Shanks Group CR Report

CR performance indicators: Indicators and definitions 2013 report

Contents

Note – indicators in the tables highlighted in green are new and/or revised

1. Chief Executive's statement

Corporate responsibility (CR) – sustainable performance

Shanks Group is committed to the highest standards of corporate responsibility (CR). These standards are upheld by strong leadership, employee commitment and the way we do business every day. In addition, it is important that we measure our CR performance and results and progress objectively and consistently across the Group.

This document outlines Shanks' key CR performance measures and how they are calculated, including environmental issues, health and safety performance, employee data and information on Shanks' approach to its wider stakeholders. These performance indicators will be used in Shanks' Group Corporate Responsibility Report 2013. Please note that there are some additional performance indicators required for this year. These are to allow Shanks to continue to meet the requirements of the Global Reporting Initiative (GRI).

Our CR performance indicators should be as accurate as possible and produced on time to enable the Group CR Report to be published at the same time as the company's Annual Report.

Thank you for your efforts on this important task, which supports Shanks' ongoing commitment and focus on CR.

Peter Dilnot,
Group CEO,
Shanks Group plc.

2. General reporting guidelines

The below tables show the CR performance indicators which will be used in Shanks 2013 Group CR Report. These are listed by type (environment, employee wellbeing, wider community etc). Each indicator is listed by what it is, the units the indicator is reported in and comments plus methods of calculation for the indicator where appropriate. For many indicators the method of calculation is obvious, while for others more explanation is provided. However, in general:

- ✓ The annual CR Report reports performance on a financial year basis. For example, 1st April 2012 to 31st March 2013. However, where data is collected on a calendar year (January – December) for regulatory purposes (for example where an environmental regulator requires an annual report) such data is acceptable, but must be marked as being based on a calendar year and not financial year
- ✓ The report covers all operating divisions of the Group and all countries of operation and all sites/operations of the Group
- ✓ The report does not include the activities of sub-contractors or suppliers
- ✓ Reporting of Joint Ventures should be agreed on a case-by-case basis. Where Shanks has a less than 50% share in a company, data is not generally included. For example for the UK Joint Venture site at Cumbernauld, environmental data is reported as a proportion representing the shareholding of Shanks (50%) to reflect the financial reporting arrangements (H&S and H.R. parameters are reported as 100% for contractual reasons). The raw data provided to the country data co-ordinator should be for the 100% and then the adjustment can be made accordingly. Specific arrangements for specific joint ventures will be decided on at the Group CR Committee (if in doubt ask)
- ✓ Where an operation was only operational (or owned by Shanks in the case of acquisitions) for part of the year, data should only be reported for that part of the year Shanks operated/owned the site
- ✓ Conversion factors for calculating carbon dioxide emissions are detailed in the table below. These are reviewed regularly and therefore if you have any queries on the conversion factors please contact your country co-ordinator as detailed below

Please note that the Group CR Report is published at the same time as the company's annual financial report. As such the collection of CR performance data on time is critical. If you believe you may have a problem collecting data on time please use the contact details as below.

3. Who to contact with queries

If you have any queries on the below indicators, how they are calculated etc please contact:

Shanks Benelux BE

Steven Ghysens

E-mail: steven.ghysens@enviroplus.be
Office: 0032 (0)5123 2090
Mobile: 0032 (0)4795 79950

Shanks Benelux NL (plus Hazardous Waste and Organics)

Jan Thewissen

E-mail: jan.thewissen@shanks.nl
Office: 0031 (0)174219900
Mobile: 0031 (0)6205 95322

Shanks Group (plus UK)

Geoff Smallwood

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Office: 0044 (0)1908 650578
Mobile: 0044 (0)7836 749865

4. CR performance indicators

4a. Environment – climate change emissions

1. Process based emissions (emissions from waste management processes)

Landfill gas emissions from Shanks landfill sites	CO_2 equivalent tonnes	✓ Emissions are CO_2 emitted from the combustion of collected landfill gas in a flare or engine and landfill gas (CO_2 and CH_4) emitted from the passive venting of collected gas or passively emitted from the surface of the landfill ✓ If a methodology for calculating the emissions for a landfill site already exists (e.g. a method agreed with the regulator for regulatory reporting, this should be used. Otherwise, GasSim (model used in UK for regulatory reporting) should be used ✓ If use of GasSim software is limited to subscribed users, Ray James (UK Technical Adviser), to advise of input data required and Ray to run model for each site ✓ Emissions should be reported for all operational landfill sites and for any closed landfills where we still actively manage the gas
Green waste composting emissions from Shanks operations	CO_2 equivalent tonnes	✓ Green waste composting. Multiply tonnes of green waste composted by conversion factor to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors ✓ Note – green waste composting only – other composting to be calculated as for MBT, AD etc
Other process emissions from Shanks operations, such as MBT, AD etc	CO_2 equivalent tonnes	✓ Such processes will include MBT, mixed waste composting, anaerobic digestion. Technology specific calculations required; Ray James (UK Technical Adviser) to peer review approach taken for different operations across the Group ✓ All of the above to be reported as one figure covering all MBT, AD etc operations ✓ Include a description of the process alongside the data to clarify type of process ✓ See appendix 1 for conversion factors

