

**Module: Introduction****Page: Introduction**

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**CC0.1****Introduction**

Please give a general description and introduction to your organization.

Crest Nicholson is a leading residential developer, one of the top 10 listed house-builders, building homes across the southern half of the UK. We aim to improve the quality of life for individuals and communities by providing better homes, workplaces, retail and leisure spaces in which people aspire to live, work and play – now and in the future.

To deliver that ambition, we have been on a journey of innovation and transformation to position the Group for profitable growth. Whether carrying out systematic scientific research into low carbon housing solutions, partnering with our supply chain to drive out waste, or developing our product for a rapidly evolving market, the focus is on delivery, quality and choice for our customers and sustainable business value for our shareholders.

Our operational focus remains concentrated in the southern half of England with an emphasis on creating well designed, high quality homes in sustainable communities. Our portfolio meets the needs of a wide range of purchasers, from first time buyers to investors, with a product range that includes houses, apartments and commercial units on mixed-use developments.

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**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 Nov 2015 - Mon 31 Oct 2016

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### 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

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### 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(£)

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### CC0.6

### **Modules**

As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.

If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email [respond@cdp.net](mailto: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 in CC0.6.

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### **Further Information**

**Module: Management**

**Page: CC1. Governance**

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### **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

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### **CC1.1a**

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

Chris Tinker, Board Director and Chairman of Strategic Projects and Regeneration has responsibility for sustainability, including climate change. Chris ensures that the risks and opportunities relating to climate change are identified through the annual risk review and strategic planning process. Responsibility for responding to these risks and opportunities is given to the relevant committee chaired by a member of the Executive Management team.

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### **CC1.2**

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

Yes

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**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
All employees	Monetary reward	Emissions reduction project	Employees receive a 20% uplift in their car benefit if they choose a carbon efficient car ( $\leq 120\text{gCO}_2/\text{km}$ ), either through the company car scheme or if they have a car allowance.
Other: Site Managers	Recognition (non-monetary)	Behavior change related indicator	Results of environmental audits form part of the Site Manager of the Year decision criteria.
All employees	Monetary reward	Efficiency project	Employees are eligible to purchase a tax free bike under the Government's Cyclescheme.
Other: Site teams	Monetary reward	Efficiency project	Employees incentivised to reduce waste through a league table. The winning site team receive a monetary reward and trophy. The winning division also receives a trophy.

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**Further Information**

**Page: CC2. Strategy**

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**CC2.1**

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

Integrated into multi-disciplinary company wide risk management processes

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**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
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	UK	1 to 3 years	

#### CC2.1b

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

Crest Nicholson's (CN) Climate Change Policy commits to ensuring risks and opportunities related to climate change are understood and managed, at company and asset levels. At a company level, climate change risks and opportunities are identified through a materiality assessment, as well as a risk/opportunities assessment, the results of which inform the business strategy published in our 2016 Integrated Report (IR). The IR and the About Us section of our website demonstrates that CN is pursuing many of the climate change related business opportunities, while ensuring key risks are reviewed, mitigated and managed. These include: flood risk, overheating risk, severe weather, energy security, cost of energy/carbon, and consumer demand-side energy consumption.

Risk management and future opportunities are a regular agenda item for all parts of the business with emphasis on continuous improvement and differentiation. The risk management framework consists of managing and monitoring risks through risk registers that are maintained at divisional (covering division and asset level risks) and Group level (covering significant division-level and company-wide risks). This is undertaken formally at least annually but happens informally on a more regular basis.

At divisional level each management board undertakes an annual assessment of its division and asset level exposure to financial, operational and strategic risks, including climate change, and the measures that have been put in place to manage those risks. The significant risks highlighted within each divisional register are incorporated in the Group risk matrix which is reviewed and monitored by the Audit Committee. The Committee is responsible for reviewing the effectiveness of the Group's internal controls and risk management systems including the Group's control framework; this is then reflected in the risk matrix. The committee approves the internal audit programme and monitors the implementation of recommendations.

#### CC2.1c

**How do you prioritize the risks and opportunities identified?**

Company-wide and asset level risks are assessed in terms of their impact and probability and given an inherent risk ranking. Mitigating actions are considered and a residual risk rating is identified. These residual risk ratings are then used to prioritise investigation of further mitigating actions.

Assessment of potential opportunities related to risk mitigation occurs through the Business Improvement Workgroups (BIWs) and the strategic planning of the Board, where cost-benefit analysis is undertaken involving oversight and approval by an Executive Director. Opportunities are then prioritised on the basis of greatest cost-benefit.

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#### 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

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#### CC2.2

**Is climate change integrated into your business strategy?**

Yes

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#### CC2.2a

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

i) How the business strategy has been influenced by climate change:

In November 2016 we carried out a detailed materiality assessment with key internal and external stakeholders to ensure that our business strategy takes into account significant risks and opportunities, including those relating to climate change and other environmental/social issues. The internal stakeholders included, but not limited to, directors in charge of Procurement and Supply-chain, Health, Safety and Environment, Customer Service and Investor Relations. The external stakeholders included, but not limited to, representation from major shareholders, local government, an SME builder, industry bodies and several of our key supply chain partners. Through our membership of the National House Building Council, our partnership with the Town & Country Planning Association, our representation

on the Green Construction Board low-carbon home valuation group, along with dialogue with government departments, including BEIS, DCLG and the HBF National Technical and Sustainability Committee, we are kept informed of current and emerging issues relating to climate change and work to understand the short and long-term implications to our business.

ii) At least one example given of how the business strategy has been influenced:

- a. During land acquisition and design stage, an overheating risk assessment is carried out and where necessary a full dynamic overheating assessment of new homes is undertaken, and a hierarchy of solutions is followed to mitigate the impacts. To further combat overheating risk, our new range of Group house types has been modelled for the worst case scenario of overheating, allowing us to mitigate the risk through design.
- b. Through our well-established Make Waste History (MWH) campaign, aiming to drive out unnecessary waste of raw materials, energy and water across the business. Divisional MWH forums are in place to realise the campaign's aim, developing and implementing innovative ideas. The recommendations resulting from energy-saving audits (as required by the ESOS regulations), have been integrated into our operational improvements process and has realised a 27% reduction in diesel consumption across our construction sites.
- c. Following the outcome of a collaborative research project which examined alternative methods of construction, a business decision has led us to develop a new range of group house types and to increasingly adopt a non-traditional construction method. The off-site manufacture route we are taking will improve quality, reduce waste and embodied carbon, and result in a more efficient use of resources including water and raw materials.

iii) What aspects of climate change have influenced the strategy:

