

CARBON FOOTPRINT ASSESSMENT

Prepared for Reunert Limited
December 2019

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Carbon footprint summary



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EXECUTIVE SUMMARY

Terra Firma Solutions (Pty) Ltd were commissioned by Reunert Limited to assist and develop their carbon footprint for the reporting period 01/10/2018 to 30/09/2019.

The carbon footprint inventory includes 52 Reunert Limited entities. Reunert has 100% financial control over all entities included in the carbon footprint, with the exception of CBI Electric Telecom Cables (Pty) Ltd, which is a joint venture (50% financial control). Only franchises where Reunert holds majority of share have been included in the scope of this carbon footprint assessment.

The carbon footprint is based on the financial control approach.

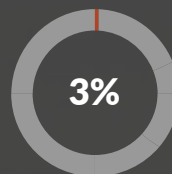
The operational boundaries include scope 1 direct emissions (mobile combustion and stationary combustion), scope 2 indirect emissions (electricity consumption in Reunert owned properties) and scope 3 indirect emissions (electricity consumption in leased properties and warehousing facilities), mobile combustion in leased vehicles, business travel, employee commute, waste, water and material use).

CARBON FOOTPRINT
2018 - 2019

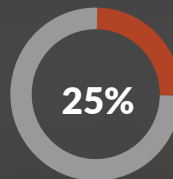
213 848

 tCO₂e

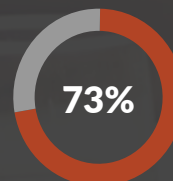
FOLLOWING THE GREENHOUSE GAS PROTOCOL



SCOPE 1: **6 362** tCO₂e



SCOPE 2: **52 410** tCO₂e



SCOPE 3: **155 076** tCO₂e



RECOMMENDATIONS



Reduce carbon footprint



Improve data quality



Set KPI's & targets



Annual reporting

ENERGY EFFICIENCY

Energy efficiency assessments are a valuable exercise to obtain a detailed database of energy opportunities. The assessments investigate voltage and power, lighting, heating ventilation and air conditioning (HVAC) and IT equipment to ensure the building is efficient and is being billed the correct amount.



RENEWABLE ENERGY

Reunert has installed a 297 kWpeak solar PV system in Reunert Park and a 429 kWpeak solar PV system in Fuchs Electronics facilities.

In 2018-2019, Reunert generated 643 MWh's of renewable energy, resulting in an electricity cost saving of R1 016 899, and saving 668 tonnes of CO₂e from being released into the atmosphere.

668 tCO₂e saved in 2018-2019.



INTRODUCTION

PROJECT BACKGROUND

Businesses around the world are increasingly confronted with the topic of climate change, social investment and environmental issues.

It has become apparent that more businesses are fast recognising that their response (or lack thereof) to these issues, poses both risks and opportunities to their triple bottom line.

People, planet and profits.

Reunert has decided to embark on this journey by engaging with Terra Firma Solutions to undertake a Carbon Footprint Assessment (CFA).

Embarking on the aforementioned assessments is an important step in determining the environmental impact of the company as it highlights key areas to focus on emission reductions and can ultimately lead to increased profits from lower energy and fossil fuel costs.

THE KEY COMPANY DRIVERS FOR EMBARKING ON THE CARBON FOOTPRINT ASSESSMENT ARE:

- Set emission reduction goals against which the company can be measured
- Increase operational efficiency and reduce operating costs
- Implement carbon management plans
- Position Reunert Limited as a climate change leader in its sector
- Enhance the level of data accuracy throughout the company
- Differentiate and increase possible market share

CLIENT BACKGROUND

Reunert manages a portfolio of businesses in the fields of Electrical Engineering, Information Communication Technologies (ICT) and Applied Electronics.

The group was established in 1888 by Theodore Reunert and Otto Lenz, and has contributed to the South African economy in numerous ways over the past 130 years.

The group was listed on the JSE in 1948, and is included in the industrial goods and services (electronic and electrical equipment) sector of the JSE. The group primarily operates in South Africa with smaller operations in Australia, Lesotho, Mauritius, the USA, Zambia and Zimbabwe. Reunert’s offices are located in Woodmead, Johannesburg, South Africa.