2. Transport based emissions

Fuel use – Shanks waste collection and transport vehicles	CO_2 equivalent tonnes	✓ All waste and recyclable materials collection, transfer, etc. transport movements by road by Shanks vehicles. This could be to our own facilities or to 3rd party facilities. Where we have contracted a third party to undertake transport on our behalf, this should be excluded (only Shanks vehicles to be included) ✓ Includes any diesel, petrol, LPG, biodiesel, etc. used ✓ Multiply litres of fuel consumed by relevant conversion factor to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors

Fuel use – Shanks waste collection and transport vehicles – continued…	CO_2 equivalent tonnes	✓ Vehicles operated for business purposes but which do not carry waste (such as cars and light vans) should not be included in this indicator (see below) ✓ CO_2 emissions from boat/train used to transport wastes should not be reported as these are operated in all cases by third parties rather than Shanks
Fuel use – Shanks cars and vans (business travel by road)	CO_2 equivalent tonnes	✓ Indicator only reported in past for Shanks NL operations ✓ Now to be collected for all business units

3. Energy use based emissions		
Electricity used at sites and in offices	CO_2 equivalent tonnes	✓ All electricity used at sites and in offices should be included. Includes electric motors etc in recycling and other operations, electric/gas heating, general electricity usage etc ✓ Multiply electricity consumed (kWh) by relevant conversion factor (country-specific factors to be used) to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors ✓ Electricity generated from renewable sources on- site and used on site (other than parasitic usage) should be reported separately so this can be reported appropriately ✓ Imported electricity from renewable sources should be reported separately so that a different conversion factor can be used ✓ If Combined Heat and Power is used this needs to be addressed separately
Gas used at sites and in offices	CO_2 equivalent tonnes	✓ Multiply amount of gas consumed (kWh) by conversion factor to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factor ✓ Emissions from gas consumption to be reported separately from electricity consumption
Fuel used on sites and in offices	CO_2 equivalent tonnes	✓ Includes fuel used in heavy mobile and static plant, oil heating etc ✓ Multiply litres of fuel consumed by relevant conversion factor to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors ✓ If Combined Heat and Power is used this needs to be addressed separately

4. Gross total emissions from significant sources		
Gross total of all above emissions	CO_2 equivalent tonnes	✓ Total of 1 (process emissions), 2 (transport emissions) and 3 (energy use emissions) to give Shanks total carbon emissions expressed as CO_2 equivalent tonnes
The above total represents Shanks emissions. Below are avoidance indicators: That is Shanks activities, such as recycling and recovery and the production of various 'fuels' have a carbon benefit in that they avoid an amount of carbon emissions compared with the fuel or material they are displacing. For example, metals separated for recycling and passed to a processor emit less CO_2 equivalent tonnes than producing the same metal from raw ores. Likewise waste derived fuels may displace fossil fuels such as coal in a cement kiln so reducing CO_2 equivalent tonnes emissions.		

4b. Environment – climate change 'avoidance'

5. Landfill and other 'gas-use' based renewable energy 'avoidance' to above carbon data

Landfill gas power generation	CO_2 equivalent tonnes	✓ Comparison used is CO_2 emissions avoided from average grid electricity generation ✓ Multiply amount of electricity generated (kWh) by relevant conversion factor (country-specific conversion factors to be used) to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors ✓ Report electricity generated and used elsewhere on site and electricity generated and sold to national grid separately. ✓ Exclude parasitic electricity consumption (electricity generated and consumed in the generation of the electricity).
Anaerobic digestion power generation	CO_2 equivalent tonnes	✓ Comparison used is CO_2 emissions avoided from average grid electricity generation ✓ Multiply amount of electricity generated (kWh) by relevant conversion factor (country-specific factors to be used) to get CO_2 equiv. (tonnes) – see appendix 1 for conversion factors ✓ Report electricity generated and used elsewhere on site and electricity generated and sold to national grid separately. ✓ Exclude parasitic electricity consumption (electricity generated and consumed in the generation of the electricity.

