2018 Integrated Annual Report

Environmental Information Supplement

Vision 2020 contains specific emission-related objectives, based on the international GHG Protocol which provides accounting and reporting standards for the management of GHG emissions. These objectives focus on the use of non-renewable fossil fuels in Freight Services and Shipping, which collectively account for approximately 90 percent of the Grindrod carbon footprint.

The approach Grindrod follows, is the operational-control approach, because there are instances in which Grindrod has limited financial control or a minority shareholding, but sufficient operational control to influence emissions-reduction strategies through management or contractual arrangements.

In line with the protocol definition of operational control, Grindrod has disclosed 100 percent of emissions from entities over which it has operational control, but none of entities in which the company does not have full authority to introduce and implement its operating policies.

Operational control is defined in the GHG protocol as “control over an operation if the company or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation”.

Determining authority is based on the objective and auditable existence of at least one of the following:

- **Ownership.** As financial control (either through majority shareholding or through contractual arrangements) and operational control are closely aligned, this forms the starting point for determining operational control. A 51 percent or higher stake in a joint venture or company would indicate a high probability of having a reasonable ability to exert authority.
- **Employee authority.** Regardless of ownership, where Grindrod employees have reasonable ability or authority to make changes to or influence how the business is being run, this would indicate an ability to control operations. This may include an ability to exert control via board representation or direct management control of operations.
- **ISO 14001 EMS.** Where Grindrod has the reasonable ability to directly implement (by implication with own employees) or to influence the development (by non-employees) of an ISO 14001 environmental management system (EMS) or equivalent, this would indicate an ability to control operations.
- **Contractual arrangements.** Where Grindrod has the reasonable ability to impose environmental management directives in contractual obligations, this would indicate an ability to control operations.

The inclusion of “reasonable ability” is an important consideration. Within Shipping, for example, it could be argued that Grindrod has the ability to influence how all of its assets (ships) that are chartered out are managed and run. In reality and in the context of how the global shipping community operates, however, this is not the case.

Given Grindrod’s business model and complex ownership and operational structures, particularly within the Freight Services and Shipping divisions, these screening rules have been applied firstly at company ownership level as well as at the level of asset ownership and operations (i.e. specific ships and land-based facilities) within these companies.

Finally, Grindrod has adopted a conservative approach, including emissions from sources where interpretation of the screening rules are still not 100 percent decisive.

GHG objectives in Vision 2020, against 2010 as base year, are to:

- reduce normalised overall group emissions CO_2-e per rand revenue by ten percent;
- reduce ship-based GHG emissions (CO_2-e) per tonne/NM by an average (across the fleet) of ten percent;
- reduce land-based GHG emissions per km by an average (across the transport fleet) by ten percent;
- reduce normalised land-based Scope 2 electricity consumption in machinery and buildings on property owned and operated by Grindrod) usage by 20 percent; and
- increase the proportion of renewable energy consumption, such as wind- and solar-produced electricity and biofuels, to five percent of total energy usage.

Besides GHG emissions, the combustion of fossil fuels by Grindrod’s shipping and land-based transport activities also produces sulphur oxides (SO_x), nitrous oxides (NO_x) and particulates, while port activities and terminal operations generate dust. Grindrod is committed to managing these impacts responsibly, within legal parameters and, where possible, to reducing levels of air pollution.

Using 2010 as the base year, specific objectives and targets to be achieved by 2020 include a reduction of ten percent in SO_x and NO_x and vehicle emissions (per nautical mile for ships and per kilometre travelled for vehicles). These objectives and targets are met through division-specific improvement programmes that include eco-friendly fleet renewals and the increased use of cleaner fuels and emissions-abatement technologies.

Grindrod subscribes to the international Carbon Disclosure Project (CDP), a global disclosure system that enables companies, cities and regions to measure and manage their environmental impacts. Participants are scored on the following main criteria: disclosure of emissions, awareness of climate change issues, management of climate change, and climate change leadership. Companies are scored from A to E with A being the best at addressing climate change. Grindrod scored a B in the 2018 CDP (2017: C).

In June 2018, Grindrod concluded the successful spin-off of the Shipping division and as such the associated emissions are no longer included in Grindrod's greenhouse gas inventory going forward. For the year on year comparisons between 2018 and 2017 only the first half of the year was considered in order to conduct an equivalent comparison. Next year, the base year emissions will be restated to remove the Shipping emissions from Grindrod's Group greenhouse gas inventory.