ELECTRICAL ENGINEERING

The Electrical Engineering segment comprises business units with a significant footprint across the electrical and telecommunications infrastructure industries.

INFORMATION COMMUNICATION TECHNOLOGIES

The segment is adapting to the changing ICT landscape. We are leveraging our strong brands, wide-reaching distribution and service network to build a modern ICT service provider.

APPLIED ELECTRONICS

Applied Electronics develops, manufactures and distributes high-technology electronics to a wide range of industries globally.

<https://www.reunert.co.za/>

PROJECT TEAM

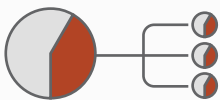
NAME	COMPANY	RESPONSIBILITY
Karen Smith	Reunert Limited	Project Sponsor
Caitlin Keam	Terra Firma Solutions	Analytics Manager
Grete Simanauskaite	Terra Firma Solutions	Carbon Data Analyst

PROJECT DESCRIPTION

PROJECT SCOPE

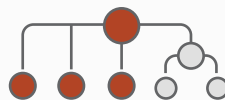
ORGANISATIONAL BOUNDARIES

Organisational boundaries determine whether Greenhouse Gas reporting is done according to one of these approaches:



EQUITY SHARE APPROACH

A company accounts for the emissions from operations according to its share in equity of the operation, where equity share reflects economic interest.



CONTROL APPROACH

Emissions are accounted for from operations which are under the direct control of the parent company; this can be based on either financial control or

CONTROL APPROACH

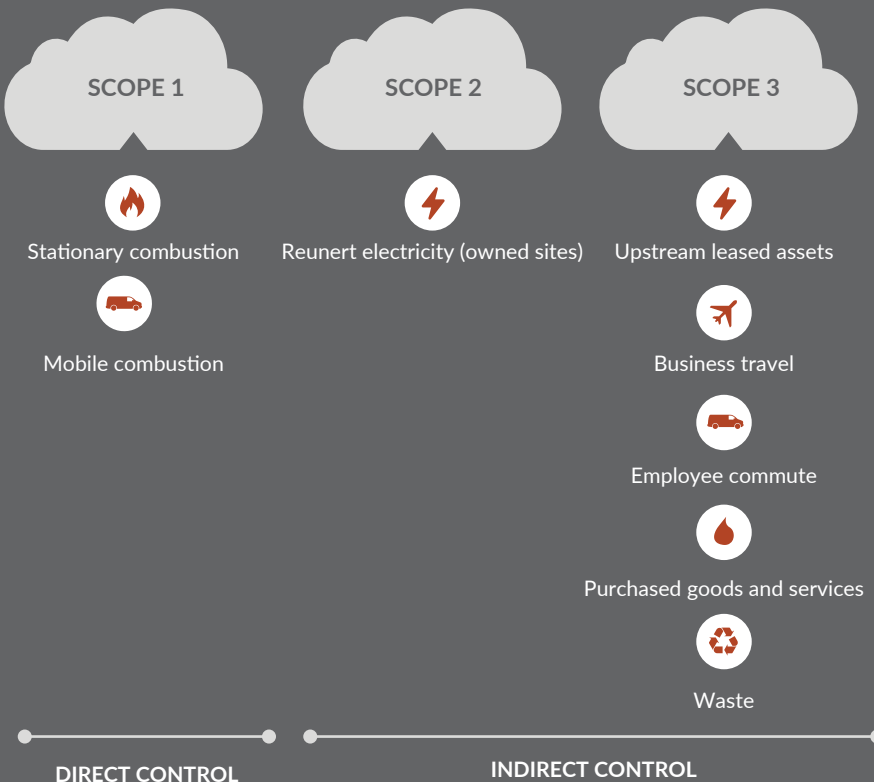
FINANCIAL AND OPERATIONAL

Financial: Can direct the financial policies with the view to gaining economic benefit.

Operational: Can direct operational policies at the operation.

