



# Vodafone Egypt Carbon Footprint Report 2018




**Executive Summary**



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**“ Vodafone believes that urgent and sustained action is required to address climate change and that business success should not come at a cost to the environment ”**

Vodafone Group Plc Annual Report 2019

# ABOUT THIS REPORT

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This is an executive summary of Vodafone Egypt's first annual carbon footprint report, for the year 2018. The findings of this report will be set as the baseline for future GHG reporting by Vodafone Egypt.

The report follows the standards and guidance of the Greenhouse Gases (GHG) Protocol, The Intergovernmental Panel on Climate Change (IPCC), and Climate Registry methodology.

Emission factors were identified based on the default values adopted by the Department for Environment, Food, and Rural Affairs (DEFRA), United Kingdom. In addition, the report utilized the national electricity grid emission factors, and local independent research findings.

This report accounts for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, and SF<sub>6</sub> emissions from direct and indirect activities (Scope 1, 2 and 3) in the period between 1/1/2018 up until 31/12/2018.

The main unit of measurement is one Metric Ton of Carbon Dioxide Equivalent (MT CO<sub>2</sub>e).

This report covers all Vodafone Egypt's activities representing 100% of total Vodafone owned buildings, stores, and sites located in Egypt; and excluding third party consumption data and franchise activities.

All relevant GHG emissions data from processes and activities were collected, assumptions and explanations were provided to supplement gaps, and recommendations for future improvements in data measurement and monitoring were outlined.

This report has been prepared by **DCarbon Egypt**





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# CEO STATEMENT

“

It is my pleasure to present to you Vodafone Egypt's first Carbon Footprint Report for the year 2018. This report represents an essential first step in our climate change action plan, and aims to fulfill our voluntary obligations towards Paris Agreement; which will soon come into force in 2020.

This year marks several important milestones in our climate commitment, whether on a local or group level. While Vodafone Group has announced the targets of 50% reduction in GHG emissions and a 100% renewable electricity supply, we as Vodafone Egypt are committed to build solar farms that generate more than 50 MW of capacity to power our network. We are engaged with the different government entities to unlock the potential of solar energy for corporates in Egypt.

Noting that Vodafone Egypt already operates more than 200 solar stations in frontier locations across Egypt. We are also working on eliminating the need for diesel powered generators by deploying the latest clean technologies. Our sustainable business unit continues to deliver innovative initiatives to raise the environmental awareness of both our employees, partners, customers, and wider community. Since climate change action must be collective, we realize our duty to participate in national, regional, and global action; across our sector, and with business and public partners.

Since we can only manage what we measure, we started our journey with a comprehensive assessment of our GHG impact. This report allows us to identify outliers and thus take instant actions to cut costs and emissions. Vodafone Egypt operates an exponential network of stores and cell sites, and with a huge employee body, our next step is improving the quality, detail, and timeliness of our carbon data. We aim to set a national and regional best practice in carbon management and we are excited for the opportunities that the future holds in this regard.

”