6. Waste derived fuels based renewable energy 'avoidance' to above carbon data

Waste derived fuels produced and sold	CO_2 equivalent tonnes	✓ Including icopower pellets, woodchips for biomass incineration, SRF from MBT, etc ✓ Only materials going to production processes to be included. Incineration not included ✓ Emissions avoided to be calculated based on calorific value of fuel, what process it is used in and what fuel it replaces ✓ See appendix 1 for conversion factors

7. Recycling based potential 'avoidance' to the above carbon data

Amount of various waste types recycled	CO_2 equivalent tonnes	✓ Each waste type recycled to be reported separately ✓ Tonnes of waste separated for recycling x relevant conversion factor for each waste type – see appendix 1 for conversion factors

The above sections (1 – 7) represent Shanks carbon 'footprint'

4c. Environment – other indicators

8. Water consumption		
Water used at Shanks sites – tap / potable	Cubic metres (tonnes)	✓ Tap/potable water: water delivered to Shanks sites by the municipal water supply
Water used at Shanks sites – surface water	Cubic metres (tonnes)	✓ Water extracted from inland waters, transitional waters and coastal waters like rivers, lakes, canals etc
Water used at Shanks sites – groundwater	Cubic metres (tonnes)	✓ All water extracted which is from below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil
Water used at Shanks sites – rain water	Cubic metres (tonnes)	✓ All water used from the collection of rain water, liquid precipitation which is accumulated and stored for use (such as from roofs)
Water used at Shanks sites – grey water	Cubic metres (tonnes)	✓ All water used which is wastewater treated and purified to a certain level to be used again as process water (direct re-use on the site itself, whitout treatment, is not included)

9. Bio-diversity and spills		
Location and size of land owned, leased etc in, or next to, protected areas and areas of high biodiversity value	1. Number sites 2. Description (brief) of site and size	✓ Any land owned, managed, leased etc by Shanks which falls under legal definitions relating to environmental protection, special bio-diversity value etc – note, only areas which are specifically identified by legal requirements ✓ **AND**, the same as above, but for land next to Shanks sites (directly next to rather than simply being near to)
Total number and volume of significant spills	1. Number spills 2. Brief descriptions including estimated volume released	✓ Number of spills which were reportable to environmental regulators under site environmental permits. Small scale spills which were not reportable (that is spills which fell below site permit reporting requirements) are not included

10. Waste and resources		
Electricity used at sites and in offices	Kilowatt hours	✓ As for section 3 above under energy use based emissions, but expressed as raw consumption data in kilowatt hours
Gas used at sites and in offices	Cubic metres	✓ As for section 3 above under energy use based emissions, but expressed as raw consumption data in cubic metres used
Fuel used on sites and in offices	Litres	✓ As for section 3 above under energy use based emissions, but expressed as raw consumption data in litres used

Fuel use – Shanks waste collection and transport vehicles	Litres	✓ As for section 2 above under transport use based emissions, but expressed as raw consumption data in litres used
Total waste handled at Shanks sites (all sites but **NOT** transport). **NOTE** – this data is effectively materials used by Shanks	Tonnes	✓ Total waste handled by Shanks sites whether collected by Shanks or third parties, but not wastes collected/transported by Shanks to third party sites. That is the total amount of waste in tonnes accepted at all types of Shanks site ✓ Tonnes of waste handled for Shanks is equivalent to materials used for many other companies (such as production companies). Other materials used, other than wastes, are a minor proportion of Shanks materials usage and are not reported here ✓ Tonnes waste transported are reported on in 'Shanks key facts and figures' table (17 below)
Amount waste recycled and recovered at Shanks sites	Tonnes	✓ All materials separated for recycling/re-use/recovery (e.g. paper, plastics, metal, green waste, solvents, aggregates, soil, etc.) to be reported from all types of facilities undertaking recycling/recovery activities ✓ For recycling plants only those materials that are to be re-used/sent to re-processors are to be included (i.e. not the total received at a recycling facility only that portion which is recycled)
	Tonnes	✓ For recovery operations (such as MBT, AD etc) only that material re-used/sent to a secondary use are to be included (i.e. not the total received at a recovery facility only that portion which is recovered) ✓ Recycling tonnages as above to be separated by waste type as required to calculate potential carbon avoidance as per 7 above on carbon avoidance (recycling based potential avoidance) ✓ Aggregated Group figures for waste types recycled/recovered to be presented in a graph
Proportion of total waste handled recycled/recovered	Percentage of total waste handled	✓ Percentage of wastes received at Shanks sites (all types of site) which are recycled or recovered. See below calculation and notes

Calculation of % of waste recycling/recovered by Shanks

$$\frac{\text{Total waste accepted at Shanks sites (tonnes) whether collected by Shanks or third parties – waste sent to landfill or incineration (tonnes)}}{\text{Total waste handled (that is accepted at) at Shanks sites (tonnes) whether collected by Shanks or by third parties}} \times 100 = \%\ \text{waste recycled and recovered}$$

✓ *For wastes accepted at Shanks landfill sites the % recycled or recovered is zero*