REUNERT HAS CHOSEN THE FINANCIAL CONTROL APPROACH TO MEASURE THE ORGANISATIONS CARBON FOOTPRINT

OPERATIONAL BOUNDARIES



DATA SOURCES

ACTIVITY DATA

- Electricity usage
- Fuel usage
- Transport
- Waste
- Goods and Services

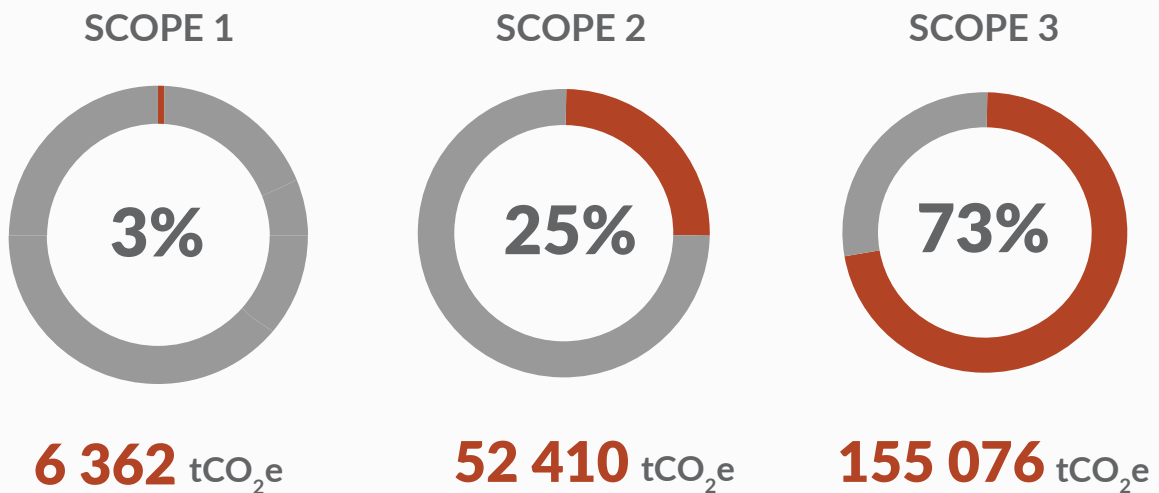
EMISSIONS FACTORS

- DEFRA 2019
- Eskom Annual Report 2019
- IPCC 2006

CARBON FOOTPRINT RESULTS

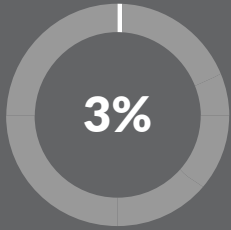
The total greenhouse gas emissions for Reunert Limited have been calculated at **213 848** tonnes of CO₂e, following the Greenhouse Gas Protocol.

213 848 tCO₂e
 FOR THE PERIOD 2018 - 2019
 FOLLOWING THE
 GREENHOUSE GAS PROTOCOL





Emissions associated with material use were the highest contributor to Reunert's carbon footprint at 127 368 tCO₂e (60% of emissions). Electricity consumed by electricity consumption in Reunert owned sites followed at 52 410 tCO₂e (25% of emissions).

SCOPE 1 % OF TOTAL EMISSIONS




SCOPE 1 EMISSIONS

- 63%  Reunert stationary consumption [3 984 tCO₂e]
- 37%  Reunert mobile consumption [2 378 tCO₂e]

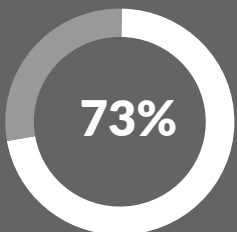
SCOPE 2 % OF TOTAL EMISSIONS








SCOPE 2 EMISSIONS

- 100%  Reunert Electricity (Owned sites) [52 410 tCO₂e]

SCOPE 3 % OF TOTAL EMISSIONS



SCOPE 3 EMISSIONS

- 82%  Purchased goods, services [127 623 tCO₂e]
- 12%  Employee Commute [18 801 tCO₂e]
- 0.1%  Waste [174 tCO₂e]
- 1%  Business Travel [2 192 tCO₂e]
- 4%  Upstream Leased Assets [6 286 tCO₂e]

