Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

Kleen Strike (UK) Ltd is a remanufacturer of toner printer cartridges and refurbishes used laser printers for re-sale. The company has been in operation for over 30 years and offers a range of products including own brand remanufactured toner cartridges. Kleen Strike has been ISO 9001:2000 accredited since 1997 and awarded 'Remanufacturer of The Year' by The Recycler, a trade magazine to the remanufacturing industry. The company is a founding member of ETIRA (European Toner and Inkjet Remanufacturing Association) holding their 'Code of Conduct' certification and is also a member of the UK Cartridge Remanufacturers Association (UKCRA) of which their Director Laura Heywood has been its Secretary for the past 20 years. The company has been audited through independent studies and its toner cartridges reported to be of "pristine quality". Kleen Strike has maintained this position through the years by rigorous testing and quality control procedures and a workforce that have been with them for many years. The company supplies all types of printing media, including toners, inkjets, and printers to small and medium-sized enterprises, public sector organizations, as well as large corporate customers, Educational bodies such as Schools, Local authorities and the home user. The company also offers a printer repair service either at their workshop or on-site. Kleen Strike recognizes that the future of manufacturing, which is a high value activity in the circular economy, is inextricably linked to environmental sustainability, reducing the consumption of virgin raw materials, and exploiting new areas of economic competitive advantage. The company moved to its new premises in January 2013. Kleen Strike prides itself on friendly helpful staff who go out of their way to find the right solution for each and every customer's printing requirements. Contact details: Kleen Strike Ltd, Pioneer House, Regent Street, Rochdale, Greater Manchester OL12 0HQ. Tel 01706 658582. Fax 01706 647440. Website www.kleenstrike.co.uk Email sales@kleenstrike.co.uk Contacts: Alistair Barker and Laura Heywood.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Sun 01 Jun 2014 - Sun 31 May 2015

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
United Kingdom

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

GBP(£)

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

Laura Heywood, Managing Director

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Other: The business, its employees and customers benefit	Other non-monetary reward	Other: Improved sales based on environmental credentials of the business and the environmental preferability of the products & services provided to customers	Kleen Strike (UK) Ltd is a small company (with only 7 staff) and there is clear communication about the ethos of the company to have as small a climate change impact as possible and to do what it can within its resources and capabilities to help and influence others particularly among the Original Equipment Manufacturers (OEMs) and component suppliers, as well as customers to take a similar approach. Kleen Strike (UK) Ltd is planning to implement an internal system for recording data for greenhouse gas assessment so as to improve the accuracy of future emissions assessments across the range of products and processes in the company. The emissions profile will be reviewed annually so that any changes in emissions can be monitored. This will allow an emissions baseline to be established, against which targets can be set and progress can be monitored. It is standard practice within Kleen Strike to: (1) reuse as many internal components still in good working order as possible, and if not suitable for reuse, to send the metals and materials for recycling (thereby avoiding materials to landfill), (2) collect all card and packing materials separately sending card for recycling and reusing internal packaging, such as blister padded toner cartridge bags, (3) collect waste toner from used cartridges and send for recycling, and (4) send damaged and unusable cartridge cases to independent plastics recycling facilities.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

A specific climate change risk management process

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	Kleen Strike operates (ie sells goods and services) only within the UK but imports internationally	3 to 6 years	The management of the company is pro-active in identifying risks and opportunities in relation to climate change risks and opportunities and these are discussed regularly at management meetings.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

The processes are applied in relation to the way Kleen Strike carries out its business and day-to-day operations. This ranges from selection and procurement of more environmentally preferable components to use in the company's products to investigation and selection of more environmentally preferable ways of handling waste at end of life. The business is actively involved in a wide range of activities to promote better environmental regulation as well as green procurement and design of products and services with lower carbon footprint.

CC2.1c

How do you prioritize the risks and opportunities identified?

Kleen Strike takes a pragmatic approach on the risks and opportunities identified in order to increase sales as well as influence positively those organizations with which it interacts. The business works closely with environmental regulators and is also part of national (UKCRA) and European (ETIRA) Trade Associations, both

of which are active in pursuing and advocating climate change issues in relation to printing and associated services such as extending end of life by the refurbishment of used printers and offering a reduced cost repair service by ways of a token/repair scheme package.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

Climate change is integrated into the business strategy through an active programme of carbon footprinting of the goods and services which the company provides and using the information to help customers understand the environmental benefits of the goods and services which they purchase. The company recognizes that its carbon credentials provide a strategic advantage to the business, because remanufactured products have a lower carbon footprint compared with corresponding new products. The company has commissioned carbon footprint studies which demonstrate the carbon advantages of using remanufactured toner cartridges and refurbished printers vs. new original toners and new printers vs. Managed Print Services.