Types of waste accepted by Shanks	Tonnes (for each of the types of waste shown right)	Tonnes of waste accepted at Shanks sites (not simply transported) split into Shanks standard waste categories as required by QlikView reporting (see appendix 2 below for categories). **Note** – where it is not possible to match categories 100% reporters should seek to allocate wastes to the nearest category. **Note** – **ONLY** input wastes required and reporters should not include recyclate products etc sent out of sites in this performance measure. **Note** – **ONLY** use the 'Top Hierarchy' categories as shown in appendix 2 and **NOT** the 'Lower Level Hierarchy' categories
Disposal method used for waste not recycled or recovered	Type of disposal (for each of the disposal routes shown right)	Tonnes of waste sent from Shanks sites (not simply transported) split into: ✓ Landfill ✓ Incineration

4d. Management systems and compliance

11. Management systems

Number sites/operations certified to recognised management systems	Number of sites	✓ Report number of sites certified to ISO14001, EMAS, ISO9001, OHSAS18001, VCA, etc. Specify number of sites certified to each standard separately

12. Compliance

Number environmental convictions and fines	Number convictions/ fines	✓ Convictions (cases where the company goes to court) and significant administrative fines (such as those that can be received in Belgium and the Netherlands) to be reported
Details of environmental convictions and fines	Penalty in £/Euros	✓ Report date of offence, date of prosecution/fine, company concerned, nature of offence and amount of fine
Number of health and safety convictions and fines	Number convictions/ fines	✓ Convictions (cases where the company goes to court) and significant administrative fines (such as those that can be received in Belgium and the Netherlands) to be reported
Details of health and safety convictions and fines	Penalty in £/Euros	✓ Report date of offence, date of prosecution/fine, company concerned, nature of offence and amount of fine
Other convictions and fines	Number convictions/ fines	✓ Legal actions for anti-competitive behaviour, anti-trust and monopoly practices
Details of other convictions and fines	Penalty in £/Euros	✓ Report date of offence, date of prosecution/fine, company concerned, nature of offence and amount of fine

Percentage and total number of business units analysed for risk related to bribery and corruption	Number of operations and % of operations	✓ Number of operations which have undergone risk assessment for bribery and other similar risks to identify higher-risk areas ✓ % of operations which have undergone risk assessment for bribery and other similar risks to identify higher-risk areas

4e. Employee well-being and business ethics

13. Employee workplace injuries

Total employee lost-time injuries	Number total lost time injuries	✓ Total number of lost time injuries (> 1 days absence from work)
Total employee lost-time injury rate	Rate per 100,000 employees	✓ Total number of lost time injuries (> 1 days absence from work) / number of employees x 100,000
Employee >3 day reportable injuries	Number >3 day injuries	✓ Number of >3 day employee injuries
Employee >3 day injury rate	Rate per 100,000 employees	✓ Number of >3 day employee injuries / number of employees x 100,000 (standard rate)
Lost time accident (LTA) frequency rate	Rate per 100,000 days worked	✓ Number of lost time injuries / number of days worked x 100,000
Incident severity rate	Average days lost as result of LTAs	✓ Number of days lost as result of workplace accidents / number of lost time accidents

14. Absence through illness and injury

Total employee absenteeism from work	% of available days	✓ Number of days lost because of illness and injury / total number of days worked x 100
Work related absenteeism from work	% of available days	✓ Number of days lost as the result of workplace injury or illness (such as the above lost time injuries) / total number of days worked x 100
Non-work related absenteeism from work	% of available days	✓ Number of days lost as the result of non-work related injury or illness (such as sports injuries, flu and other non-work related conditions) / total number days worked x 100
Average duration of employee absence	Days	✓ Total number of days lost because of illness and injury / number of employees who were ill or injured
Average frequency of absence	Number of absence periods	✓ Total number of absence periods of whatever length / total number of employees

Employees with more than 2 absence periods	% of workforce	✓ Number of employees who had more than 2 absence periods / total number of employees x 100
Employees with zero absence days	% of workforce	✓ Number of employees which zero absence periods / total number of employees x 100

15. Staffing, employee retention, training and discrimination		
Total number permanent employees	Number employees	✓ Total number of all employees, but not including non-permanent/temporary workers (see definition below and appendix 4) ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2 ✓ Note – employee numbers data presented in annual financial report calculated on a different basis according to accountancy requirements
Number of operational employees	Number employees	✓ Number of operational ('blue-collar') employees, such as operators, lorry drivers, mobile plant drivers etc ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Number of admin, support etc employees	Number employees	✓ Number of non-operational ('white collar') employees, such as managers, support staff, administration staff etc ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Total number male permanent employees	Number employees	✓ Number of male employees (all types) ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Total number female permanent employees	Number employees	✓ Number of female employees (all types) ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Number male directors	Number employees	✓ Number male directors (as listed via Company House etc) – **collected by Group only**
Number female directors	Number employees	✓ Number of female directors (as listed via Company House etc) – **collected by Group only**
Number male operational employees	Number employees	✓ Number male operational employees (blue collar employees)
Number female operational employees	Number employees	✓ Number female operational employees (blue collar employees)
Age profile	Number of employees by age groups	✓ Number of permanent employees split into the following age categories: <25 years old, 25 to 34 years old, 35 to 44 years old, 45 to 54 years old, 55 to 59 years old, >60 years ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2