- a. Adapting to more frequent extreme weather events, such as floods and potential overheating. To manage the climate change risks we apply appropriate Flood and Water Management Plans to our developments.
- b. Zero Carbon Homes policy was dropped by Government, but we made significant investment in related R&D of low carbon homes via the AIMC4 project. We have a fabric specification to achieve the Fabric Energy Efficiency Standards that are required as part of the 2013 Approved Document L. We are actively pursuing alternative construction methods, including off-site manufacture, with a number of prototype homes being built this year. This will help safeguard against increasing occurrences of severe weather, material availability issues and reducing embodied carbon.
- c. Presenting opportunities to develop green business. We have linked emissions reductions to our business strategy, e.g. integration of carbon emission reduction considerations from the built environment into our master-planning and design processes.
- d. Reducing our operational carbon footprint; emissions from our offices, on-site construction, business travel and commuting. In 2016, we achieved a 20% reduction in energy use, and a 46% reduction in water use/person in our offices against our baseline.

iv) How the short term strategy has been influenced by climate change:

- a. Building homes now that achieve levels of energy efficiency and sustainability that meet and exceed current Building Regulations. In 2016, on average our homes were 16.6% better on carbon emissions than current regulations require.
- b. Adopted a sustainable procurement process that gives preference to suppliers of sustainable products, such as timber from certificated sources, or suppliers willing to partner to reduce emissions.
- c. Set a policy ambition to create local ecological/biodiversity enhancement on our sites and developed a framework supporting internal processes and tools to deliver that ambition.
- d. Established forums with responsibility to develop and implement energy and waste reduction initiatives in line with our MWH campaign which meet twice annually.

v) How the long term strategy has been influenced by climate change:

- a. A new range of Group house types have been developed and are currently being tested through a prototype range. The design incorporates elements to ensure homes are future-proofed against changes in the climate to maintain comfortable living environments. Secondly, researching alternative construction methods, including off-site manufacture, to safeguard against increasing occurrences of severe weather, material availability issues and reducing embodied carbon.
- b. Carrying out research into low-carbon homes, such as the AIMC4 collaborative project, yielding economic benefit from cost-effective early application of knowledge to design of low carbon emission homes. The focus has now moved to the AIMCh collaborative research project, which closely aligns to our Strategic

Pillar Working Group that is reviewing alternative methods of construction and explores the potential to industrialise the low-carbon house-building model.

vi) How this is gaining a strategic advantage over competitors:

- a. Delivers a reputational advantage by placing us among the leaders in sustainable house-building in the UK. In 2016, we came 1st place in the Next Generation Sustainability Benchmark, which reviews the sustainability performance of the top 25 housebuilders in the UK.
- b. Understanding and developing cost-effective customer friendly solutions for low-carbon homes is reducing risks and costs. In 2016 44% of our homes built had at least one type of renewable or low carbon energy source, and on average our homes were 16.6% better on carbon emissions than current regulations require.
- c. Research into the way in which home occupiers respond to new designs and technologies of low-carbon homes has resulted in increased desirability of product offering, which may in-turn increase cash-flow and margin. Following research in the AIMC4 consortium we developed a fabric-first, 'fit and forget' approach to low-carbon initiatives within the home, improving the home's energy efficiency whilst minimising the interaction needed by the homeowner

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#### CC2.2b

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

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#### CC2.2c

**Does your company use an internal price on carbon?**

Yes

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#### CC2.2d

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

Although the Zero Carbon Homes policy has been dropped by the Government, our developments built in London will still be made to meet the policy requirements. Therefore, we will continue to include a cost of carbon in our development cost models for London units to be built under the 2016 Building Regulations to reflect the likely 'Allowable Solutions' component of the Zero Carbon Homes policy. This allows us to compare the cost-effectiveness of on and off-site carbon reduction measures.

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#### 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
- Other

**CC2.3a**

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

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	<p>Energy efficiency of new build homes (Part L Building Regulations, England). The Zero Carbon Hub (ZCH), which closed in March 2016, was a non-profit public/private partnership established to take day-to-day operational responsibility for coordinating delivery of low and zero carbon new homes. Stephen Stone, Crest Nicholson CEO, sat on the Executive Group of the ZCH Design vs As-Built work programme. A Director was seconded to the ZCH to manage one of the Design Vs As-Built work-streams. A Director was invited to work on the 2016 Zero Carbon definition and implementation with the Department of Communities &amp; Local Government (DCLG) and the Department of Energy and Climate Change (DECC) as part of a small, select group. Our Group Technical Director sat on the Zero Carbon Hub Steering Group for the Builders Handbook (how to deliver new building regulations for SMEs) and is a member of the Steering Group for the Guide to Linear Thermal Bridging (a key element of achieving energy efficiency in homes). This Director was also an official ambassador for the Zero Carbon Hub and sat on the overheating risk steering group, into which the company invested £10,000.</p>	<p>Development of practical, cost-effective, customer friendly solutions ensuring that new regulations can be delivered effectively on site.</p>
Energy efficiency	Support	<p>The Group Technical Director was a lead member in a consortium, AIMCh, which looked at the industrialisation of the house building process, reporting to government. Part of its considerations is how we can meet the required delivery of new homes, whilst maintaining quality and meeting Building Regulations now and in the future. This will ultimately contribute to the delivery of more energy efficient homes. It is also examining alternative construction methods, including off-site manufacture, which could bring with it a reduction in resource consumption, including materials, water and energy.</p>	<p>Development of practical, cost-effective, customer friendly solutions for delivering high quality energy efficient homes with minimal wasted resources.</p>

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	Energy efficiency of new build homes (Part L Building Regulations, England). Our Group Technical Director and Group Sustainability Director sit on the Home Builders Federation (HBF) National Technical and Sustainability Committee.	Development of practical, cost-effective, customer friendly solutions ensuring that new regulations can be delivered effectively on site.
Other: Reduction of emissions from the built environment	Support	In 2016, Crest Nicholson were members of UKGBC, which is an NGO that campaigns for a sustainable built environment.	Development of practical, cost-effective, customer friendly solutions for reducing emissions.
Other: Reduction of emissions from the built environment	Support	A Director sits on the Green Construction Board low carbon home valuation group.	Development of practical, cost-effective, customer friendly solutions for reducing emissions.
Adaptation resiliency		A Director has been invited to work on the DCLG 'Overheating in New Homes' research group which starts in May 2017.	

### 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?
Home Builders Federation (HBF)	Consistent	There is much uncertainty following Brexit and the General Election. Therefore the stance is a 'wait and see' position.	Crest Nicholson influences the HBF position in a variety of ways: Our CEO is a non-executive director on the Board of the HBF, which observed on his appointment that: "His wealth of experience and appetite to improve the climate in which the industry operates – particularly with regards to the sustainability agenda - will supplement and enhance the

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?
			skills of the existing board members". A Crest Nicholson Director sits on the HBF National Technical & Sustainability Committee: assisting in providing expert feedback to Government on the technical aspects and tools required to deliver comfortable low-carbon homes via 'The Future Performance of new Homes' sub-group: looking at thermal performance, indoor air quality / ventilation, overheating and the energy 'performance gap'.