BENCHMARKING

YEAR-ON-YEAR EMISSIONS

Total tCO ₂ e					
Scope	Emissions Source	2017	2018	2019	% change
Scope 1	Diesel	426	404	336	-17%
	Natural Gas	3 761	3 690	3 466	-6%
	LPG	130	210	139	-34%
	Stationary Combustion	4 317	4 305	3 941	-8%
	Stationary Combustion JV		2	17	610%
	Oil	7	240	22	-91%
	Lubricants	2	9	1	-87%
	Stationary Fuel Non-Energy	21	250	23	-91%
	Stationary Fuel Non-Energy JV		3	3	-2%
	Diesel (mobile)	1 156	1 172	1 178	1%
	Petrol (mobile)	1 147	1 050	1 069	2%
	LPG (mobile)	22	-	-	
	Mobile Combustion	2 325	2 223	2 247	1%
	Mobile Combustion JV	169	131	131	0%
Total Scope 1 Reunert		6 493	6 777	6 211	-8%
Total Scope 1 JV		169	136	150	11%
Total Scope 1		6 662	6 913	6 362	-8%
Scope 2	Electricity	51 778	43 641	48 816	12%
	Electricity JV	4 509	2 928	3 594	23%
Total Scope 2 Reunert		51 788	43 641	48 816	12%
Total Scope 2 JV		4 509	2 928	3 594	23%
Total Scope 2		56 297	46 570	52 410	13%
Total (Scope 1 & 2) Reunert		58 281	50 419	55 027	9%
Total (Scope 1 & 2) JV		4 679	3 064	3 745	22%
Total (Scope 1 & 2)		62 960	53 483	58 772	10%
Scope 3	Material use	181 778	187 012	127 368	-32%
	Outsourced warehousing	129	231	185	-20%
	Water supply	100	107	70	-34%
	Purchased goods, services	182 007	187 350	127 623	-32%
	Employee Commute	-	15 099	18 801	25%
	Transport and distribution	319 542	-	-	0%
	Water treatment	290	476	155	-68%
	Waste disposal	336	231	19	-92%
	Waste	626	707	174	-75%
	Business Travel	2 654	2 986	2 192	-27%
	Mobile Fuel	68	208	196	-6%
	Purchased electricity	6 226	6 145	6 090	-1%
	Upstream leased assets	6 294	6 353	6 286	-1%
Total Scope 3		191 580	212 494	155 076	-27%
Total tCO₂e emissions		254 531	265 977	213 848	-20%

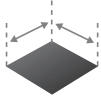


NOTES

- Mobile fuels showed no significant changes.
- Stationary fuel emissions have decreased due to decrease in oil usage for stationary combustion processes.
- Fugitive emissions were present but not reported on due to immateriality and lack of data.
- Electricity consumption data was extrapolated for the missing months. For sites with no electricity data, electricity consumption was extrapolated using kWh/m² values for the same type of building within the group.
- Eskom's grid emission factor in 2019 has increased from 0.95 tCO₂e/MWh to 1.04 tCO₂e/MWh.
- Employee commute survey was conducted as part of the carbon footprint assessment. Data was extrapolated for employees who did not respond.
- Transport and distribution emissions were not accounted for in 2019 carbon footprint assessment.
- Material use has decreased due to decrease in business operations, especially, in Reunert's manufacturing entities.
- Waste production has decreased in line with the decreased material use as well as implementation of waste reduction initiatives.

BENCHMARKING

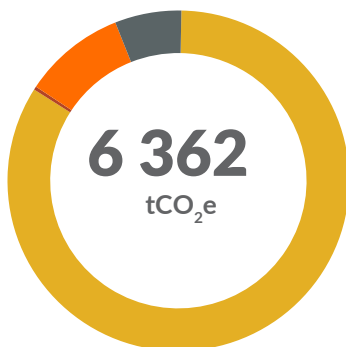
KEY PERFORMANCE INDICATORS

Emissions per square meter, 'mill revenue and per full time employee.

