefore monitored continuously and compared with baseline and target. Periodic reports provide full transparency with regard to the sustainability performance of the total fleet and user behaviour. As a result, all possible opportunities for optimisation can be identified and acted upon, leading to cost savings and a positive environmental impact by reducing CO₂ emissions.

Benchmarking, correcting and replicating

The measured CO₂ emissions calculated for power and paper consumption are compared with the sustainability targets formulated in the Design phases of the Sustainability Optimisation Programme. If any discrepancies are detected between them, appropriate action - such as user training, device settings or replacement of devices - is taken to correct these discrepancies. Ricoh will analyse the data in order to understand the cause and, where applicable, recommend actions for improvement in cases where negative variances are observed against defined targets.

It can also happen that the actual new CO₂ performance of departments or workgroups outperforms the target numbers.



In such cases, Ricoh will analyse the data to identify the underlying cause and any opportunities for replicating it. Any performance which is better than expected will thus be maintained and, where applicable, even expanded.

Calibration

While evaluating the results, we also evaluate the targets. The actual performance may be better than expected, or changed circumstances could affect the performance in various ways. In both cases, the targets will be redefined. This continuous process results in a constant improvement where others might be satisfied with a flat line.



Step 5: Neutralise

You can be confident that your document workflow leaves the smallest carbon footprint possible through fleet and process optimisation, placement of energy-efficient equipment and improved user behaviour. The aim is to leave no footprint at all. This 'zero footprint' can be achieved with Ricoh's Sustainability Optimisation programme through a carbon offset scheme.

Sustainable from the start

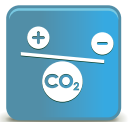
Ricoh takes all possible steps to reduce the environmental impact of activities within its control. Right from the initial concept stages we adopt eco-optimised principles for product designs, parts procurement and manufacturing all the way through logistics, sales and service, recycling and waste management.

In addition, Ricoh designs sustainable workflows to ensure that the eco-friendly products pay off as intended, minimising the carbon footprint and cost at the same time. But emissions can never be eradicated entirely within an office. There will always be a residual environmental impact to deal with.

Offsetting residual environmental impact

Carbon emissions are unavoidable, even with the cleanest processes. It is exactly the task of the Sustainability Optimisation programme to help customers initially optimise their document infrastructure leading to reduced environmental impact and only afterwards carbon balance remaining carbon footprint. But the environmental impact goes beyond the In-Use phase. In order to offer a completely carbon neutral product and related document processes Ricoh's Carbon Balancing service allows to offset both Pre-Use and In-Use phases. The processes in the Pre-Use phase as resources extraction, manufacturing and logistics generating the so-called Scope 3 emissions are in scope for carbon offsetting next to the environmental impact of the In-Use phase.

There are several ways to counteract the remaining - significantly reduced - environmental impact. A common method for climate compensation is carbon emissions offsetting with carbon credits.



The scope of the remaining unavoidable carbon footprint from document management covers the processes during the Pre-Use phase, the paper and power use of each device and maintenance including parts, supplies and service engineers' travel in the In-Use phase.

This remaining impact is translated into hard figures, and the accuracy of the calculation methods therefore becomes even more crucial. The calculation method has therefore been assessed and accredited by SGS. The Carbon Credits used for offsetting are generated by UNFCCC registered projects.

Ricoh offers a choice of Gold Standard carbon credits from the following projects:

Solar cook stoves in China: The use of efficient stoves aims to reduce carbon emissions by allowing families to cook the same amount of food using renewable energy. This project fights climate change and helps improve the lives of the local people.

Clean energy project in Thailand: The project offers carbon credits generated through capturing methane from waste water to generate electricity and prevent local air pollution - ultimately leading to sustainable economic and environmental development.

Carbon Balanced Certificate

Customers will receive a Ricoh certificate stating that the remaining environmental impact of their office equipment is offset either for the lifetime of your contract with Ricoh or can be renewed on the annual basis. You can demonstrate the certificate of Carbon Balancing as a proof your responsible attitude towards the sustainability issues or used as evidence for official audits.



