



**Key environmental and climate change indicators for the Grindrod group, with performance trends over four years, are presented in the two tables below; followed by detailed summaries for the two divisions (Shipping and Freight) that together comprise 95+% of Grindrod's environmental footprint (98% of total GHG emissions, 99% of waste and 93% of water consumption). Data for the other divisions is incorporated into group totals**

## **ENVIRONMENTAL KPI**

### **Consolidated Grindrod Group (global) footprint trends over four years**

NR – not recorded/reported

<b>Key Performance Indicators</b>	<b>2013</b>	2012	2011	2010
<b>Water and Wastewater (kilolitres)</b>				
Total water usage (land-based and ships)	227 156	191 529	180 824	199 315
Harvested rainwater usage (% of total)	15 296 (7%)	11 942 (6%)	0	0
<b>Land-based water utilisation (kilolitres) (% contribution)</b>				
Domestic office use discharged to municipal sewer	69 307 (33%)	65 634 (34.9%)	70 995 (41.7%)	75 994 (39.5%)
Domestic / office use – not to municipal sewer (e.g. soak away)	7 794 (4%)	6 861 (3.6%)	12 670 (7.4%)	183 (0.1%)
Washing vehicles and equipment discharged to municipal sewer	56 933 (28%)	41 996 (22.3%)	44 673 (26.2%)	61 152 (31.8%)
Washing vehicles and equipment - discharged to ground / storm-water	29 904 (14%)	24 439 (13%)	12 392 (7.3%)	28 146 (14.6%)
Dust suppression - to atmosphere or storm-water system	41 574 (20%)	46 579 (24.7%)	29 584 (17.4%)	20 409 (10.6%)
Other	1 511 (1%)	2 719 (1.4%)	0 (0%)	6 464 (3.4%)
<b>Solid and Liquid Waste (tonnes)</b>				
Total Solid and Liquid Waste Generated (tonnes)	14 328	10 562	7 471	7 564
Solid and Liquid Waste – to landfill (tonnes)	8 120	8 824	6 912	5 971
MARPOL Category 1-6 waste - disposed of at sea or incinerated at sea in accordance with MARPOL (tonnes)	586	687	435	71
Total Land-based Non Hazardous Solid Waste Recycled (tonnes)	4 177 of 7 792 (54%)	1 026 of 2 833 (36.2%)	70.4 of 1068 (6.6%)	481 of 3 058 (15.7%)
<b>Energy, fuel and air emissions:</b>				
Total electricity usage (kWh)	21 416 815	22 560 736	23 699 498	23 483 422
Electricity efficiency (kWh per Full Time Equivalent)	2 791	3 093	3 445	3 736
Land-based diesel (kilolitres)	29 469	30 910	30 795	27 909
Land-based petrol (kilolitres)	413	531	552	533
LPG (tonnes)	19	3	38	1.8
Air pollution – SO <sub>x</sub> emitted (tonnes)	4 988	4 393	2 370	2 778
Air pollution – NO <sub>x</sub> emitted (tonnes)	10 324	7 449	6 378	3 618
Scope 1 and 2 GHG emissions (tonnes CO <sub>2</sub> -e) *	501 275	407 211	364 764	280 731
Total GHG emissions including Scope 3 (tonnes CO <sub>2</sub> -e)	512 376	418 957	374 924	294 446
GHG emissions Intensity (gCO <sub>2</sub> -e per Rand revenue)	15.6	14.9	10.0	9.8
Total Energy Usage Scope 1 and 2 (GJ)	6 119 047	5 421 251	4 761 335	3 454 654
Energy intensity (MJ per Rand revenue)	0.19	0.20	0.13	0.12

\* See breakdown on the following page.