**CC2.3d**

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

**CC2.3e**

**Please provide details of the other engagement activities that you undertake**

Crest Nicholson undertake a range of further engagement activities; these are outlined below.

- i) An Executive board member sits on the Sustainable Development Commission for the National Planning Policy Framework
- ii) Board members advise DCLG and BEIS on policy outworking and future policy.
- iii) A Director sits on the HBF's National Technical and Sustainability Committee as well as the NHBC Standards Committee.
- iv) Collaborative working and hosting debates with the Town and Country Planning Association. This includes jointly hosting fringe events at party conferences to help develop policy formulation, hosting dinners for key policy-makers to act as a sounding board to test how policy outworks in practice, and we are regular speakers at TCPA conferences on the subject of creating new sustainable places.

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**CC2.3f****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?**

The Crest Nicholson development process is required to incorporate the Group's policies and aspirations in respect of sustainability in the round, including Climate Change, Sustainable Procurement, and other environmental matters. These matters are part of the scheduled review and sign-off processes. Innovation and strategic policies are incorporated by our Business Improvement Workgroup (BIW), which is in turn overseen by the Executive Management Team.

The departmental directors with responsibility for overseeing the delivery of different aspects of our climate change strategy meet on a regular basis to review progress and discuss challenges and opportunities. Members of the Group Sustainability Team are represented on all the Business Improvement Workgroups through which they facilitate cross-fertilisation of activity and consistency around climate change across the departments and the divisional businesses.

As part of our company wide Make Waste History (MWH) campaign, divisional MWH forums have been established to develop and implement innovative ideas to reduce our resource consumption. Initiatives are fed back to a MWH Steering Group, which then disseminates the good practice across the business, creating a feedback loop for good initiatives.

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**CC2.3g**

Please explain why you do not engage with policy makers

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**Further Information**

CC2.1b 2016 Crest Nicholson 2016 Annual Integrated Report attached CC2.3e The Garden Cities Myth-Buster guide attached

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**Attachments**

[https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC2.Strategy/Garden\\_Cities\\_myth\\_buster\\_UPDATED.pdf](https://www.cdp.net/sites/2017/59/4059/Climate%20Change%202017/Shared%20Documents/Attachments/ClimateChange2017/CC2.Strategy/Garden_Cities_myth_buster_UPDATED.pdf)  
[https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC2.Strategy/Crest Integrated Report 2016.pdf](https://www.cdp.net/sites/2017/59/4059/Climate%20Change%202017/Shared%20Documents/Attachments/ClimateChange2017/CC2.Strategy/Crest%20Integrated%20Report%202016.pdf)

**CC3.1**

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

Intensity target

**CC3.1a**

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
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**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 covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 1+2 (location-based)+3 (upstream)	6%	10%	Metric tonnes CO2e per unit FTE employee	2013	0.91	2017	No, but we anticipate setting one in the next 2 years	Scope 1+2+3 well to tank office energy consumption: % of emissions in scope is the scope 1, 2 and 3 emissions for office electricity and gas divided by the total scope 1, 2 and 3 emissions.

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
Int1	Increase	35	Increase	35	Target to reduce the 0.906 tCO2e per person by 10%. Assume the increase in employees remains the same as that between 2013 and 2016. The number of employees in 2017 will be 926 FTE. Scope 1 & 2 emissions in 2013 were 454 tCO2e. Intensity was 0.736 tCO2e per person. If the 10% target is reached, the new tCO2e per person would be 0.662. $926 \times 0.662 = 613$ tCO2e $(613 - 454) / 454 = 35\%$ Scope 3 emissions in 2013 were 105 tCO2e. Intensity was 0.170 tCO2e per person. If the 10% target is reached, the new tCO2e per person would be 0.153. $926 \times 0.153 = 142$ $(142 - 105) / 105 = 35\%$

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
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**CC3.1e**

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

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Int1	75%	100%	Third year this target has been in place: Current intensity: = (Electricity in Offices tCO <sub>2</sub> e + Gas in Offices tCO <sub>2</sub> e) / FTE = (467.25+103.81) / 849 = 0.673 Performance against target: (0.906 – 0.673)/(0.906 x 10%) = 257% complete. Value entered as 100% as this is the highest value that can be entered. Performance against target is ahead of schedule, and outperformed target. Setting new targets will be investigated.

**CC3.1f**

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

**CC3.2**

**Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?**

Yes

**CC3.2a**

**Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions**

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Product	All of our homes are designed and built to enable sustainable lifestyle choices and a lighter environmental footprint including lower carbon emissions for the third parties who occupy the homes – i.e. low carbon products.	Low carbon product	Other: See further information			At a minimum, we meet the Building Regulations that require a minimum energy performance standard for new buildings, in the form of Target CO2 Emission Rate (TER) and Target Fabric Energy Efficiency rate (TFEE). However, when compared to other buildings, our new homes are designed to produce lower carbon emissions. The average SAP rating (based on SAP 2009) of our dwellings built in 2016 was 83.65, compared to an average SAP of a UK home of 61 (as reported in the UK Housing Review 2017), and an average of 81 for new-build homes in England (as reported in the 2015 DECC Energy Efficiency Statistical Summary report, page 19). The result of these high design standards is a 8,646 tCO2 saving per year by Crest Nicholson customers, when compared to the average UK home (for

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
						regulated consumption only). See methodology in the Further Information section. • 44% of our completed homes in 2016 benefit from at least one renewable energy source, minimising the use of fossil fuels and reducing the homes carbon footprint. • Our communities are well connected with 100% of our completed homes in 2016 within 1,500m of a bus service and 74% within 1,500m of local amenities. Furthermore, 58% of our completed homes have access to safe cycle storage and 66% have access to cycle routes. Placing less reliance on cars will help home owners to reduce their carbon footprint.

**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)**

Yes

**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 *)
Under investigation	0	0
To be implemented*	1	2.1
Implementation commenced*	1	31.8
Implemented*	4	1009.5
Not to be implemented	0	0

### 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
Energy efficiency: Processes	Diesel consumption reduced by prompt connection to TBS on sites and placing less reliance on diesel generators	784.8	Scope 1	Voluntary	140000	0	<1 year	Ongoing	This initiative places less reliance on diesel generators by connecting to mains electricity as soon as possible. This initiative falls into the same scope as our intensity target.
Energy efficiency:	Rolling 3 year improvements to the	2.4	Scope 2 (location-	Voluntary	622	0	<1 year	Ongoing	This initiative falls into the same scope as our intensity target. The energy

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
Building services	IT equipment across the business.		based)						consumption per laptop and desktop has fallen as old equipment has been replaced throughout the year. No extra investment required as this is part of rolling improvements in IT equipment.
Energy efficiency: Building services	LED lights installed in Head Office to replace the fluorescent tubes	15.9	Scope 2 (location-based)	Voluntary	3500	20000	4-10 years	11-15 years	This initiative falls into the same scope as our intensity target.
Behavioral change	Make Waste History campaign to reduce construction waste	4.2	Scope 3	Voluntary	37500	0	<1 year	Ongoing	Packaging take back scheme implemented. The tCO2e savings are based on the reduction in transport movements to and from site. This initiative is relevant for our construction site activity.
Low carbon energy purchase	Switched to a renewable energy tariff at two offices	202.2	Scope 2 (market-based)	Voluntary	0	0	<1 year	Ongoing	Two offices have switched to renewable energy tariffs.