Environmental key performance indicators

Key environmental and climate-change indicators for Grindrod are monitored and managed in accordance with its Vision 2020. Shipping and Freight Services comprise 95+ percent of the group's environmental footprint (99 percent of total GHG emissions, 99 percent of waste and 96 percent of water consumption). Data for the other divisions is incorporated into group totals.

The following tables detail performance trends over five years.

Consolidated Grindrod group (global) footprint trends over five years

Key performance indicators	2018	2017	2016	2015	2014
Water and wastewater (kilolitres)					
Total water usage (land-based and ships)	193 300	108 818	152 180	277 523	219 507
Harvested rainwater usage (% of total)	3 156 (1.63%)	5 527 (6.0%)	2 264 (1.5%)	2 620 (1%)	4 858 (2%)
Land-based water utilisation (kilolitres) (% contribution)					
Domestic office use discharged to municipal sewer	45 692 (24%)	32 591 (36%)	44 147 (34%)	84 041 (32%)	66 530 (33%)
Domestic / office use – not to municipal sewer (e.g. soak away)	6 946 (4%)	4 033 (4%)	5 872 (5%)	10 028 (4%)	7 612 (4%)
Washing vehicles and equipment discharged to municipal sewer	37 506 (19%)	21 779 (24%)	31 708 (24%)	75 208 (29%)	57 093 (28%)
Washing vehicles and equipment - discharged to ground / storm-water	22 226 (11%)	12 906 (14%)	18 790 (14%)	37 604 (14%)	28 546 (14%)
Dust suppression - to atmosphere or storm-water system	30 561 (16%)	17 746 (19%)	25 836 (20%)	52 645 (20%)	39 965 (20%)
Other	4 167 (2%)	2 420 (3%)	3 523 (3%)	2 507 (1%)	1 903 (1%)
Solid and liquid waste (tonnes)					
Total solid and liquid waste generated (tonnes)	14 072	20 164	14 070	9 948	10 889
Solid and liquid waste – to landfill (tonnes)	1 909	2 299	619	1 088	1 838
MARPOL category 1-6 waste - disposed of at sea or incinerated at sea in accordance with MARPOL (tonnes)	3 452	1 558	1 867	1 900	158
Total land-based non-hazardous solid waste recycled (tonnes)	192 of 454 (42%)	530 of 868 (61%)	382 of 920 (42%)	5 172 of 9 948 (52%)	5 594 of 10 889 (52%)
Energy, fuel and air emissions:					
Total electricity usage (kWh)	16 718 476	18 390 686	18 799 752	19 061 710	22 085 003
Electricity efficiency (kWh per Full Time Equivalent)	3 536	3 515	3 197	2 706	2 942
Land-based diesel (kilolitres)	21 468	19 202	19 172	24 315	23 009
Land-based petrol (kilolitres)	118	121	186	602	278
LPG (tonnes)	4	4	10	8	15
Air pollution – SO_x emitted (tonnes)	3 674	5 806**	5 547	4 922	5 006
Air pollution – NO_x emitted (tonnes)	7 105	11 005**	10 378	10 302	10 138
Scope 1 and 2 GHG emissions (tonnes CO_2-e) *	331 026	479 999**	444 695	462 896	431 665
Total GHG emissions including scope 3 (tonnes CO_2-e)	356 183	489 740**	453 590	480 782	443 911
GHG emissions Intensity (gCO_2-e per Rand revenue)	104.06	160.08**	137.96	17.17	13.57
Total energy usage scope 1 and 2 (GJ)	4 527 760	6 468 767**	6 495 578	6 512 775	6 698 816
Energy intensity (MJ per Rand revenue)	1.32	2.11**	1.98	0.23	0.20

***** See breakdown on the following page.
** Shipping values restated due to a calculation error in 2017.

Consolidated Grindrod group (global) footprint trends restated

Key performance indicators#	2018	2017	2016	2015	2014
Scope 1 and 2 GHG emissions (tonnes CO_2-e) *	286 096	306 827			
Total GHG emissions including scope 3 (tonnes CO_2-e)	299 452	311 698			
GHG emissions Intensity (gCO_2-e per Rand revenue)	193.2	203.8			
Total energy usage scope 1 and 2 (GJ)	3 794 729	4 738 167			
Energy intensity (MJ per Rand revenue)	2.45	3.10			

#As per the GHG Protocol: The Shipping Division was sold in July 2018. As such this table reports the figures with the Shipping data removed. This is to enable an equivalent comparison for the following year.