	2017	2018	2019	% change
 SCOPE 1 & 2 tCO ₂ e PER METER SQUARED	0.28	0.19	0.21	12%
 SCOPE 1 & 2 tCO ₂ e PER FULL-TIME EMPLOYEE	11.25	9.72	9.54	-2%
 SCOPE 1 & 2 tCO ₂ e PER 'MILL REVENUE	6.12	4.95	5.32	7%

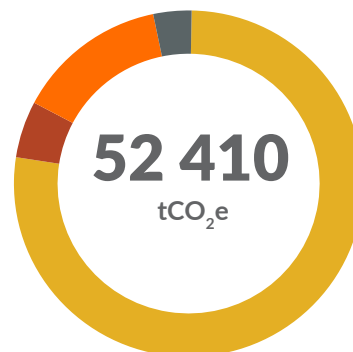
BENCHMARKING PER DIVISION

SCOPE 1 EMISSIONS



- 84% ● Electrical Engineering [5 326 tCO₂e]
- 10% ● Applied Electronics [615 tCO₂e]
- 6% ● ICT [400 tCO₂e]
- 0.3% ● Group Services ('Other') [20 tCO₂e]

SCOPE 2 EMISSIONS



- 77% ● Electrical Engineering [40 441 tCO₂e]
- 14% ● Applied Electronics [7 347 tCO₂e]
- 4% ● ICT [1 853 tCO₂e]
- 5% ● Group Services ('Other') [2 769 tCO₂e]