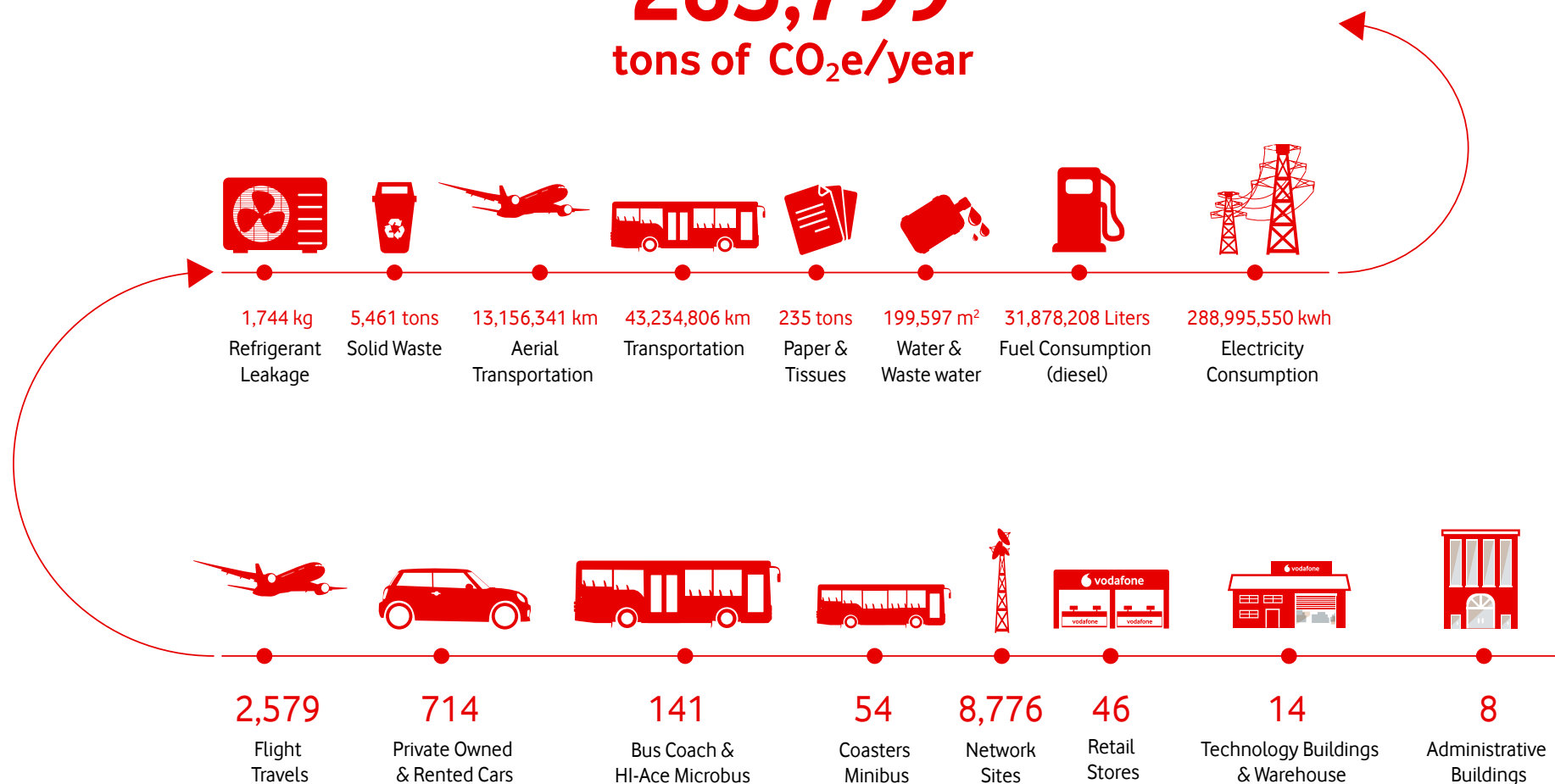
Alexandre Froment-Curtil  
Vodafone Egypt CEO