In a published study commissioned by Kleen Strike, a comparative assessment has been made for an organization for three scenarios (Remanufactured, ITMS and PMS). Metrics such as the Total Cost of Operation (TCO) and Total Carbon Cost of Operation (TCCO) of the printer fleet were evaluated as well as the cost-per-page and the CO2e-per-page. The objective of the study was to reveal the cost and CO2e implications of each of the scenarios, thereby pointing the way to solutions, including hybrid REM-PMS solutions, offering the most appropriate solution given the printing needs of a particular organization. The study is important in that it illustrated the financial and carbon differentials of linear and circular scenarios, because these differentials are likely to act as powerful driving forces in the formation of the circular economy.

The three scenarios studied in the printer services study were: (1) Scenario based on remanufacturing - In this scenario the model organization purchases a number of new and/or remarketed printers and uses remanufactured laser toner cartridges. There is a mix of B&W and colour printers and simple multi-function devices across the organization, with the smaller to mid-size machines located in separate rooms and the larger machines in centralised (e.g. reprographics) facilities; (2) Scenario based on IT Managed Services - In this scenario the model organization is identical in every respect to that in the REM scenario except for the fact that the organization purchases its printers and extended warranty from the ITMS contract provider and these are maintained under the IT managed services (ITMS) contract provider. The ITMS arrangement requires the organization to purchase new genuine (OEM) cartridges; and (3) Scenario based on Print Managed Services - In this scenario the model organization is identical to that in the REM and ITMS scenarios in terms of its printing output (i.e. number of black & white and colour pages printed) but instead of a large number of smaller machines distributed throughout, the organization has a small number of heavy-duty Multi-Functional Devices (MFDs) located in centralized or common facilities. To allow for some localized printing by members of staff (e.g. for printing reports), the organization has supplemented its PMS printing with a small number of auxiliary printers under an ITMS contract. The auxiliary printers are assumed to be a mix of black and white and colour printers in order to cater for a diversity of printing. In the print services study commissioned by Kleen Strike, the lifetime electricity cost for the printer fleet was £2,110 in each of the REM and ITMS scenarios compared with a lifetime electricity cost of £2,970 in the PMS scenario. The electricity cost as a percentage of the whole life cost was 3.6%, 1.1% and 1.6% in the REM, ITMS and PMS scenarios respectively. The average cost-per-page (using a TCO framework) was £0.008 for the REM scenario, £0.025 for the ITMS scenario, and £0.025 for the PMS scenario. The average CO2e per page (using a TCCO framework) was 1.9 gCO2e for the REM scenario, 3.6 gCO2e for the ITMS scenario, and 3.5 gCO2e for the PMS scenario. The REM scenario has both the lowest cost and lowest CO2e footprint. Compared with the REM scenario the cost per page in the ITMS and PMS scenarios was 3.1 times higher. The CO2e per page (excluding paper) in both the ITMS and PMS scenarios was just under twice that of the CO2e per page in the REM scenario.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

No, and we currently don't anticipate doing so in the next 2 years

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Other: Regulations on waste and product ecodesign	Support	The company through its involvement with the national and european trade associations actively participates in consultations on environmental regulation (mainly around waste regulation and regulation on product eco-design) as well as the development of international environmental standards for products and the strategic development of the remanufacturing industry (eg through the recent APSRG Inquiry which resulted in the APSRG 'Triple Win' report on remanufacturing).	Kleen Strike through its trade association UKCRA has proposed that UK government use the printer cartridge sector as a UK pilot for remanufacturing (a leading sector in the circular economy) to introduce targets for remanufacturing and set an example for other sectors to follow. The pilot could play an influential role in illustrating how the UK's ambitious targets for greenhouse gas emissions reduction as set out in the UK Climate Change Act 2008 and subsequent carbon budgets laid down by the Climate Change Committee may be approached.