BENCHMARKING

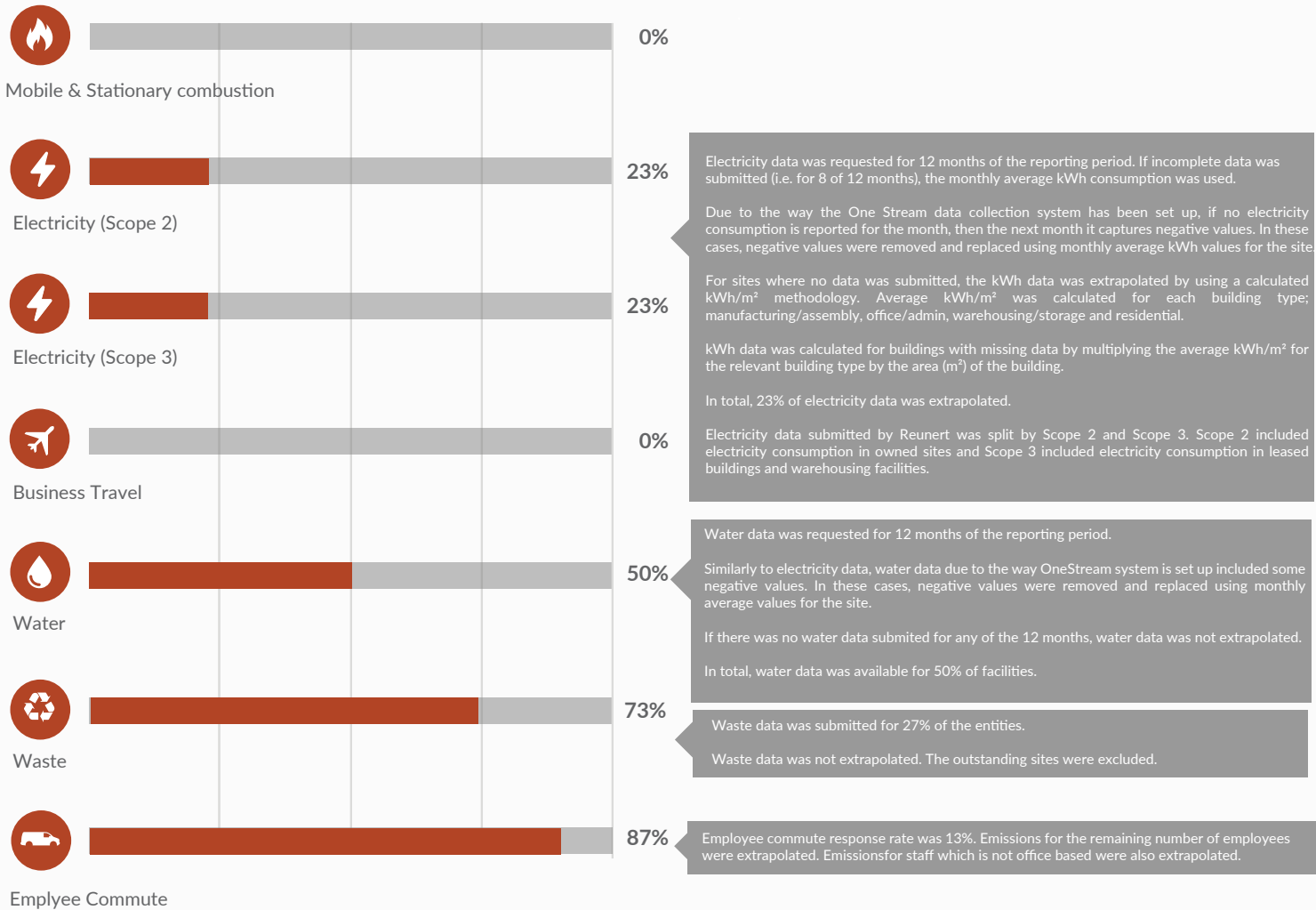
ENTITIES BENCHMARKING

Reunert's entities were benchmarked using Scope 1 and Scope 2 emissions and compare to last year's emissions. Only entities where electricity data was available (not extrapolated) were benchmarked.

ENTITY	2018 tCO ₂ e	2019 tCO ₂ e	% change
African Cables: Vereeniging	22 624	23 584	4%
Zamefa Zambia	13 114	11 479	-12%
CBI Low Voltage: Johannesburg (Head Office)	5 731	5 845	2%
CBI Telecom Cables Brits	3 063	3 745	22%
Reutech Communications: New Germany (9 Valley) - Old building	2 377	3 091	30%
Fuchs: Alrode	1 577	1 606	2%
ECN Midrand + Pops	468	1 526	226%
Reutech Solutions: Midrand	858	1 255	46%
Reutech Radar Systems: Stellenbosch	714	1 085	52%
Reutech Communications; New Germany (19 Valley) - New building	336	635	89%
Nashua Communications: Midrand	271	308	14%
Terra Firma Academy	139	140	0%
Nashua Central: Ferndale	119	125	6%
Reunert Connect: Midrand	157	120	-23%
Ryonic Robotics: Midrand	120	92	-23%
Nashua Durban Warehouse 25 Imvubupark Place, Riverhorse Valley, Durban	67	67	0%
Dopptech: Alrode	8	52	545%
Nashua West Rand: Weltevreden Park	48	47	-2%
Nashua Paarl and West Coast: Paarl	28	28	0%
CBI - Australia	-	18	0%
SkyWire: Roodepoort	10	9	0%
Pansolutions Midrand	9	9	0%
ECN Parrow	6	9	48%
Nashua Cape Town	8	8	0%
Omnigo: Waltloo	5	5	-1%
Nashua Tygerberg: Tygervally	2	2	0%

DATA GAP ANALYSIS

The image below shows gaps in the data collection process. It is recommended that non-financial data is collected and reviewed on a monthly basis to avoid missing data or appearance of negative values. Monthly data capture and review will enhance data quality and completeness.



DATA IMPROVEMENT RECOMMENDATIONS

DATA COLLECTION

- Include transport and distribution data in the next year's carbon footprint.
- Improve electricity and water data by ensuring that data is captured by all entities.
- Waste reporting should be obligatory for all facilities. Waste reporting should also capture a method of waste disposal (e.g. landfill, recycled, etc.).
- Increase the employee commute survey response rate.

DATA REPORTING

- CONTINUOUS MONITORING AND REPORTING

It is recommended that data is reviewed and captured regularly, for example, each month or each quarter. Quarterly or half-annual validation could allow identification and correction of any data discrepancies or insufficiencies.

This would also allow year-on-year activity data comparison for the same month and timely identification of variances.

RECOMMENDATIONS

REDUCE AND VERIFY CARBON FOOTPRINT



ENERGY EFFICIENCY AND RENEWABLE ENERGY

Energy efficiency assessments are a valuable exercise to obtain a detailed database of energy opportunities. The assessments investigate voltage and power, lighting, heating ventilation and air conditioning (HVAC) and IT equipment to ensure the building is efficient and is being billed the correct amount.

Another great energy reduction opportunity is renewable energy. Reunert Park and Fuchs Electronics already have a solar PV system installed. Further owned sites should be considered, especially, for facilities with highest electricity consumption.