### CC3.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Compliance with, and where possible exceeding, current Building Regulations, which are designed to drive down carbon emissions of new homes. Crest Nicholson also meet, and where possible exceed, local planning requirements which means that many of our developments exceed Building Regulations by a considerable margin. In FY16, Crest achieved 16.63% lower average carbon emissions from our new homes than current regulations demand. Crest Nicholson also continue to implement initiatives that were recommended following our audits from the Energy Savings Opportunity Scheme (ESOS).
Financial optimization calculations	Our waste and energy costs are monitored on a regular basis. This provides a useful baseline when considering resource reduction projects. All projects undergo a cost benefit analysis, and if the payback period is deemed reasonable and the technology suitably mature, they will be implemented.
Dedicated budget for low carbon product R&D	Projects identified as having potential for yielding cost and carbon savings are assigned specific budgets and resources. We are examining methods of construction that will lead to improved use of natural resources.
Dedicated budget for energy efficiency	A Crest Nicholson Director helped lead the review for the HBF of the All Party Parliamentary Group (APPG) report on the quality of new build homes. Learning from this has shaped our quality procedures. We are investing more than £700,000 to develop and prototype new Group house types utilising off site manufacturing techniques, which will deliver comfortable, cost effective and low carbon homes for our customers.
Employee engagement	Construction related environmental issues, including waste minimisation and energy use, form part of the subcontractor induction. There is continuous engagement across the functions via the Business Improvement Workgroups (BIW), and in particular the current supplier partnering initiatives for sustainability sourcing and supply through our Commercial BIW. Make Waste History forums provide a responsibility for each division to collaborate and generate innovative ideas on energy, water and waste reduction. Employees receive regular sustainability focused communication via the Group intranet, emails, workshops and noticeboards.
Internal incentives/recognition programs	Employees, who receive car benefit, are eligible to receive incentives to reduce emissions from their cars through the enhanced car allowance related to car emissions and all employees can benefit from the Cycle-to-Work Scheme.
Partnering with governments on technology development	We have undertaken a strategic programme of research into the in-use energy performance and internal comfort conditions of our new homes since 2010. In 2016, we worked on a project called AIMCh, partly funded by Innovate UK. The project brought together a consortium of industry partners to research the costs and benefits of industrialising the housebuilding model through alternative methods of construction. The total project cost is £121,000. We are also assisting DCLG on their investigations into overheating. We provided house types to model and construction specifications to base the modelling on.

CC3.3d

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

Further Information

CC3.2a Further information and explanation of methodology • The annual carbon savings for the average Crest Nicholson home was ‘back-calculated’ using the methodology from SAP 2009. To do this back-calculation, the energy cost factor (ECF) must first be calculated from the SAP score, using the following equation:  $ECF = (100 - SAP\ score) / 13.95$  (equation taken from SAP 2009 methodology). The ECF is then used to calculate the total cost to heat the home, using the following formula:  $total\ cost\ to\ heat\ the\ home = (ECF / deflator) \times (total\ floor\ area + 45)$ . Here there are 3 key assumptions: o Deflator = 0.47 (taken directly from SAP 2009 methodology); o Average total floor area (TFA) for the Crest Nicholson homes developed this reporting year: 88.73m<sup>2</sup>. o Average total floor area (TFA) for the average UK home assumed to be the same as for the Crest Nicholson developments: 88.73m<sup>2</sup>. • From the total cost to heat the home, the total kWh consumption is calculated using energy cost factor of 3.1p/kWh for mains gas (taken directly from SAP 2009 methodology). A critical assumption here is that all of the regulated consumption for the average home is mains gas, which is not strictly true, but this assumption ensures that the carbon emissions saved are not over-estimated, and avoids the need to make an assumption on the consumption breakdown between electricity and mains gas. The carbon emissions from the property are calculated from the consumption (kWh) using the mains gas carbon factor of 0.198 kgCO<sub>2</sub>/kWh (taken directly from SAP 2009 methodology). • Calculate the total cost to heat an average UK home using the same steps above but using a SAP rating of 61 • The difference between the carbon emissions of a Crest Nicholson property, and an average UK home, is calculated from a simple subtraction of the annual carbon emissions of the two properties.

## 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	Comment
In mainstream reports (including an integrated report) in accordance with the CDSB Framework	Complete	p27, p32, p34, p93	<a href="https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Crest Integrated Report 2016.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Crest Integrated Report 2016.pdf</a>	p27 – Reducing environmental impact of homes built P32-34 – Operational GHG emission performance P93 – GHG statement
In voluntary communications	Complete	p1	<a href="https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/climate change policy 2017.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/climate change policy 2017.pdf</a>	p1 – Crest Nicholson’s policy on climate change
In voluntary communications	Complete	p8	<a href="https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Crest Integrated Report summary 2016.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Crest Integrated Report summary 2016.pdf</a>	p8 – Reducing our site emissions
In voluntary communications	Complete	Our Environmental Impact tab	<a href="https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Environmental data on website.docx">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC4.1/Environmental data on website.docx</a>	An extensive data table of points related to operational GHG emission performance

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 physical climate parameters
- 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
Fuel/energy taxes and regulations	Energy is used to power our offices and as part of our construction work on site – for example, to	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low	£2m x percentage increase (estimated to be 10%), i.e. £200k	Increasing operational energy efficiency through our Make Waste History	The waste and energy reporting is established within the business and there is no