Number full-time permanent employees	Number employees	✓ Number of full time permanent employees (all types) ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Number part-time permanent employees	Number employees	✓ Number of part-time permanent employees (all types) ✓ Report as annual average: figure at 1st April + figure at 31st March ÷ 2
Permanent employee turn-over	% replacement over year	✓ Number of employees replaced during the year / total average number of employees x 100
Average number of years service	Years	✓ Average number of years served with Shanks for current employees. Total number of years worked for Shanks by all current employees / total number of current employees
Number training days per permanent employee	Days per employee	✓ Estimate only. Include "Toolbox Talks" etc as training
Number external non-permanent workers employed	Number external non-permanent workers	✓ Number of non-permanent workers employed expressed as a FTE (full time equivalent). That is: Total number days worked by non-permanent workers in year / average number of days worked by a full time permanent employee = FTE figure. **NOTE** – see appendix 4
Number fixed term contract non-permanent workers	Number fixed term non-permanent workers	✓ Number of non-permanent workers employed expressed as a FTE (full time equivalent). That is: Total number days worked by non-permanent workers in year / average number of days worked by a full time permanent employee = FTE figure. **NOTE** – see appendix 4
Number of cases of discrimination against employees	1. Number incidents and 2. Description including action taken	✓ Number of confirmed (not simply alleged) cases of discrimination (gender, race, religious, sexual orientation, disability, age etc) ✓ Brief description of the action taken for each incident
Employees covered by formal joint management / worker safety consultation committees	% of total employees covered	✓ Number of employees covered by formal joint management / worker health and safety committees expressed as a % of the total workforce

4f. Wider community

16. Neighbourliness

Number of environmental complaints received	Number complaints received	✓ Number of complaints received from any third party relating to an environmental issue (can be reported direct or via a regulator). Include substantiated and unsubstantiated complaints ✓ If a site has received a particularly high number of complaints, specify the cause of the problem and what corrective action has been taken

Average number of complaints per site	Number per site on average	✓ Total number of complaints / number of operating centres
Details of complaints made by type	Number of various types of complaints	✓ Split into the following categories (numbers for each category required): Odour, litter, vermin (flies, birds, rats etc), traffic (mud on the road, numbers of lorries etc), noise, dust and others

4g. Shanks key facts and figures (collected for Group financial report CR section)

17. Scope of company data

Note much of the below data is already included as above. The key facts and figures data section is simply to show the extent of the Group and to give an indication of the size of its activities. Where data is already included above this is noted next to the indicator. This key facts and figues data is also used in the Group annual financial report.

Number of permanent employees	Number employees	✓ As already reported as above under 15
Number active operating centres	Number operating sites	✓ Not including offices, and other non-operational sites such as closed sites
Number recycling or recovery centres	Number recycling and recovery plants/sites	✓ All recycling and recovery operations
Number operational landfill sites	Number sites	✓ Number of operational landfill sites – not including closed landfill sites
Number waste collection and transport lorries	Number vehicles	✓ Number of waste collection commercial vehicles (not including light vans etc)
Amount of waste collected and/or transported	Tonnes	✓ Amount of waste collected or transported by Shanks commercial vehicles whether taken to a Shanks site or to a third party site – that is all waste collected/transported
Amount of waste handled at Shanks sites	Tonnes	✓ Amount of waste handled at Shanks sites whether collected by Shanks or third parties (that is total waste accepted at Shanks sites) but **NOT** including wastes collected by Shanks and taken to a third party site (as above under section 9)
Amount waste recycled or recovered	Tonnes	✓ Already reported as above under 9 – total amount of waste recycled or recovered at Shanks sites expressed as tonnes
Overall recycling and recovery rate	% of above	✓ As calculated already under section 9 above
Renewable energy generated by Shanks	Megawatt hours	✓ For example electricity generated by landfill gas power stations, AD power generation etc