CARBON FOOTPRINT VERIFICATION

It is recommended that Reunert undertakes a carbon footprint verification. It is an independent third party Greenhouse Gas Inventory Verification which ensures that carbon emissions data is accurate and consistent over time for management decision making. It ensures transparent and credible reporting to external stakeholders and allows organisations to achieve an additional CDP Climate Change Programme score.

IMPROVE DATA QUALITY



NON-FINANCIAL DATA REPORTING

Reunert has implemented One Stream's non-financial data system. It is recommended that improvements to the system (see section on Data Gap Analysis) are implemented.

ENERGY AND WATER MONITORING AND MANAGEMENT

An automated energy and water monitoring and management system rolled out across the Reunert portfolio of businesses will enhance the accuracy of electricity and water data. In addition, monitoring consumption may highlight energy and water reduction opportunities and ensure your sites are being billed correctly by council.

SET TARGETS



tCO₂e PER SQUARE METRE, REVENUE, EMPLOYEE

Reunert already annually reports its emissions per revenue, employee and per square meter. Setting emissions reduction targets using these metrics is a representative way to monitor progress on performance over time and it allows benchmarking reduction efforts against those of competitors.

SCIENCE-BASED TARGETS

Companies aiming to achieve the highest scoring in CDP submissions should be considering setting science-based targets for their emissions management.

ANNUAL REPORTING



CDP CLIMATE CHANGE AND CDP WATER DISCLOSURE

Reunert already responds to CDP Climate Change and CDP Water Programmes annually. This reporting platform houses over 765 investors holding \$92 trillion in assets to help reveal risk in their investment portfolio.

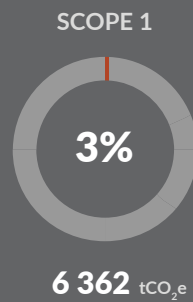
Continuous Reunert's efforts around improving activity data quality for carbon footprint will enable more accurate reporting to CDP Climate Change and CDP Water Programmes.

INTEGRATED REPORTING

Integrated Reporting demonstrates the linkages between an organisation's strategy, governance and financial performance and the social, environmental and economic context within which it operates. By reinforcing these connections, Integrated Reporting can help businesses to make more sustainable decisions and enable investors and other stakeholders to understand how an organisation is really performing. Reunert already includes its carbon footprint figures annually in the organisation's Integrated Annual Report.

CONCLUSION

CARBON FOOTPRINT
 2018-2019 FOLLOWING THE GREENHOUSE GAS PROTOCOL.
213 848 tCO₂e



ENERGY EFFICIENCY

Energy efficiency assessments are a valuable exercise to obtain a detailed database of energy opportunities. The assessments investigate voltage and power, lighting, heating ventilation and air conditioning (HVAC) and IT equipment to ensure the building is efficient and is being billed the correct amount.



RENEWABLE ENERGY

Renewable energy is a key initiative to reduce Scope 2 emissions.

Reunert has installed a 297 kWpeak solar PV system in Reunert Park and a 429 kWpeak solar PV system in Fuchs Electronics facilities.

In 2018-2019, Reunert generated 643 MWh's of renewable energy, resulting in saving 668 of tCO₂e

668 tCO₂e saved in 2018-2019.



Additional information may be provided upon the clients request.

DISCLAIMER

This report has been based on the information supplied to Terra Firma Solutions (Pty) Ltd (TFS) by the client. TFS has exercised all due care in reviewing the supplied information.

This applies to the site conditions and features as they existed at the time of TFS's investigations, and those reasonably foreseeable. This report does not necessarily apply to conditions and features that may arise after the date of this report, about which TFS had no prior knowledge nor had the opportunity to evaluate.

TFS does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

This report is meant to be read as a whole, and sections or parts thereof should thus not be read or relied upon out of context.

TFS disclaims any liability to the Client and to third parties in respect of the publication, reference, quoting, or distribution of the report or any of its contents and reliance thereon by any third party.

A 5% threshold has been used to determine the concept of materiality.

This report is for the sole and exclusive benefit of the Client.

The carbon footprint assessment is based on data provided by the Client.