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>power the site compounds and for plant and machinery around site. Potential changes to taxes and regulations will have an impact on our energy costs.</p>							<p>campaign. Monthly reports are sent to site managers and build managers detailing their energy consumption and related costs and carbon footprint. Crest Nicholson reviews forthcoming legislation on a regular basis. An example of an initiative rolled out has been the installation of LED lights in Head Office. The business is updating its core house type range and is prototyping them using off site manufacturing techniques. This will lead to less energy consumed on</p>	<p>additional cost. The house type and OSM project has an approximate cost of £700,000. £80,000 invested in efficient LED lighting.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								site with reduced need for equipment such as diesel generators and reduced transport movements to and around site as more materials are put together offsite.	
General environmental regulations, including planning	Waste generated on Crest Nicholson sites amounts to approximately £2.5m per year spent on skips. If taxes relating to waste, such as the Landfill tax change, we will experience financial implications.	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low	£2-3m x percentage increase (estimated to be 10%), i.e. £200-300k	Monthly waste dashboards issued to site teams with clear performance updates and opportunities to reduce waste. Waste benchmarks set for each site to allow them to track performance. Land acquisitions include a financial appraisal of waste costs with a budget	The waste reporting is established within the business and there is no additional cost. The house type and OSM project has an approximate cost of £700,000.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>covering a period over 2-10 years. These are reviewed at monthly cost reviews at a project level. The business is updating its core house type range and is prototyping them using off site manufacturing (OSM) techniques. Due to the nature of manufacturing in a factory environment, less waste will be produced due to fewer offcuts and less risk of material being damaged on site. We are conducting an investigation to determine the waste created from the prototypes versus</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								traditional methods.	
General environmental regulations, including planning	Crest Nicholson purchases timber directly and via subcontractors. More rigorous EU timber sourcing regulations could impact cost.	Increased operational cost	1 to 3 years	Indirect (Supply chain)	About as likely as not	Low	Direct supply timber £9.15m x percentage increase, estimated to be in the range of 2-10%. Indirect supply £12.34m x percentage increase, estimated to be in the range of 2-10%.	Quarterly audit of timber supply chain and regular marketplace review of availability and cost.	Sustainable Timber Procurement Policy is established within the business and there is no additional cost.
General environmental regulations, including planning	Planning policy for Flood and Water Management could impact both current and potential future sites.	Reduction/disruption in production capacity	1 to 3 years	Direct	Unlikely	Low	£1-2k/plot increase in production costs. Potential for delay in commencement of production.	Lobbying through the HBF (trade body). Consultant panel in place. Mitigated through land acquisition cost. Central control and approval over regional site-based strategies.	No additional cost based on current business activity.
Product efficiency regulations and standards	Although we are yet to see how leaving the European Union and the recent general	Other: Increased operational costs and potential reduction/disruption in production capacity due to	3 to 6 years	Direct	About as likely as not	Low-medium	£1.5 – 4.5k/plot increase in production costs. This cost would be deductible from	Crest Nicholson follows a fabric first approach in order to meet and exceed current Building	No additional cost based on current business activity.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	election result will impact upon future policy, there is a clear understanding that the built environment is a significant player in minimising the impacts of climate change. We could therefore see an increase in on-site carbon reduction requirements beyond current levels.	availability of skills and labour					the land value. Up-skilling of technical staff and increase in consultant fees. Skills shortage and labour capacity.	Regulations. In-house training programme is in place to ensure quality standards are met. Research and development activities to trial constructing to higher standards to ensure the business is prepared for future changes.	
Other regulatory drivers	Government is considering more stringent regulation in the future with increased levels of performance testing via Part L of the Building Regulations	Increased operational cost	1 to 3 years	Direct	About as likely as not	Medium	Impact primarily through delayed completions and cash collection and increased supervisions costs, and additional testing during construction.	Provisions made in quality manual and training of staff and subcontractors. Represented on the 2016 regulations with regard to performance testing, informing regulatory changes.	The house type and OSM project has an approximate cost of £700,000.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Lobbying through the HBF. The off-site manufacturing of homes will likely further improve quality as manufacturing takes place in a factory environment.	

**CC5.1b**

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	More frequent extreme weather events leads to several challenges. There will be challenges to project	Increased operational cost	>6 years	Direct	More likely than not	Low	Delays to production. Increased after sales costs.	Homes are designed so that our customers can be efficient with their water use. Our homes are designed to use an average	£5k/site for dynamic modelling of overheating risk. Cost only applicable to a proportion of sites where

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>economics and market affordability from future-proofing new homes against flood risk, extreme storms, drought and overheating. More frequent extreme droughts and water scarcity challenges us to design homes that are water efficient. More frequent heavy rainfall events means that it is crucial to put in place robust water run off management measures. Working in particularly wet weather can slow the build programme and increase risk of health and safety incidents.</p>							<p>of 105 litres of water per person, per day. Procedures focused on improving build quality and resilience. Participated in the ZCH Overheating Project to define overheating and its likely impact. Introduced an overheating policy and assessment process. Our sites are developed with strategies to manage surface water runoff. Examples include, permeable paving, swales etc. The business is updating its core house type range and is prototyping them using off site manufacturing (OSM)</p>	<p>risk is assessed as high. The house type and OSM project has an approximate cost of £700,000.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								techniques. Manufacturing in a factory environment will mean that production is less susceptible to adverse weather.	
Other physical climate drivers	Supplier manufacturing plants located in areas subject to high physical risk from climate change which could lead to project delays.	Reduction/disruption in production capacity	3 to 6 years	Indirect (Supply chain)	About as likely as not	Low	Localised disruption to supply. Additional cost to source alternative solutions.	The business is currently reviewing its sustainable procurement strategy and meetings have taken place with key suppliers to understand how they are managing their environmental risks.	No additional cost based on current business activity
Change in precipitation extremes and droughts	Changes to the flood risk of the land bank.	Increased capital cost	1 to 3 years	Indirect (Client)	About as likely as not	Low	No financial implications.	The majority of land is secured on option. Flood risk is re-assessed at point of purchase and cost/risk factored into the land value purchase price.	No additional cost based on current business activity
Change in temperature extremes	There will be challenges to project economics and	Increased operational cost	1 to 3 years	Direct	More likely than not	Low-medium	Cost to conduct modelling of overheating	Participated in the ZCH Overheating Project to define	£5k/site for dynamic modelling of overheating

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	market affordability from future-proofing new homes against risk of overheating.						and to implement measures if the risk of overheating is high.	overheating and its likely impact. Introduced an overheating policy and assessment process.	risk. Cost only applicable to a proportion of sites where risk is assessed as high.

#### 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
Induced changes in human and cultural environment	New lower-carbon products and technologies that are likely to be unfamiliar to customers could influence their choice of new home and their occupancy experience.	Reduced demand for goods/services	1 to 3 years	Direct	About as likely as not	Low-medium	Sales revenue x percentage change	Customer-centric design and specification is central to our design and procurement ethos – resulting in careful selection of materials and products. We use a fabric first, 'fit and forget' approach, which will minimise customer impact. We are undertaking research and development programmes which will prototype test different technologies and	125 training days across the group.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								construction methods prior to taking to market. Communication and training programme for sales advisors to promote the wellbeing and cost-saving benefits of low-carbon homes to customers. Developed a commissioning manual to ensure correct set up of heating and ventilation equipment.	