Version 2 – April 2013

Appendix 1
Carbon conversion factors

Source of emissions	Unit of measurement	Conversion factor to convert to tonnes of carbon dioxide equivalents			
		NL	BE	UK	Canada
1. EMISSIONS					
Transport based emissions					
Diesel for road transport	litres	0.003135[1]	0.0026694[8]	0.0026694[8]	-
Petrol	litres	0.002780	0.0023307[8]	0.0023307[8]	-
LPG	litres	0.001860	0.0014968[8]	0.0014968[8]	-
Bio-ethanol	Litres	0.001600	-	-	-
Biodiesel	litres	Factor depends on specific fuel type; conversion factor to be sought from supplier			
Business travel	Km	-	0.000250416	-	-
Energy use emissions					
Electricity	kWh	0.000455[2] 0.000023[3]	0.0002673[8]	0.00054418[8]	0.000323[4]
Gas	see individual column	0.001825[1] (Nm^3)	0.00018396[8] (kWh)	0.00018396[8] (kWh)	-
Diesel used on sites	litres	0.003135[1]	0.0026694[8]	0.0030289[8]	0.003135[1]
Other fuels	-	Factors for other fuels, including alternative fuels, available – ask your CR contact			
2. POTENTIAL AVOIDED EMISSIONS					
Waste derived fuels produced and sold					
Icopower pellets	tonnes	0.713	-	-	-
Woodchips/Wood for biomass incineration	tonnes	0.747	1,088917[12]	-	-
Wood dust for biomass incineration	tonnes	0.643	1,795025[12]	-	-

SRF from MBT used in cement kilns	tonnes	-	1,532932[12]	1.01426	-
Non dangerous sludge used in cement kilns	tonnes	-	0,469843[12]	-	-
Dangerous sludge used in cement kilns	tonnes	-	0,363036[12]	-	-
Non dangerous impregnated sawdust	tonnes	-	1,237843[12]	-	-
Dangerous impregnated sawdust	tonnes	-	1,203849[12]	-	-
Materials separated for re-use/recycling					
Aggregates (replacing sand)	tonnes	0.0023	0.0001[9]	0.0001[9]	-
Aggregates (replacing gravel/rock)	tonnes	0.0049			
Silt/soil	tonnes		0.0001[9]	0.0001[9]	-
Sieving Sand	tonnes	0.0031			
Asphalt	tonnes	0.019			
Gypsum	tonnes	0.108			
Metals (ferrous)	tonnes	1.736	1.487[10]	1.487[10]	-
Metals (non-ferrous)	tonnes	4.530	12.7[9]	12.7[9]	-
Aluminium	tonnes	6.953			
Copper	tonnes	2.107			
Wood	tonnes		0.0479[9]	0.0479[9]	-
Woodchips (to chipboard industry)	tonnes	0.202	-	-	-
Rock wool	tonnes	0.093			
Plastics	tonnes	1.207[5]	1.55[11]	1.55[11]	-
Plastics (foils)	tonnes	1.472			
Glass[6]	tonnes	0.210	0.253[10]	0.253[10]	-
Glass (flat)	tonnes	0.126			
Paper/cardboard	tonnes	0.817	0.45[9]	0.45[9]	-
Textiles	tonnes	3.432	1.34[9]	1.34[9]	-
Compost (from green waste)	tonnes		0.0039[9]	0.0039[9]	-
Compost for agriculture	tonnes	0.171	-	-	-

Compost for potting soil	tonnes	1.207	-	-	-
Compost for other usage	tonnes	0.800	-	-	-
Digestate	tonnes		0.0635[5]	-	-

Sources of carbon conversion factors

1. Handbook CO_2 performance Ladder 2.0 (version 23rd of June 2011) SKAO
2. Energy from grid in the Netherlands according to Handbook CO_2 performance Ladder 2.0 (version 23rd of June 2011) SKAO
3. Green energy from HVC calculated according to Handbook CO_2 performance Ladder 2.0 (version 23rd of June 2011) SKAO
4. Energy from grid in the State of Ontario Canada, calculated according to Handbook CO_2 performance Ladder 2.0 (version 23rd of June 2011) SKAO
5. Mixed plastics
6. Bottles
7. Reference number not used
8. 2009 Guidelines to DEFRA/DECC's Greenhouse Gas Conversion Factors for Company Reporting (Note: these guidelines have since been updated and some of the conversion factors have changed. However, we will continue to use the 2009 factors for the next few years to allow comparison between years without needing to re-calculate the figures each year.) For electricity, the conversion factor includes transmissions and distribution losses.
9. Carbon Balances and Energy Impacts of the Management of UK Wastes, ERM December 2006
10. Waste management options and climate change, AEA Technology for DG Environnement 2001
11. CO_2 impacts of transporting the UK's recovered paper and plastic bottles to China, WRAP August 2008
12. Avoided emission factors calculated based on substitution, using Factors of the DEFRA/DECC's 2009 and Bilan Carbone de L'ADEME, 2011.

Notes

Waste recycled conversion factors have been chosen from a number of sources as best available. However, treat with care; what is included and excluded should be considered (eg, a factor for emissions avoided by paper recycling may take into account emissions associated with sorting but we have already accounted for this in site energy usage). Full life cycle assessment (LCA) figures will not correlate directly with our operational emissions data as we have not taken an LCA approach.