Discover our portfolio

Ricoh Sustainability Management Services has a focused portfolio of sustainability services, products and product features that will help you to achieve energy efficiency, resource conservation and an improved human wellbeing.

This can range from optimising your current infrastructure for energy and resource efficiency, to fulfilling carbon-balanced print services, remote diagnostics & monitoring, including product timers, ensuring user safety and security or an end-of-life recycling programme – and much more.

Energy efficiency

The following products and services have been designed to help businesses optimise energy usage and running costs:

- Sustainability Optimisation Programme - A five-step consultancy process that helps achieve immediate, measurable reductions in document workflow CO2 emissions.
- Carbon Balanced Production Printing - A three-step consultancy approach that helps production print service providers analyse, optimise and neutralise carbon emissions.
- Energy efficient products - Through innovations like Quick Start-Up technology, low energy sleep mode, a short recovery time from sleep to operating mode and a reduced toner fusion point, many of our products are market leaders in energy efficiency.
- Energy management tools and software - Many of our products come with built-in and add-on features designed to boost energy efficiency.

Resource conservation

Ricoh's sustainability offerings include a rich portfolio of Reduce, Re-use, Recycle products:

- Pre-owned devices and parts & supplies recovered for post-consumer life
- End of life management - Easy return of end of life products and used consumables
- Smaller, lighter parts - use less resources to develop robust devices
- Alternative materials (e.g. post-consumer waste, biomass etc. for device components and consumables)
- Resource efficiency built into our products (High speed duplex functionality / Staple-less finisher)
- Print&Share Eco print driver - reduce paper usage and avoid waste
- Recycled and sustainably sourced paper

Human wellbeing

Ricoh's human well-being offerings include products and services addressing inclusivity, end-user well-being, comfort and security:

- Through a combination of Ricoh secure hardware, software and technical expertise, we help our customers improve print security and confidentiality
- Pre-owned products for developing countries
- Inclusive design and accessibility solutions to meet the requirements of any end-user
- User/operator well-being - products and services that address the operator's health, safety and well-being



Sustainability Optimisation in Practice

Vodafone's Mobile green IT printing initiative.

The Challenge

To reduce the environmental impact of its office print environment, Vodafone launched a Green IT 'Less Paper Office' initiative which aimed to achieve:

- Smaller carbon footprint.
- Lower Total Cost of Ownership.
- Improved service delivery.
- Increased security.
- Managed global print service.

The Ricoh Solution

Ricoh has developed an eco-efficient print infrastructure for the group supporting Vodafone's flexible work and mobility strategy including developing:

- Green office environmental survey.
- Global/local project management.
- Standardised best-fit technology.
- Dedicated on-site service support.
- Detailed global/local reporting.

The Results

Global rationalisation and standardisation has increased the employee to device ratio by 300% (from an average 20:1 to 60:1), has reduced paper consumption by up to 75% in some regions and has led to an average 50% reduction of annual office print cost per user. Additionally, it has helped the company achieve significant and sustainable reductions in its carbon footprint by almost 3 million kilograms per annum.

Ricoh green-office solution helps world leading industrial company AkzoNobel to reduce its global carbon emissions.

The Challenge

AkzoNobel's print and reprographics infrastructure had grown organically. A fleet of stand-alone printers was proving expensive to run and provided little control over usage. Print volumes were growing and, with the company using inefficient equipment, carbon emissions too were higher than necessary.

The Ricoh Solution

Ricoh analysed the existing infrastructure, auditing print volumes and recording green metrics such as energy consumption, so we provided:

- Ricoh green-office solution.
- Environmental print audit.
- Energy efficient MFPs.
- Managed print environment.

The Results

By removing inefficient printers and directing print to more energy-efficient multifunctional products, the solution is helping the company reduce its global carbon emissions and saving AkzoNobel money. In fact, print and reprographic expenditure is down by 18%, paper use is reduced by 15% and they report a significant and sustainable reduction in their carbon footprint.



www.ricoh-europe.com

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