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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

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CC5.1e

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

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**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

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**Further Information**

**Page: CC6. Climate Change Opportunities**

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**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

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**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
Fuel/energy taxes and regulations	Developing higher energy efficiency	Increased demand for existing products/services	3 to 6 years	Direct	Likely	Medium	Increased sales rates and sales values due to	The business is updating its core house type range and is	The house type and OSM project has an approximate

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	homes that result in lower running costs.						competitive advantage of high quality, efficient to run homes, particularly versus the older UK housing stock	prototyping them using off site manufacturing techniques. The new housetype designs and specifications aim to deliver more comfortable, appealing and cheaper to run homes.	cost of £700,000.
Fuel/energy taxes and regulations	Pursuing opportunities for reductions in operational energy use. Working towards greater energy efficiency, resource efficiency.	Reduced operational costs	1 to 3 years	Direct	Very likely	Low-medium	£2m x percentage decrease, estimated to be in the range of 5-10% = £100 - £200k	Make Waste History campaign in place, which generates ideas for resource efficiency improvement. A league table encourages sites to reduce waste and a monetary award is given to the winning site team. The business reviews operational costs for energy, water	The house type and OSM project has an approximate cost of £700,000. The business invested £80,000 on new LED lighting in head office.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>consumption at offices and sites, and researches reduction opportunities. An example has been the replacement of fluorescent tubes with LEDs in Head Office. Monthly reporting including cost and consumption metrics. The business is updating its core house type range and is prototyping them using off site manufacturing techniques. This will lead to less energy consumed on site with reduced need for equipment such as diesel generators and reduced transport</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								movements to and around site as more materials are put together offsite.in reduced waste.	
Fuel/energy taxes and regulations	Pursuing opportunities for reductions in materials and resource use to achieve leaner, smarter production.	Reduced operational costs	1 to 3 years	Direct	Virtually certain	Low-medium	£10m x percentage decrease in the range of 1 – 5%, £100 - £500,000	Make Waste History campaign in place, which generates ideas for resource efficiency improvement. A league table encourages sites to reduce waste and a monetary award is given to the winning site team. The business reviews operational costs for energy, water consumption at offices and sites, and researches reduction opportunities. An example has been the	The house type and OSM project has an approximate cost of £700,000

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								replacement of fluorescent tubes with LEDs in Head Office. Monthly reporting including cost and consumption metrics. The business is updating its core house type range and is prototyping them using off site manufacturing (OSM) techniques. Due to the nature of manufacturing in a factory environment, less waste will be produced due to fewer offcuts and less risk of material being damaged on site.	
General environmental regulations,	Cost-effective compliance with evolving	Reduced capital costs	1 to 3 years	Direct	Very likely	Medium	Ability to mitigate potential costs	Involvement in industry groups. The business is prototyping off-	The house type and OSM project has an approximate

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
including planning	building regulations and climate change legislation informed by participation in pilot schemes and R&D projects.						resulting from not complying or achieving building regulations. Reducing cost of failure.	site manufacturing techniques that are more resilient to weather impacts during construction, use less energy and raw materials in construction and will further improve quality.	cost of £700,000

#### CC6.1b

Please describe your 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
Change in temperature extremes	Considering the potential threat of overheating in highly insulated homes and the opportunities afforded by cost-effectively	Other: Ensuring continuing demand for products/services	1 to 3 years	Direct	Likely	Low-medium	Higher sales rates (potential for value uplift). Lower risk of claims.	Full dynamic overheating assessments will be undertaken on the new group house type range. Each bespoke site is risk assessed for overheating and	£5k per affected site.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	'future-proofing' homes.							where required dynamic modelling will be undertaken to understand whether action is required	

CC6.1c

Please describe your 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
Reputation	Differentiation through sector-leading climate change performance and risk management	Other: Selected as preferred development partner/ increased ability to secure planning permission - professional reliable partner.	1 to 3 years	Direct	About as likely as not	Low-medium	e.g. 2-10% additional sites secured	Engagement and influence with key stakeholders including policy-makers. Representation on working groups reporting to key development partners - contributing thought-leadership and an evidence base to inform future plans	No additional cost based on current business activity
Changing consumer behavior	Versatility, track-record and reputation	Increased demand for existing products/services	1 to 3 years	Direct	About as likely as not	Low-medium	Price premium on sale values.	Project prototyping new house designs and construction	The house type and OSM project has an

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	enable capture of larger customer base.							methods developing high-quality energy efficient designs and specifications. This is coupled with innovative ways to engage and inform customers on behavioural changes which can contribute to a reduction in running costs and more sustainable outcomes.	approximate cost of £700,000
Other drivers	Innovative, proven and viable solutions consistently applied, including low-carbon processes, products and technologies	Reduced operational costs	3 to 6 years	Direct	More likely than not	Low-medium	£10m x percentage decrease in the range of 1 – 5%	Make Waste History campaign in place, which generates ideas for resource efficiency improvement. The business reviews operational costs for energy, water consumption at offices and sites, and researches reduction opportunities. An example has been the replacement of fluorescent tubes with LEDs in Head Office Development of low-carbon specifications, installation and	Energy and waste reporting is established within the business and there is no additional cost. £80,000 invested in efficient LED lighting

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

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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

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CC6.1e

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

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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

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**Further Information**

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

**Page: CC7. Emissions Methodology**

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**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	Wed 01 Nov 2006 - Wed 31 Oct 2007	467
Scope 2 (location-based)	Wed 01 Nov 2006 - Wed 31 Oct 2007	732
Scope 2 (market-based)		

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**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)

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**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

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**CC7.3**

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

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	IPCC Fourth Assessment Report (AR4 - 100 year)

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**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	412.05	kg CO2e per MWh	Defra 2016
Natural gas	184.00	kg CO2e per MWh	Defra 2016

Fuel/Material/Energy	Emission Factor	Unit	Reference
Diesel/Gas oil	2.97	kg CO2e per liter	Defra 2016
Motor gasoline	2.2	kg CO2e per liter	Defra 2016

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**Further Information**

**Page: CC8. Emissions Data - (1 Nov 2015 - 31 Oct 2016)**

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**CC8.1**

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

Operational control

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**CC8.2**

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

4374

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**CC8.3**

**Please describe your approach to reporting Scope 2 emissions**

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	Scope 2 emissions reported as both market based and location based in our Integrated Report.

**CC8.3a**

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

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
2223	1676	Crest Nicholson measured their market-based scope 2 emissions for the first time this financial year. Until we have several years of market-based data, we will continue to use and report the location-based figure.

**CC8.4**

**Are there 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 location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
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**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	More than 10% but less than or equal to 20%	Assumptions Extrapolation	Extrapolated from metered site consumption to cover 100% of plot completions. Business travel/personal travel split for fuel-cards.
Scope 2 (location-based)	More than 10% but less than or equal to 20%	Assumptions Extrapolation	Extrapolated from metered site consumption to cover 100% of plot completions.
Scope 2 (market-based)	More than 10% but less than or equal to 20%	Assumptions Extrapolation	Extrapolated from metered site consumption to cover 100% of plot completions.