Appendix 2

Shanks common waste categories

Top Hierarchy	Lower Level Hierarchy	Comments
Description	Description	
PAPER BASED	PAPER	Usually waste outputs rather than inputs
	NEWS & PAMS	
	MIXED PAPER	
	HIGH GRADE PAPER	
	CARDBOARD	

METALS	FERROUS	Usually waste outputs rather than inputs
	NON FERROUS	
RUBBLE	RUBBLE	Usually waste inputs
	GRANULATE	
PLASTICS	PLASTICS	Usually waste outputs rather than inputs
RUBBER	RUBBER	
GLASS & CERAMICS	GLASS & CERAMICS	Usually waste outputs rather than inputs
OTHER RECYCLATES	MIXED RECYCLATES	Usually waste outputs rather than inputs
	OTHER RECYCLATES	
COMPOST	COMPOST	Usually waste outputs rather than inputs
BIOMASS	BIOMASS	Usually waste outputs rather than inputs
WOOD	WOOD CHIPS	May be inputs or outputs
	WOOD TRADING	
	WOOD TREE BARK	
	TIMBER	
GREEN WASTE	GREEN WASTE	Usually waste inputs
	AGRICULTURAL WASTE	
	GARDEN WASTE	
	GREEN WASTE OTHER	
ROCKWOOL	ROCKWOOL	May be inputs or outputs
SOIL / SAND / SLUDGE	SOIL	May be inputs or outputs
	SAND	
	SLUDGE	
SRF / RDF	SRF / RDF	Usually waste outputs
C&D	C&D (construction and demolition)	Usually waste inputs
BULKY WASTE	ELECTRICAL	Usually waste inputs
	BULKY WASTE OTHER	
SPECIAL WASTE	SPECIAL WASTE Other	Usually waste inputs
	MEDICAL WASTE	

FOOD WASTE	FOOD WASTE	Usually waste inputs
COMMERCIAL WASTE	COMMERCIAL WASTE	Usually waste inputs
DOMESTIC WASTE	DOMESTIC WASTE	Usually waste inputs
LIQUID WASTE	LIQUID WASTE	Usually waste inputs
GENERAL WASTE	GENERAL WASTE	Only use if no other alternative
LANDFILL	LANDFILL	Do not use - waste output only
POWER	POWER	Do not use – not a waste category
	POWER ROC'S	
CONTAMINATED SOIL	SOIL	Hazardous wastes
	GRID	
	TAG	
	REUSE	
	SOIL OTHER	
PAINT	PAINT	
	SOLVENTS	
	PAINT OTHER	
	SCRAP / PALLETS	
CONTAMINATED WATER	EXTERNAL	
	SHIPCLEANING	
	SLUDGE	
	WASTE FUEL	
	WATER OTHER	
OTHER	OTHER	Only use if no other alternative

Notes

The above categories are those in QlikView. However, different Shanks countries of operation use different sections of the above as they are relevant to their operations. As such not all reporting will cover all of the above categories. In addition, some Shanks operations are not on QlikView as yet. Reporting should attempt to be as per the above categories, but it is accepted that this may not be 100%. Reporters should match to the above categories as closely as they can, but can use the closest category where there is any doubt.

Appendix 3
Audiences for Shanks Group's CR Report

Many groups of our stakeholders may be interested in Shanks CR Report report. However, from work conducted by Shanks Group CR Committee, we consider the main stakeholder groups the report is aimed at to be:

- ✓ Employees
- ✓ Contractors and suppliers
- ✓ Shareholders and other financial stakeholders
- ✓ Regulators
- ✓ Non-governmental organisations
- ✓ Existing and potential customers and clients
- ✓ Communities and businesses near to Shanks sites and operations
- ✓ Internal and external auditors
- ✓ Researchers
- ✓ Ratings agencies and corporate responsibility organisations

Should any reader of this document consider themselves a major stakeholder who has not been identified above, please contact us via the details at the start of this document. Likewise if you as a reader have any suggestions or comments on how we may improve our reporting we would welcome such comment.