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
UK Cartridge Remanufacturing Association, European Toner & Inkjet Remanufacturing Association	Consistent	To promote the development of remanufactured products and associated practices that help to mitigate climate change as well as provide environmentally-preferable products for customers. Key drivers for remanufacturing relate to for example: • Remanufacturing as a solution to the UK landfill crisis • Remanufacturing as an intelligent response to virgin materials shortages & price fluctuations • Remanufacturing as an opportunity to address security of material supply • Remanufacturing as an opportunity to reduce greenhouse gas emissions (and remain with the UK's carbon budget as set by the Climate Change Committee) • Remanufacturing as an opportunity for job creation • Remanufacturing as an opportunity for international trade • Remanufacturing as an opportunity to build an environmentally preferable industry	Kleen Strike has commissioned various studies of carbon footprinting, including CO2 analysis of different options for printer fleet management. The studies showed that significant cost and CO2 reductions can be achieved through the use of remanufactured products and associated services.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

Yes

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

Yes

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

Kleen Strike (UK) Ltd has published several articles in magazines about the environmental benefits of remanufacturing and has participated in a world-first for the carbon footprinting analysis comparing remanufactured and new cartridges over many refill cycles. The study made a comparison of carbon footprints of short-life and long-life toner cartridges, comparing the carbon footprints of Original Equipment Manufacturer (OEM) cartridges with those of corresponding remanufactured cartridges. The carbon footprints were evaluated on the basis of actual profiles of components replaced during refilling cycles. The study of two remanufactured cartridge models shows that a new cartridge has an embodied carbon footprint of about 6 kgCO2e and a remanufactured cartridge has an embodied footprint of between 0.5 and 4 kgCO2e, depending on the materials and components replaced in a particular refill cycle. In the case of the average OEM cartridge, the carbon footprint is 5.8 kgCO2e and this is what a user would incur if they purchased a new toner cartridge. The average carbon footprint of the first three remanufacturing cycles for the average toner cartridge is 1.5 kgCO2e. The avoided emissions provided by the remanufacturing service for toner cartridges are therefore estimated to be on average approximately 4.3 kgCO2e.

Through the two trade associations in collaboration with I-ITC (USA) and supported by Static Control Components, a Queen's Award Company that sell cartridge components to remanufacturers, Kleen Strike was actively engaged as a stakeholder in the development of the EPEAT (www.epeat.net) standards IEEE1680.2 and IEEE1680.3. The U.S.-led EPEAT (Electrical Product Environment Assessment Tool) programme sponsored by the EPA (Environment Protection Agency) sets recommendations for public procurement criteria: public organizations can use them for guiding their purchase of products that are EPEAT-registered. Despite challenges, the remanufacturing industry was successful in establishing reuse criteria in the EPEAT imaging equipment standard to reflect an acceptable compromise between the different interests of the many different EPEAT stakeholders. For example, a printer registered under the EPEAT environmental standard is required to be designed (criterion 4.9.4.1) so that the cartridge or container is not designed to prevent its reuse and recycling. Kleen Strike (and others in the remanufacturing industry) believe that environmental standards for purchasing, such as the EPEAT standards, which are international, will play an important role in enabling the circular economy to emerge and function in an effective manner. Kleen Strike has also contributed to the development of the Revised Sustainable Procurement Guidelines for Toner Cartridges – prepared by ICLEI for United Nations Environmental Programme UNEP-DTIE.

Kleen Strike participated in a consultation in November 2014 to the United Kingdom Cross-Party APSRG Inquiry into Remanufacturing. This resulted in the publication of the APSRG Report "Triple Win".

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Contributions made by Kleen Strike and others to interventions (eg inputs to national consultations) by UKCRA are reviewed by the Trade Association's Committee.

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

Yes

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

COP 21 is likely to result in greater development of the circular economy, since the circular economy facilitates significant reductions in CO2. Kleen Strike recognizes that the circular economy is one in which there is a wide variety of processes and systems which support resource productivity and mitigation of environmental (and climate) damage. Within the circular economy there are processes and systems through which physical items, such as cartridges and printers, are moved, acted upon and returned to further usefulness. For example, there are processes and systems for refurbishment and reuse, as well as recycling, repairing and reconditioning. There are also processes and systems for remanufacturing, which is a series of manufacturing steps acting on an end-of-life part or product in order to return it to like-new or better performance, with warranty to match. Overall, these activities can be viewed in terms of a series of value adding steps in which the purpose of value add is to maintain the resource, be it a cartridge or printer for example, at its highest level of resource utility and the manufacturing steps originally used to create the item are 'undone' or 'unravelled' only as a last resort. For example, the act of taking a cartridge and shredding it to isolate materials (e.g. plastics, metals) that can then be recycled into raw materials for other products is an act of ‘lower value add’ than the act of remanufacturing a cartridge to keep it circulating within the economy as a cartridge. Likewise, the act of recycling for material or energy recovery a cartridge that has been used only once in order to recover a small component of the embodied energy in the cartridge is also an act of lower value-add. Kleen Strike's business is aligned with the principles of the circular economy, and therefore would welcome robust carbon reduction agreement(s) through COP 21.