## GRINDROD GROUP GHG EMISSIONS

### Four year trends by GHG Protocol Scope, by Division (2013) and by South African Emissions (2013)

All figures in metric tonnes CO<sub>2</sub>-e

		Group Global Totals				2013 Divisional Analysis				2013 S. AFRICAN SCOPE 1&2 EMISSIONS
		2013	2012	2011	2010	Freight Services	Shipping	Trading	Financial Services and Head Office	
SCOPE 1	Combustion of fuel in ships where company has operational control	328 891	276 535	231 078	145 879	0	328 891	0	0	46 460*
	Company owned and/or operated vehicles, mobile equipment, locomotives	92 603	97 349	97 223	105 307	91 794	0	807	2	73 781
	Combustion in stationary fuel-burning equipment (generators and boilers)	13 618	350	327	589	13 618	0	0	0	190
	HFC refrigerant gases	44 104	9 777	11 810	9 787	3 848	40 255	0	0	44 104
<b>Scope 1 Subtotal</b>		<b>479 216</b>	<b>384 011</b>	<b>340 438</b>	<b>261 561</b>	<b>109 260</b>	<b>369 146</b>	<b>807</b>	<b>2</b>	<b>164 535</b>
<b>SCOPE 2 Total</b>	Purchased electricity	<b>22 059</b>	<b>23 199</b>	<b>24 326</b>	<b>19 170</b>	<b>15 261</b>	<b>0</b>	<b>4 026</b>	<b>2 772</b>	<b>17 023</b>
SCOPE 3 and Other	Purchased electricity - rented out		0	0	585	712	0	0	0	
	Business air travel	1 944	1 851	1 899	6 323	0	0	0	1 944	
	Business travel - car rental	18	17	34	16	0	0	0	0	18
	HCFCs and other non-Kyoto gases	424	357	140	289	30	338	0	0	56
	Waste sent to landfill	8 715	9 521	7 503	6 375	5 966	1 703	1 014	32	
<b>Scope 3 and Other Subtotal</b>		<b>11 101</b>	<b>11 746</b>	<b>10 160</b>	<b>13 715</b>	<b>5 996</b>	<b>2 042</b>	<b>1 014</b>	<b>2 050</b>	
<b>TOTALS</b>	<b>metric tonnes of CO<sub>2</sub>-e</b>	<b>512 376</b>	<b>418 956</b>	<b>374 924</b>	<b>294 446</b>	<b>130 517</b>	<b>371 188</b>	<b>5 848</b>	<b>4 824</b>	<b>181 558</b>
<b>Percentage Contribution:</b>						25.5%	72.5%	1.1%	0.9%	
<b>GHG Emissions Intensity (gCO<sub>2</sub>-e per Rand revenue):</b>		<b>15.60</b>	<b>14.94</b>	<b>10.01</b>	<b>9.75</b>	24.77	85.47	0.22	7.43	

#### Notes:

The Grindrod owned building *Mansion House* previously included under scope 3 electricity emissions, was excluded in 2012 and 2013 as a result of this building no longer falling within Grindrod's operational control criteria.

\* As international shipping emissions are not (yet) included as part of countries' Kyoto Protocol commitments, and as these are difficult to assign to countries, Grindrod's South African shipping emissions reported here are for operationally controlled ships' fuel purchased and combusted within South African EEZ waters. This interpretation of country-specific emissions from this source may change in coming years as guidance is given by the International Maritime Organisation (IMO)

## DETAILED ENVIRONMENTAL FOOTPRINT - SHIPPING

Key performance indicators (KPI)	2013	2012	2011	2010
<b>Water and Wastewater (kilolitres)</b>				
Water usage (kilolitres) not including water generated on board at sea	20 132	20 786	10 510	6 967
Untreated effluent (domestic) – disposed of at sea in accordance with MARPOL (kilolitres)	38 242	24 040	17 442	7 193
Treated effluent – disposed of at sea in accordance with MARPOL(kilolitres)	76 742	5 179	6 368	3 572
<i>Land-based (office) water and wastewater is negligible and is reported as part of group figures.</i>				
<b>Solid Waste (tonnes)</b>				
Total Solid Waste (tonnes)	2 135	2 771	1 134	226
MARPOL Category 1-6 waste - to licensed landfill sites (tonnes)	1 548	2 084	699	155
MARPOL Category 1-6 waste - disposed of at sea or incinerated at sea in accordance with MARPOL (tonnes)	587	687	435	71
<b>Energy, fuel and air emissions:</b>				
Total electricity usage (kWh)	Included in Group total figures			
Marine Diesel Oil (MDO) consumed (tonnes)	4 660	4 528	4 579	3 173
Heavy-Sulphur Fuel Oil (HSFO) consumed (tonnes)	90 701	77 937	65 856	41 205
Low Sulphur Fuel Oil (LSFO) consumed (tonnes)	15 709	10 950	7 582	3 778
Diesel usage in land-based vehicles (kilolitres)	Incl in group	Incl in group	4.4	7.1
Petrol usage in land-based vehicles (kilolitres)	Incl in group	Incl in group	8.8	8.7
Air pollution – SO <sub>x</sub> emitted (tonnes)	4 960	4 364	2 340	1 649
Air pollution – NO <sub>x</sub> emitted (tonnes)	9 261	6 331	5 263	3 352
SO <sub>x</sub> (tonnes) per 1000 NM	3.74	4.31	3.11	4.69
NO <sub>x</sub> (tonnes) per 1000 NM	6.96	6.19	6.89	7.82
Average per-ship CO <sub>2</sub> emissions efficiency (as per IMO guidelines) (gCO <sub>2</sub> -e per tonne-NM)	9.78	11.99	9.08	10.44
Range per-ship CO <sub>2</sub> emissions efficiency (gCO <sub>2</sub> per tonne-NM)	3.60 - 254.14*	2.93 - 673.71*	2.13 - 34.76	3.12 - 27.52