Grindrod group GHG emissions

Five year trends by GHG Protocol Scope and a divisional analysis and breakdown of scope 1 and 2 emissions for South African operations for 2018 is as follows:

		Group global totals					2018 divisional analysis			2018
		2018	2017	2016	2015	2014	Freight Services	Shipping	Financial Services and Head Office	South African scope 1&2 emissions
Scope 1	Combustion of fuel in ships where company has operational control*,**	245 016	392 265^	359 175	354 398	340 771	-	245 016	-	27 474
	Company owned and/or operated vehicles, mobile equipment, locomotives	52 818	51 654	51 723	66 347	61 593	52 818	-	-	31 111
	Combustion in stationary fuel-burning equipment (generators and boilers)	6 173	6 574	6 701	7 866	150	6 472	-	-	4 239
	HFC refrigerant gasses	11 606	13 951	12 965	16 020	10 560	10 115	1 491	-	10 115
	CO2	2					2			1.7
	Acetylene	1	1	1	57	157	1			0.39
Scope 1 subtotal		**315 616**	**464 445**	**430 563**	**444 631**	**413 074**	**69 109**	**246 507**	**-**	**72 941**
Scope 2 total	Purchased electricity	15 410	15 554	14 132	18 265	18 592	12 939	-	2 471	6 947
Scope 3	Purchased Goods and Services	247					217	18	11	
	Fuel and Energy Related Activities	14 387					14 232		155	
	Waste generated in Operations	1 983	6 054	3 490	4 847	5 948				
	Business travel	1 392	3 236	5 404	12 982	6 194	Inc. in Group	Inc. in Group	Inc. in Group	
	Employee Commuting	7 148								
Scope 3 & other subtotal		**25 157**	**9 741**	**8 895**	**17 886**	**12 246**	**14 449**	**18**	**166**	
Totals	Metric tonnes of CO_2-e	**356 183**	**489 740**	**453 590**	**480 782**	**443 965**	**96 497**	**246 525**	**2 637**	**79 888**
Percentage contribution GHG emissions intensity (gCO_2-e per Rand revenue)		104.06	**160.08**	**137.96**	**17.17**	**13.57**	**32.63**	**123.41**	**4.92**	

Notes:
All figures in metric tonnes CO_2-e.
***** Grindrod's South African shipping emissions reported here are for operationally controlled ships' fuel purchased and combusted within South African EEZ waters.
* Totals in the Group column may differ from the sum of the individual division vales due to the inclusion of several scope 3 categories under the group value where no divisional split was available
**Note that the reduction in emissions is due to the spin-off of the shipping division. The historic emission swill be restated in next year's report in line with the GHG Protocol Corporate Standard to allow comparative analysis.
^Shipping values restated due to a calculation error in 2017.

Detailed environmental footprint - Shipping

Key performance indicators	2018	2017	2016	2015	2014
Water and wastewater (kilolitres)					
Water usage (kilolitres) not including water generated on board at sea	12 970	17 342	22 303	20 391	17 858
Untreated effluent (domestic) – disposed of at sea in accordance with MARPOL (kilolitres)	12 580	15 922	19 669	16 100	16 588
Treated effluent – disposed of at sea in accordance with MARPOL(kilolitres)	18 870	23 884	29 503	24 150	24 882
Land-based (office) water and wastewater	Incl. in group	Incl. in group	Incl. in group	Incl. in group	Incl. in group
Solid waste (tonnes)					
Total Solid Waste (tonnes)	4 631	4 749	3 793	4 547	1 915
MARPOL category 1-6 waste - to licensed landfill sites (tonnes)	1 179	3 028	1 769	2 233	1 384
MARPOL category 1-6 waste - disposed of at sea or incinerated at sea in accordance with MARPOL (tonnes)	3 452	1 558	1 867	1 900	158
Energy, fuel and air emissions:					
Total electricity usage (kWh)	Incl. in group	Incl. in group	Incl. in group	Incl. in group	Incl. in group
Marine diesel oil (MDO) consumed (tonnes)	7 897	12 389*	8 123	11 628	4 390
Heavy-sulphur fuel oil (HSFO) consumed (tonnes)	65 014	102 870*	101 825	92 700	83 370
Low sulphur fuel oil (LSFO) consumed (tonnes)	4 364	8 467*	5 094	9 029	21 275
Diesel usage in land-based vehicles (kilolitres)	Incl. in group	Incl. in group	Incl. in group	Incl. in group	Incl. in group
Petrol usage in land-based vehicles (kilolitres)	Incl. in group	Incl. in group	Incl. in group	Incl. in group	Incl. in group
Air pollution – SO_x emitted (tonnes)	3 657	5 790*	5 531	4 901	4 986
Air pollution – NO_x emitted (tonnes)	6 486	10 39*2	9 765	9 513	9 354
SO_x (tonnes) per 1000 NM	4.27	4.1*	4.12	3.91	3.47
NO_x (tonnes) per 1000 NM	7.58	7.4*	7.28	7.63	6.55