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

No

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment

CC3.1e

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

Kleen Strike recently moved into new premises and is using this disclosure process to establish a new baseline against which targets will be set. The company implemented a programme of energy-saving refurbishments on moving into its new facilities in January 2013. Examples of refurbishment work included: replacement of the roof to one with improved insulation, re-engineering of the boiler and pipework systems to reduce inefficiencies and thermal losses, installation of improved thermal controls in factory/office heating, improvements to doors and other aspects of the building envelope to reduce thermal and ventilation losses, improvement to the goods in/out area of the factory to minimize energy losses during transfer 'in and out' of goods, installation of low-energy lighting, including facade systems, and installation of various water-saving devices across the building.These refurbishments were carried out during 2013-14 and for this reason the company's baseline year for CDP climate change reporting was delayed until the refurbishment work was completed. Establishment of the baseline will enable more meaningful targets to be set in due course. Business transport is kept to a minimum and delivery and collection of cartridges is planned so as to be as fuel-effective as possible, within the constraint of maintaining good response times to customer requirements.

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

Kleen Strike (UK) Ltd is able to provide estimates of avoided emissions in two categories: (1) remanufactured laser toner cartridges and (2) printer repairs. A detailed report focusing on two of the dozens of models of toner cartridges that Kleen Strike remanufactures is available for download on the UKCRA website (www.ukcra.com) and is used to make the following estimates.

For the purposes of estimating the avoided emissions associated with providing a toner cartridge remanufacturing service, two popular models of cartridge are considered and average carbon footprints are estimated. In the case of the average OEM cartridge, the carbon footprint is 5.8 kgCO2e and this is what a user would incur if they purchased a new toner cartridge. The average carbon footprint of the first three remanufacturing cycles for the average toner cartridge is 1.5 kgCO2e. The avoided emissions provided by Kleen Strike's remanufacturing service for toner cartridges is therefore estimated to be on average approximately 4.3 kgCO2e. Kleen Strike remanufactures approximately 7,500 toner cartridges each year and so the estimated avoided emissions that Kleen Strike enables users to achieve is 7,500 x 4.3 kg CO2e = 32.3 tonnes CO2e.

During the reporting year Kleen Strike repaired and reconditioned 134 laser printers and 15 inkjet printers. Repairs to printers take place both on-site (about 2/3 at Kleen Strike Ltd premises) and offsite (about 1/3 at the user premises). Making the assumption that each repair or reconditioning enabled the user to avoid having to purchase a new machine, an indicative estimate for the avoided emissions enabled through Kleen Strike Ltd's printer repair service can be made using indicative values for the embodied carbon emissions of printers associated with materials and production of the printer. Estimates of these embodied emissions are 150 kg CO2e for a typical laser printer and 75 kg CO2e for a typical inkjet printer and have been provided by Greenclick (www.greenclick.co.uk). Assuming that each printer that is repaired corresponds to the avoidance of one new printer being purchased, the avoided emissions associated with Kleen Strike Ltd's printer repair service amounts to 150 x 134 = 20100 kg CO2e (laser printers) and 75 x 15 = 1125 kg CO2e (inkjet printers), giving a total avoided emissions of 21 tonnes CO2e. This figure excludes transport and parts emissions incurred by Kleen Strike for each repair task.

The total emissions which Kleen Strike enables users to avoid through its toner cartridge remanufacturing and printer repair services amounts approximately to 32 + 21 = 52 tCO2e. The gross Scope 1 and Scope 2 emissions of Kleen Strike Ltd are 4.9 and 10.6 t CO2 respectively giving a total of approximately 15.5 tCO2e. Thus, the emissions avoided by users (52 tCO2e) outweigh the combined Scope 1 and 2 emissions of Kleen Strike (16 tCO2e) by approximately 36 tCO2e. In this respect, the services of Kleen Strike can be considered to have a net climate change benefit.