\* High upper figure as a result of more ships steaming with low tonnage due to adverse market conditions.

## DETAILED ENVIRONMENTAL FOOTPRINT - FREIGHT SERVICES

NR – not reported

Key performance indicators	2013	2012	2011	2010
<b>Water and Wastewater (kilolitres)</b>				
Total water usage	194 034	178 247	160 430	184 272
Harvested rainwater usage (% of total)	15 296 (8%)	11 942 (7%)	0	0
Where this water was utilised (and where it ended up) (figures in kilolitres):				
Domestic office use discharged to municipal sewer	56 317 (29%)	55 653 (31%)	61 111 (38%)	67 918 (37%)
Domestic/office use – not to municipal sewer (e.g. soak away)	7 794 (4%)	6 861 (4%)	12 670 (8%)	183 (0.1%)
Washing vehicles and equipment discharged to municipal sewer	56 933 (29%)	41 996 (24%)	44 673 (28%)	61 152 (33%)
Washing vehicles and equipment - discharged to ground / storm-water	29 904 (16%)	24 439 (14%)	12 392 (8%)	28 146 (15%)
Dust suppression - to atmosphere or storm-water system	41 574 (21%)	46 579 (26%)	29 584 (18%)	20 409 (11%)
Other	1 515 (1%)	2 719 (2%)	0	6 464 (4%)
<b>Solid and Liquid Waste:</b>				
Total Solid Waste (tonnes)	9 764	5 781	3 369	7 318
Total Liquid Waste (kilolitres)	1 437	1 960	2 930	included in above
Solid Waste to Landfill (tonnes)	4 152	4 749	3 303	5 800
Liquid Waste to Landfill (kilolitres)	1 437	1 949	2 877	included in above
Non Hazardous Solid Waste Recycled (tonnes) (% of total)	5 613 of 7 430 (76%)	1 026 of 2 833 (36.2%)	64 of 1 029 (6.2%)	1 518 of 7 229 (21%)
Hazardous Liquid Waste Recycled (tonnes) (% of total)	43.7 of 1 481 (3%)	10.5 of 1 960 (0.5%)	53 of 2 930 (2%)	NR
<b>Energy, fuel and air emissions</b>				
Total electricity usage (kWh)	14 816 191	19 610 787	20 261 570	20 553 196
Total land-based diesel (kilolitres)	29 234	30 910	30 790	27 900
Total land-based petrol (kilolitres)	409	528	530	511
Parafin (LF-10) (kilolitres)	33	100	NR	NR
Total LPG (tonnes)	4	3	38	1.79
Heavy vehicle diesel emissions efficiency (kg CO <sub>2</sub> per km)	1.38	1.41	1.47	NR
Air pollution – Total SO <sub>x</sub> (tonnes)	27.98	29.42	29.35	28.41
Air pollution – Total NO <sub>x</sub> (tonnes)	1 063	1 119	1 115	906
Heavy vehicle SO <sub>x</sub> emissions (kg SO <sub>x</sub> per 1000km)	0.42	0.43	0.44	NR
Heavy vehicle NO <sub>x</sub> emissions (kg NO <sub>x</sub> per 1000km)	15.87	16.16	16.87	NR