Average per-ship CO_2 emissions efficiency (as per IMO guidelines) (gCO_2-e per tonne-NM)	16.1	11.4*	11.45	10.20	7.22
Range per-ship CO_2 emissions efficiency (gCO_2 per tonne-NM)	3.84-119.47	42.06–297.93*	6.73–422.09	2.66-240	1.053-684.193

* Shipping values restated due to a calculation error in FY2017

Detailed environmental footprint - Freight Services

Key performance indicators	2018	2017	2016	2015	2014
Water and wastewater (kilolitres)					
Total water usage	138 912	80 664	117 438	250 692	190 309
Harvested rainwater usage (% of total)	3 156 (2.27%)	5 527 (6.41%)	2 264 (1.89%)	2 620 (1%)	4 858 (3%)
Water utilisation and fate (figures in kilolitres)					
Domestic office use discharged to municipal sewer	37 506 (27%)	21 779 (27%)	31 708 (27%)	72 701 (29%)	55 190 (29%)
Domestic/office use – not to municipal sewer (e.g. soak away)	6 946 (5%)	4 033 (5%)	5 872 (5%)	10 028 (4%)	7 612 (4%)
Washing vehicles and equipment discharged to municipal sewer	37 506 (27%)	21 779 (27%)	31 708 (27%)	75 208 (30%)	57 093 (30%)
Washing vehicles and equipment - discharged to ground / storm-water	22 226 (16%)	12 906 (16%)	18 790 (16%)	37 304 (15%)	28 546 (15%)
Dust suppression - to atmosphere or storm-water system	30 561 (22%)	17 746 (22%)	25 836 (22%)	52 645 (21%)	39 965 (21%)
Other	4 167 (3%)	2 420 (3%)	3 523 (3%)	2 507 (1%)	1 903 (1%)
Solid and liquid waste (tonnes)					
Total solid waste (tonnes)	8 124	10 829	6 642	1 218	7 313
Total liquid waste (kilolitres)	1 463	2 023	804	2 601	2 062
Solid waste to landfill (tonnes)	730	2 299	619	1 039	1 719
Liquid waste to landfill (kilolitres)	0	1 512	171	310	1 671
Non-hazardous solid waste recycled (tonnes) (% of total)	192 of 454 (42%)	530 of 868 (61.0%)	382 of 920 (41.5%)	926 of 1 218 (76.0%)	5 594 of 7 313 (76.5%)
Hazardous liquid waste recycled (tonnes) (% of total)	1 265 of 1 317 (96%)	388 of 388 (100%)	160 0f 172 (93%)	0 of 244 (0%)	0 of 2 062 (0%)
Energy, fuel and air emissions:					
Total electricity usage (kWh)	14 007 087	15 779 871	16 170 971	16 533 640	17 449 576
Total land-based diesel (kilolitres)	21 468	19 202	19 172	24 314	22 807
Total land-based petrol (kilolitres)	118	121	186	602	278
Parafin (LF-10) (kilolitres)	-	-	-	-	-
Total LPG (tonnes)	4.4	3.9	10	8	15
Heavy vehicle diesel emissions efficiency (kg CO_2 per km)	1.7	1.04	1.00	1.06	1.11
Air pollution – Total SO_x (tonnes)	16.3	16.35	16.15	20.75	19.25
Air pollution – Total NO_x (tonnes)	619.47	612.68	613.56	788.44	731.5
Heavy vehicle SO_x emissions (kg SO_x per 1000km)	0.45	0.37	0.35	0.37	0.39
Heavy vehicle NOx emissions (kg NO_x per 1000km)	17.18	13.88	13.40	14.15	14.82