CC3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

No

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

The company has a plan in place to reduce its environmental impact. All staff are aware of the company's aspirations to reduce its environmental footprint further. Kleen Strike Ltd recognizes that carbon emissions are involved not only in terms of energy usage in the business but also in a much broader way through embodied emissions in materials and components and the ways that such materials are protected for reuse. To this end the company is exploring ways in which its use of materials and the influence the company can have through supply chains, including end-of-life stages, can be improved.

Over the coming year (since moving into its new premises and having implemented building energy-efficiency initiatives) the company will endeavor to create more detailed account of the emissions associated with the broader product range so that targets for intensity metrics can be set accordingly. At present there is insufficient information available to be able to do this. Setting targets solely on gross scope 2 emissions (purchased electricity) is insufficient with setting such a target in the context of levels of business (service loadings).

The targets to be set will apply to intensity metrics for service lines (repairs, refills, etc). It is expected that realistic intensity targets will be able to be set.

It is expected that the overall level of remanufacturing of printer cartridges will increase over the next five years as businesses become increasingly aware of the emissions reduction opportunities associated with purchasing remanufactured rather than new cartridges. The gross scope 1 and scope 2 emissions of Kleen Strike are therefore expected to increase as the business grows. However, that growth will enable a corresponding significant avoidance / decrease in emissions of customers' businesses (as explained in answer to CC3.2a).

Further Information

Page: CC4. Communication

CC4.1

Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Status	Page/Section reference	Attach the document
No			

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	See text in CC5.1c	Increased operational cost	1 to 3 years	Direct	Very likely	Medium-high			

CC5.1b

Please describe your inherent risks that are driven by change in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other drivers	Risks are categorized as regulatory, physical and other risks. Regulatory Risks: Kleen Strike (like other cartridge remanufacturers) face regulatory risks in terms of failure of evolving regulatory systems to take	Increased operational cost	1 to 3 years	Direct	Likely	Medium-high			

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	account of industrial practices that do not encourage good ecodesign practices. For example, Article 4 (Product Design) of the European Recast WEEE Directive requires Member States to take appropriate measures so that producers do not prevent, through specific design features or manufacturing processes, WEEE from being reused. Unfortunately the problem of regulatory failure is allowing a situation to perpetuate in which anti-reuse devices, such as 'smart chips' (eg. micro chips that respond to instructions from the printer's firmware to not recognize a replacement cartridge unless it is a new OEM cartridge), zig-zag and sonic weldings of components to cartridge casings preventing replacement components when required, hidden screws that hinder or even prevent dissassembly or unnecessary bonding, are designed in to prevent cartridges from being reused. Kleen Strike Ltd, as a member of remanufacturing trade associations, is making representations UK and European governments to address these regulatory failures so that greenhouse gas emissions associated with poor ecodesign can be avoided. It is recognized that reuse is an important activity in the circular economy and input is also being made to relevant								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	UK and European consultations. Physical Risks: The decreasing availability of landfill space is a risk for those businesses whose business model involves sending cartridges to landfill. Kleen Strike's policy is to keep as many materials, components and cartridges circulating in the economy as possible. Other Risks: Kleen Strike regards the potential delays in establishing Implementation Measures for the EuP (ErP) Directive in terms of requiring good ecodesign practice for printer cartridges as a risk. Kleen Strike welcomes the introduction of strong regulations in this area so that OEMs are required to place on the market cartridges that are readily remanufacturable. It is universally recognized that the waste hierarchy is reduce, reuse, recycle and so remanufacturing is inherently is more environmentally and climate friendly than recycling.								

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

Kleen Strike is a small business and uses a variety of suppliers for components in international markets. The company recognises that physical climate parameters could have a potential impact on its supply chain, for example through flooding of a supplier component factory. At present such risks are mitigated through redundancy in the supply chain.