Appendix 4
Non-permanent worker definitions (for section 15 above)

There are three main groups of people who perform tasks for Shanks:

1. **Permanent employees** – have a contract of employment direct with Shanks, and this contract is not for a fixed or limited time period
2. **Non-permanent workers** - variously these persons may be called temporary workers, agency workers, contract workers, accommodation workers, systematic workers, fixed term contract workers or other descriptions. These non-permanent workers may be split into two main categories:
   - ✓ **External non-permanent workers** – temporary, contract, accommodation, systematic etc workers typically employed via an external body such as an agency
   - ✓ **Fixed term contract non-permanent workers** – workers who have a contract with Shanks, but this contract is time limited. Typical examples may be workers contracted for a fixed time period to cover maternity leave, or on a fixed term time limited contract prior to potential permanent employment
3. **Other third parties** – such as contractors performing construction tasks, contract waste collections etc

The difference between permanent employees (1 above) and non-permanent workers (2 above) may be obvious, but the difference between non-permanent workers and other third parties (3 above) such as contractors may be less distinct. If a worker shows the most of the characteristics given in the first column of the table below than it is very likely that they are a non-permanent worker. However, if they show more of the characteristics given in the second column then it is likely they are a contractor or other similar third party and not a non-permanent worker.

Non-permanent worker	Contractor / other third party
Uses Shanks tools, equipment, plant, vehicles etc	Uses their own tools, equipment, plant etc
Works to Shanks procedures	Works to their own procedures approved by Shanks
Is paid by time period (day, hour etc)	Is paid by the job / task
Typically does tasks Shanks employees also do	Typically does tasks Shanks employees do not do

Shanks reporting of data, internally and externally and whether for human resources or corporate responsibility reasons, will be to the above definitions:

- ✓ Permanent employees
- ✓ External non-permanent workers
- ✓ Fixed term contract non-permanent workers

Appendix 5
EPRT emissions data

We use a wide variety of technologies, from recycling systems, anaerobic digestion and mechanical biological treatment to thermal treatment, composting and landfill. These technologies use different processes and their potential significant environmental emissions are often very different: For example, methane emissions are significant for a landfill, but not for a recycling plant. As a result reporting in a meaningful way on potentially significant emissions is complex for us, and requires common indicators and a common set of parameters to report against.

All of our sites operate under environmental permits issued by country or regional regulators. With the exception of Shanks Canadian operations, these permits fall under common European (EU) law. Part of this regulation is that larger facilities are required to report on specified emissions using the European Pollution Release and Transfer (EPRTR) protocols. This gives us a common set of emissions and measures of significance.

However, EPRTR does not cover all of our operations, only larger facilities where the regulator deems there may be significant emissions. In practice this means that Shanks EPRTR emissions reporting covers some 70% of the wastes our sites handle, leaving some 30% not covered. This does not mean we do not report emissions from our non-EPRTR sites - we do but as part of our greenhouse gas/carbon reporting. The table on EPRT emissions in our CR full data document lists our operational types in broad categories, whether they are covered by EPRTR, brief descriptions of potential significant emissions and where Shanks reports on these.

For example, a small or medium sized recycling plant will typically have two significant emissions: Indirect green house gas (GHG) emissions associated with electricity used on site to power recycling equipment and direct GHG emissions from diesel use in heavy mobile plant. There will be other emissions, such as discharges to sewer from employee welfare facilities, but these are very unlikely to be significant. The below table shows our significant emissions types by type and size of operation, whether they are covered by EPRT and where emissions data is reported on:

Significant emission types by operation type				
EPRTR	**% cover**	**Indicative operation types**	**Description of potential significant emissions**	**Where reported**
Waste handling operations falling under EPRTR	**Some 70% of tonnes waste handled**	**Landfills**	Treated leachate to environment/sewer Methane to environment from landfill gas Direct CO2 and other GHG to environment from landfill gas Direct CO2 and other GHG to from green energy generation Direct CO2 and other GHG emissions from fuel use (mobile plant)	**CO_2 and other GHG emissions included in Shanks carbon footprints. Other emissions in EPRT data as below**
		Mechanical Biological treatment	Effluent discharge to environment/sewer Direct CO2 and other GHG to environment Indirect GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Hazardous waste treatment	Effluent discharge to environment/sewer Direct CO2 and other GHG to environment Indirect GHG emissions from power use	
		Major recycling plants	Indirect CO2 and other GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Large composting plants	Direct CO2 and other GHG to environment from compost process Indirect GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Large anaerobic digestion plants	Direct CO2 and other GHG to from green energy generation Indirect GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
Waste handling operations not falling under EPRTR	**Some 30% of tonnes waste handled**	**Medium/minor recycling plants**	Indirect CO2 and other GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	**CO_2 and other GHG emissions included in Shanks carbon footprints**
		Medium/minor recovery plants	Indirect CO2 and other GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Medium anaerobic digestion plants	Direct CO2 and other GHG to from green energy generation Indirect GHG emissions from power use (eg, electricity) Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Waste transfer stations	Direct CO2 and other GHG emissions from fuel use (mobile plant)	
		Civic amenity and similar sites	Direct CO2 and other GHG emissions from fuel use (mobile plant)	
Others	NA	**Vehicles operations**	Direct CO2 and other GHG emissions from fuel use (road lorries)	
		Offices	Indirect CO2 and other GHG emissions from power use (eg, electricity	