**CC8.6**

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

Third party verification or assurance process in place

**CC8.6a**

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC8.6a/Verco GHG 2016 verification statement - ALL SCOPES - 17-01-17 ISSUED and FINAL.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC8.6a/Verco GHG 2016 verification statement - ALL SCOPES - 17-01-17 ISSUED and FINAL.pdf</a>	p1 and p2.	ISO14064-3	100

**CC8.6b**

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

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
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**CC8.7**

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

**CC8.7a**

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

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2017/59/4059/Climate%20Change%202017/Shared%20Documents/Attachments/CC8.7a/Verco%20GHG%202016%20verification%20statement%20-%20ALL%20SCOPES%20-%2017-01-17%20ISSUED%20and%20FINAL.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC8.7a/Verco GHG 2016 verification statement - ALL SCOPES - 17-01-17 ISSUED and FINAL.pdf</a>	p1 and p2	ISO14064-3	100
Market-based	Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2017/59/4059/Climate%20Change%202017/Shared%20Documents/Attachments/CC8.7a/Verco%20GHG%202016%20verification%20statement%20-%20ALL%20SCOPES%20-%2017-01-17%20ISSUED%20and%20FINAL.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC8.7a/Verco GHG 2016 verification statement - ALL SCOPES - 17-01-17 ISSUED and FINAL.pdf</a>	p1 and p2	ISO14064-3	100

#### 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
No additional data verified	

#### CC8.9

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

No

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CC8.9a

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

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**Further Information**

**Page: CC9. Scope 1 Emissions Breakdown - (1 Nov 2015 - 31 Oct 2016)**

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CC9.1

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

No

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CC9.1a

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

Country/Region	Scope 1 metric tonnes CO2e

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**CC9.2**

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

By facility

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**CC9.2a**

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

Business division	Scope 1 emissions (metric tonnes CO2e)

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**CC9.2b**

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Offices	241		
Construction sites	3072		
Business travel	1061		

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**CC9.2c**

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
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CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
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**Further Information**

**Page: CC10. Scope 2 Emissions Breakdown - (1 Nov 2015 - 31 Oct 2016)**

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CC10.1

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

No

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CC10.1a

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

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
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**CC10.2**

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

By facility

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**CC10.2a**

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

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
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**CC10.2b**

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

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Offices	341	221
Construction sites	1883	1455

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**CC10.2c**

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

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

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**Further Information**

**Page: CC11. Energy**

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**CC11.1**

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

More than 0% but less than or equal to 5%

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**CC11.2**

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

Energy type	MWh
Heat	0
Steam	0
Cooling	0

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**CC11.3**

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

17440

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**CC11.3a**

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

Fuels	MWh
Natural gas	4527
Diesel/Gas oil	12373
Motor gasoline	267
Liquefied petroleum gas (LPG)	273

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**CC11.4**

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

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
Contract with suppliers or utilities, with a supplier-specific emission rate, not backed by electricity attribute certificates	616	0	Two of our offices are on renewable energy tariffs.

#### CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
5376	5376				We collect diesel consumption data but we do not break down the diesel use on site between generator use and fuel for the forklifts and other plant and machinery. Therefore the remaining answers are unknown, unless we make some significant assumptions. Understanding this data more fully will be of value to us in the future.

#### Further Information

**CC12.1**

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

Decreased

**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	Please explain and include calculation
Emissions reduction activities	14.1	Decrease	As per 3.3b Crest Nicholson have implemented a number of emission reduction activities that total 1009.5tCO <sub>2</sub> e. These included the installation of LED lights in Head Office, diesel reduction through reduced use of generators and IT equipment upgrades. $1009.5 / 7160 \times 100 = 14.1\%$ of the FY15 carbon footprint
Divestment	0	No change	Not applicable
Acquisitions	0	No change	Not applicable
Mergers	0	No change	Not applicable
Change in output	2.0	Increase	Build completions increased by 6%, from 2,763 in 2015 to 2,930 in 2016. These factors contributed to a 146tCO <sub>2</sub> e (excluding Scope 3 WTT) increase in site based electricity consumption. $146 / 7160 \times 100 = 2\%$ of the FY15 carbon footprint (Scopes 1 and 2)
Change in methodology	0	No change	Not applicable
Change in boundary	0	No change	Not applicable
Change in physical operating conditions	0	No change	Not applicable
Unidentified	0	No change	Not applicable
Other	0	No change	Not applicable

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

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 (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.0000066	metric tonnes CO2e	997000000	Location-based	25.8	Decrease	The direction of change is downward due to our carbon emission reduction activities. Our revenue also increased. FY2016 calculation: 6597tCO2e / £997m = 0.0000066. FY2015 calculation: 7160 tCO2e / £804.8m = 0.0000089

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
7.77	metric tonnes CO2e	full time equivalent (FTE) employee	849	Location-based	14.05	Decrease	The direction of change is downward due to our carbon emission reduction activities. Our number of employees also increased. FY2016 calculation: 6597tCO2e / 849. FY2015 calculation: 7160 tCO2 / 792 FTE = 9.04
2.44	metric tonnes CO2e	Other: 1,000 square feet	2701	Location-based	8.96	Decrease	Based on the floor area of homes built over this period. The direction of change is downward due to our carbon emission reduction activities. 2,700,901 square feet – which comprises the sum of both full and, in proportion, partial built complete delivery during FY2016. FY2016 calculation: 6597tCO2e / 2701 per thousand sqft = 2.44. FY2015 calculation: 7160 tCO2 / 2,667 per thousand sqft = 2.68

#### 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
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**CC13.1b**

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

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**CC13.2**

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

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**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 CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance
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**Further Information**

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
Purchased goods and services	Relevant, calculated	23.7	GHG Protocol / Defra voluntary reporting guidance. Metered activity data from offices and sites. Emissions calculated using Defra 2016 conversion factors. GWPs from IPCC Fourth Assessment Report (AR4 – 100 year). Total water consumed (69,000 m3) multiplied by the Defra 2016 conversion factor 0.344.	100.00%	Water usage for offices and sites
Capital goods	Relevant, not yet calculated				Fuel consumption associated with site cabins, plant and machinery on site is included within the Scope 1 and 2 emissions. There is currently insufficient data to accurately report on emissions associated with materials used in production.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	1116	GHG Protocol / Defra voluntary reporting guidance. Metered electricity and gas data from offices and sites. LPG supplier data and site purchase records for diesel. Emissions calculated using Defra 2016 conversion factors. GWPs from IPCC Fourth Assessment Report (AR4 – 100 year). This includes the Well to Tank (WTT) emissions associated with electricity and gas consumption for offices and sites and the LPG and diesel consumption on site.	100.00%	Well to Tank (WTT) emissions. Electricity and gas consumption for offices & sites. LPG and diesel consumption on site.