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters
Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	Kleen Strike (UK) Ltd. believes that the cartridge remanufacturing industry is an excellent example of the way industry should function in the low carbon economy – based on using resources in an environmentally sensitive way and taking every action possible to avoid sending useful materials to landfill or incineration. By building up remanufacturing infrastructure and capability, that creates scope to build a sustainable economy with lots of new jobs and at the same time reduce carbon emissions. Kleen Strike (UK) Ltd is an active participant in trade associations' (UKCRA & ETIRA) efforts in liaising with government, industry and policy makers in raising awareness of these positive developments and opportunities and to lead by example. Kleen	Reduced operational costs	1 to 3 years	Direct	About as likely as not	Medium-high			

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Strike is actively participated through UKCRA in the development of the international EPEAT ecodesign certification standard for imaging equipment, which includes consumables such as cartridges and inkjets and continues to make representations to US (and European) Agencies in relation to the benefits of environmental standards for procurement. The EPEAT certification mechanism has the potential to inform customers of the potential carbon reduction benefits of purchasing remanufactured cartridges compared with new cartridges that are either sent to landfill or incinerated after they have been used only once. In terms of the development of the European EuP Directive there is an opportunity to reassess the design of cartridges (especially in terms of anti reuse								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	devices) from the points of view of both good ecodesign and climate change mitigation. The establishment of a cartridge-specific Implementation Measure under the ErP Directive and oriented to encouragement and enablement of reuse & remanufacturing (in accordance with the recast WEEE Directive) is seen as an opportunity for Kleen Strike.								

CC6.1b

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Induced changes in natural resources	Kleen Strike (UK) Ltd. is pursuing a policy of striving for “zero landfill”. This is a physical opportunity in that if materials are reused and kept out of	Increased demand for existing products/services	1 to 3 years	Indirect (Supply chain)	More likely than not	Medium			

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	landfill, there is less of a requirement to source replacement virgin materials and avoidance of the emissions associated with the manufacture and supply of those virgin materials.								

CC6.1c

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other drivers	Many customers recognize that remanufactured toner cartridges are a cost effective environmentally-friendly alternative to newly produced toner cartridges and this is leading to increasing numbers of companies purchasing remanufactured toner cartridges. Many customers have sustainable procurement policies in place and so purchasing remanufactured toners is an ideal way for them to comply with	Wider social benefits	3 to 6 years	Indirect (Supply chain)	More likely than not	Medium			

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	their own policies. Kleen Strike (UK) Ltd and UKCRA wish to pursue further investigations to quantify the environmental benefits of remanufactured toners for customers. The next big challenge on the horizon for UKCRA members, such as Kleen Strike as well as all cartridge users is to reduce landfilling of printer cartridges through reuse or material recovery. With landfill prices on the increase and only 30% of used printer cartridges recovered into reuse or into recycling channels, this is the next major issue that must be addressed. Kleen Strike is working with others in the remanufacturing industry to focus on maintaining high quality to build more capability in the industry to get to higher numbers of refill cycles. The more that the industry goes to higher numbers of refill cycles the more that materials are recirculated in the economy and kept out of landfill and the more carbon savings are made. Kleen Strike believes that these represent excellent opportunities in terms of business development and more widely in terms of developing a sustainable low carbon economy and reducing the potential for								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	dangerous climate change.								

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Sun 01 Jun 2014 - Sun 31 May 2015	4.92
Scope 2	Sun 01 Jun 2014 - Sun 31 May 2015	10.59

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fifth Assessment Report (AR5 - 100 year)
CH4	IPCC Fifth Assessment Report (AR5 - 100 year)
N2O	IPCC Fifth Assessment Report (AR5 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Electricity	0.49426	metric tonnes CO2e per MWh	Defra GHG conversion factors
Natural gas	2.0346	Other: kgCO2e/m3	Defra GHG conversion factors

Further Information

Page: CC8. Emissions Data - (1 Jun 2014 - 31 May 2015)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

4.92

CC8.3

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

10.59

CC8.4

Are there are any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	No Sources of Uncertainty	Data for Scope 1 emissions have been taken from vehicle mileage data (which are logged regularly).
Scope 2	Less than or equal to 2%	No Sources of Uncertainty	Data for Scope 2 emissions have been taken from monthly utility bills.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

No third party verification or assurance

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

No third party verification or assurance

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jun 2014 - 31 May 2015)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

No

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jun 2014 - 31 May 2015)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

No

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions (metric tonnes CO2e)

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

CC11.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	
Electricity	
Heat	
Steam	
Cooling	

CC11.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment

Further Information

Page: CC12. Emissions Performance

CC12.1

How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

This is our first year of estimation

CC12.1a

Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions value (percentage)	Direction of change	Comment

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	metric tonnes CO2e	unit total revenue			

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	metric tonnes CO2e	FTE employee			

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	metric tonnes CO2e				

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services					
Capital goods					
Fuel-and-energy-related activities (not included in Scope 1 or 2)					
Upstream transportation and distribution					
Waste generated in operations					
Business travel					
Employee commuting					
Upstream leased assets					
Downstream transportation and distribution					
Processing of sold products					
Use of sold products					
End of life treatment of sold products					
Downstream leased assets					
Franchises					
Investments					
Other (upstream)					
Other (downstream)					

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No emissions data provided

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

No, we don't have any emissions data

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

To date we have not implemented a formal engagement process with suppliers about the carbon emissions. Discussions about carbon emissions have been informal as the level of awareness has gradually been increasing. Some requests for specific information from suppliers were made in order to perform the carbon footprint studies of cartridges. UKCRA commissioned an LCA (carbon footprint) study of laser toner cartridges and the study focused on remanufacturing of two laser toner cartridge models. The carbon footprints were evaluated on the basis of actual profiles of components replaced during refilling cycles of cartridges carried out at Kleen Strike. The carbon footprint study of Kleen Strike (UK) Ltd's remanufactured laser toner cartridges means that the company can provide its customers with an indication of the avoidable carbon footprint (about 60% of carbon footprint) for customers choosing to purchase long-life remanufactured cartridges in favour of new ones. Procurement officers in companies and public sector organizations can now enter estimates for carbon savings in their carbon accounts made by choosing to purchase remanufactured over OEM or new build cartridges.

The calculation of the carbon footprint is performed by first identifying and mapping out the inputs of each life cycle stage. The method used is based on the assessment of emissions of CO2 and other greenhouse gases through the life cycle of a product. The study considered the flow from materials manufacturing, transport of materials to component manufacturing plants, manufacture of cartridge components, transport of components to cartridge assembly and remanufacturing plants, transport of cartridges to distribution / sales centre, and subsequent provision of the cartridge to the user. At the end of the use phase, the user either provides the spent cartridge to an end of life (EOL) process or arranges for the cartridge to go to a remanufacturing facility. In the first case, the user would then purchase another new cartridge and in the second case the user would use a remanufactured and refilled cartridge. The various stages at EOL for cartridges and used components were also investigated. The boundaries considered in the study encompassed all the stages in the life cycle of a cartridge except for the impacts arising in the use phase (eg the type of paper printed on, whether printed on both sides). Since the objective of this study was to compare OEM and remanufacturing, the same assumptions were made for the OEM and remanufactured cartridge wherever possible. Where it was known that specific differences do occur then these were taken into account. To test the importance of any assumptions, calculations were made using a range of possibilities so that sensitivities to assumptions can be tested. This included structure of the global supply chains and the component replacement profiles, for example.

The CO2 saving in the early cycles ranges from about 20 to 45% whereas the CO2 saving in the later cycles ranges from about 53 to 60%. The carbon savings depend both on refill cycle number and the details of which components have been replaced up to that point. The study is available on the UKCRA website. Further carbon footprint studies of laser toner cartridges remanufactured by Kleen Strike (UK) Ltd have been carried out by Greenclick (www.greenclick.co.uk). A range of cartridges of different sizes, characterized by page yield, were studied and the embodied carbon associated with the remanufactured cartridge per page printed has been determined. The results of the carbon footprint studies show that the carbon intensity of the remanufactured cartridge, i.e. gCO2e per page printed, varies significantly by the size of cartridge. For example, cartridges of page yield 2000 pages, 5000 pages, 21,000 pages, and 30,000 pages were respectively 0.77 gCO2e/page, 0.37 gCO2e/page, 0.15 gCO2e/page and 0.21 gCO2e/page. The variation in the carbon footprint can be understood in terms of the physical structure of the printer cartridge. In the case of the smallest cartridges, i.e. the ones with page yield of around 2000 pages, the printing mechanisms within the cartridge form the dominant part of the footprint. As the cartridge gets larger, in order to be able to print a larger number of pages (i.e. have a larger page yield), the compact structure of the cartridge unwinds and the toner supply hopper becomes the largest part of the cartridge. Thus, in going from the smallest cartridges through to the largest cartridges the structure of the cartridge unwinds and this is reflected in a trend of reduction in the carbon footprint per page printed (ie reducing from 0.77 gCO2e/page).

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Laura Heywood	Managing Director	Chief Executive Officer (CEO)

Further Information

CDP 2015 Climate Change 2015 Information Request