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
Upstream transportation and distribution	Relevant, not yet calculated				Currently insufficient data but will be considered in future years
Waste generated in operations	Relevant, calculated	4.9	GHG Protocol / Defra voluntary reporting guidance. Activity data from waste contractor for offices and sites. Emissions calculated using Defra 2016 conversion factors. GWPs from IPCC Fourth Assessment Report (AR4 – 100 year). Includes construction waste sent to landfill (867 tonnes), office waste sent to landfill (15 tonnes) and waste to energy (11 tonnes) multiplied by the relevant Defra 2016 conversion factor.	100.00%	Recycled, landfilled and incinerated office waste and landfilled construction waste.
Business travel	Relevant, calculated	956	GHG Protocol / Defra voluntary reporting guidance. Based on employee expenses and fuel card records. Emissions calculated using Defra 2016 conversion factors. GWPs from IPCC Fourth Assessment Report (AR4 – 100 year). Includes the Scope 3 Well to Tank (WTT) emissions for business travel, company owned vehicles and employee owned vehicles, multiplied by the relevant Defra 2016 conversion factor.	100.00%	This figure includes Scope 3 and Scope 3 Well to Tank (WTT) emissions for business travel, company owned vehicles and employee owned vehicles.
Employee commuting	Relevant, calculated	816	GHG Protocol / Defra voluntary reporting guidance. Employee survey was carried out to ascertain distances travelled and type of transport used. Emissions calculated using Defra 2016 conversion factors. GWPs from IPCC Fourth Assessment Report (AR4 – 100 year). Includes Well to Tank (WTT) emissions associated with employee commuting, multiplied by the relevant Defra 2016 conversion factor.	100.00%	This figure includes Well to Tank (WTT) emissions. Commuting data was extrapolated up based on response rate to give 100%.
Upstream leased assets	Not relevant, explanation provided				Upstream emissions from leased assets included in the reported Scope 1 and Scope 2 emissions.

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
Downstream transportation and distribution	Not relevant, explanation provided				Downstream transportation and distribution is not relevant to our operations.
Processing of sold products	Not relevant, explanation provided				Processing of sold products is not relevant to our operations.
Use of sold products	Relevant, not yet calculated				Currently insufficient primary data but will be considered in future years.
End of life treatment of sold products	Relevant, not yet calculated				Currently insufficient data but will be considered in future years.
Downstream leased assets	Relevant, not yet calculated				Currently insufficient data but will be considered in future years.
Franchises	Not relevant, explanation provided				Our operations do not include any franchises.
Investments	Not relevant, explanation provided				Investments that are under our operational control are reported under our Scope 1 and 2 emissions.
Other (upstream)					
Other (downstream)					

**CC14.2**

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

Third party verification or assurance process in place

**CC14.2a**

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2017/59/4059/Climate%20Change%202017/Shared%20Documents/Attachments/CC14.2a/Verco%20GHG%202016%20verification%20statement%20-%20ALL%20SCOPES%20-%2017-01-17%20ISSUED%20and%20FINAL.pdf">https://www.cdp.net/sites/2017/59/4059/Climate Change 2017/Shared Documents/Attachments/CC14.2a/Verco GHG 2016 verification statement - ALL SCOPES - 17-01-17 ISSUED and FINAL.pdf</a>	p1 and p2	ISO14064-3	100

**CC14.3**

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

Yes

**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
Purchased goods & services	Change in output	6	Increase	2015 tCO2e was 22.3 and 2016 was 23.7. While there was a decrease in office consumption, the increase comes from the increased water consumption on site which is due to an increase in homes delivered.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	4	Decrease	2015 was 1162tCO2e and 2016 was 1116tCO2e Decrease due to reduced diesel consumption on sites.
Waste generated in operations	Change in methodology	206	Increase	2015 tCO2e was 1.6 and 2016 was 4.9tCO2e. Increase due to better information from waste providers and managed offices.
Business travel	Change in output	13	Increase	2015 was 846tCO2e and 2016 was 956tCO2e. Increase reflects an increase in the number of homes built across the Group and the associated increase in travel.
Employee commuting	Change in output	10	Increase	2015 tCO2e was 741.8 and 2016 was 816.3. The increase was driven by an increased number of staff, more people commuting to work by private transportation, coupled with a decrease in the use of public transportation.

#### 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, our suppliers

Yes, our customers

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**

1. Customers

(i) Multiple methods are used to engage with our customers. Information on reducing energy and water use (lowering carbon emissions) is available in our Home

Owners Guides that are provided to each customer. Our employees on site provide home demonstrations to our customers. These illustrate how to use the various pieces of technology, for example, how to optimise use of the boiler. Any further queries our customers have can be discussed with our customer service teams.

(ii) All customers receive the Home Owner Guides and home demonstrations. Priority will be given to the aspects of the home that our customers need to operate.

(iii) A measure of success is our customer satisfaction scores and comments on our home demonstrations and quality of the home.

## 2. Suppliers

(i) Our Sustainable Procurement Policy and Sustainable Timber Policy sets out a framework for considering environmental and social criteria when selecting products or suppliers. For example, we specify timber from sustainable sources (e.g. FSC) and audit our supply chain on a quarterly basis to ensure compliance. We have also identified key suppliers whom we have group agreements with to review how they manage their environmental and social risks. We are working with suppliers to explore methods where more can be done in a factory environment that will further improve quality, improve productivity and reduce resource use on site. We also work with our suppliers to:

- Identify products with high efficiency and low energy/water demand in use
- Identify products that will reduce wastage on site
- Enhance home designs
- Utilise home occupier friendly interface and controls

(ii) Following the timber audits, we prioritise action based on those that are perceived to be highest risk. This is based on a number of factors including whether they have certification, source of timber, the amount of timber we purchase from them.

(iii) Success factors include customer satisfaction results, product innovations through working in partnership with our supply chain and product reliability.

## 3. Partners in the value chain

(i) We collaborate with other partners in the value chain. For example, our partner with our waste management broker to reduce waste on site via new innovations and education of our site teams. We also communicate and educate our employees of the importance of and how to reduce our physical waste and energy consumption.

(ii) To prioritise action, we review our carbon footprint and determine the largest areas of consumption and evaluate what can be done to make reductions. Work is then undertaken to review the costs and benefits of any proposed action prior to rollout.

(iii) Key success factors will include the impact any initiatives have on the following:

- Transport emissions
- Use of energy and water on-site
- Use of energy and water in offices
- Waste generated on site and in our offices

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### 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**

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Active engagement	18	3%	Following a prioritisation exercise, we met with a number of our key suppliers to better understand how they are managing their environmental and social impacts and what they are doing to reduce GHG emissions. Following this, we are reviewing minimum standards that we expect our supply chain to meet. We have also engaged with several suppliers on waste reduction, which has included take back schemes and offsite manufacturing.

CC14.4c

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
Chris Tinker	Executive Board Director, Strategic Projects and Regeneration Chairman and Executive Management Team Member. Board Member responsible for Sustainability.	Board/Executive board

**Further Information**

**CDP 2017 Climate Change 2017 Information Request**