# SECTION A: GENERAL RESULTS

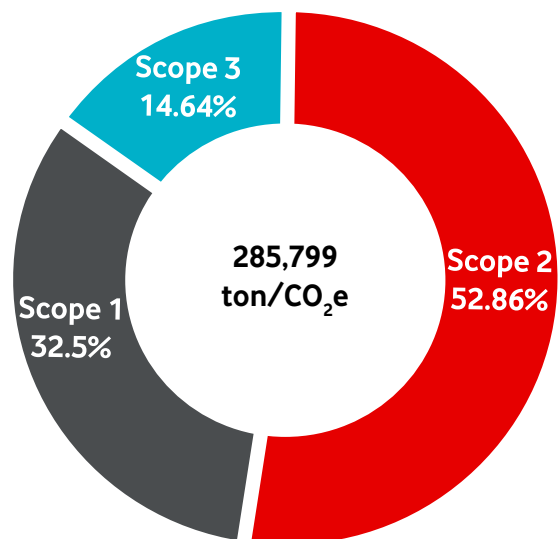


**285,799**  
tons of CO<sub>2</sub>e/year

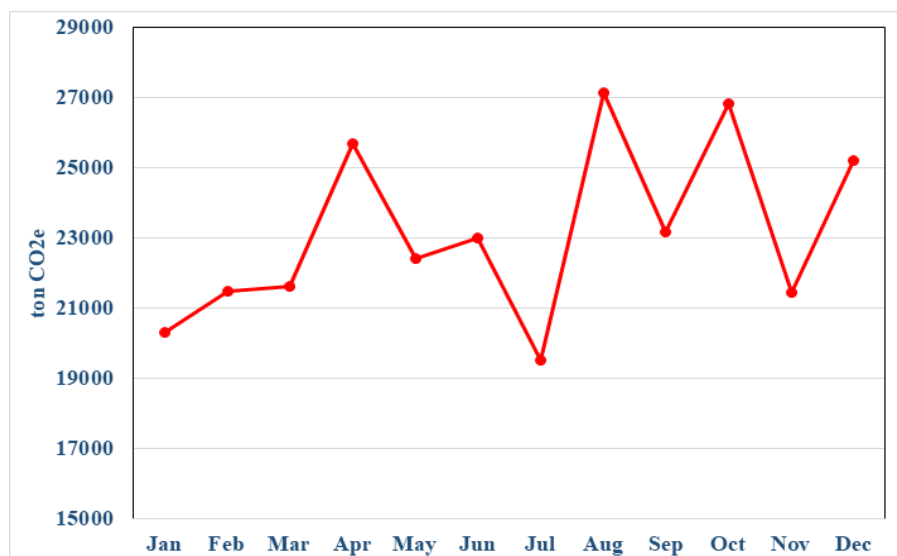


- Vodafone Egypt's total carbon footprint in 2018 was calculated at **285,799-ton CO<sub>2</sub>e**.
- Purchased **electricity** represents about **52.84%** of total emissions.
- **Fuel** consumption for power generation is the second highest contributor representing **29.97%**.
- The total carbon footprint **per employee** is **19.68-ton CO<sub>2</sub>e**, compared to a 29.91-ton CO<sub>2</sub>e in Vodafone Group, and about 23.78-ton CO<sub>2</sub>e Vodafone UK, for the same year.
- Vodafone Egypt's emissions **per capita** was calculated at **175.72-ton CO<sub>2</sub>e/million USD**, compared to only 43.1-ton CO<sub>2</sub>e/million USD in Vodafone UK and 31.12-ton CO<sub>2</sub>e/million in Vodafone Group.
- Emissions **per Petabyte** is **922.3-ton CO<sub>2</sub>e/PB** compared to 682-ton CO<sub>2</sub>e/PB at Vodafone Group Plc.

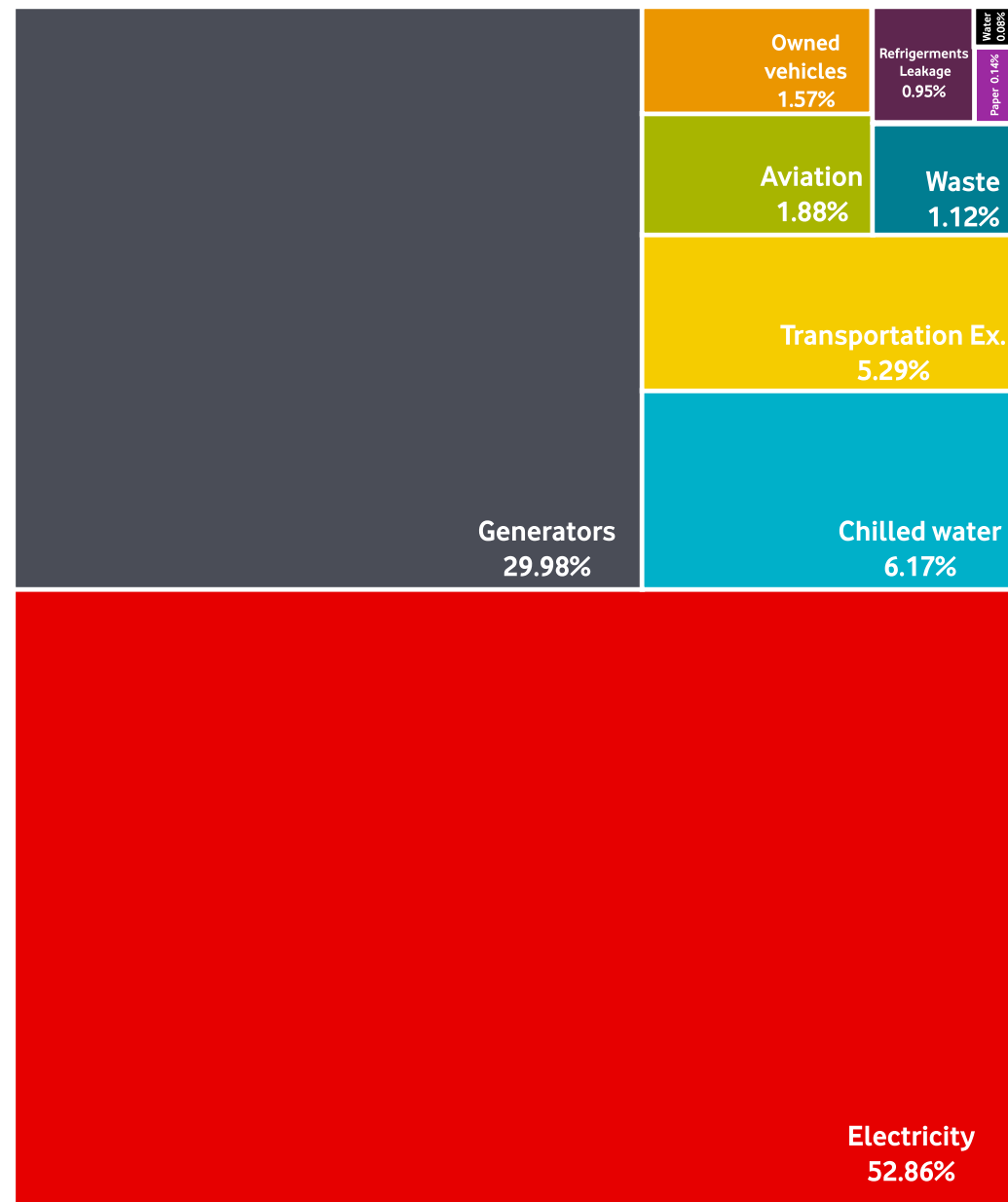
Scope	Activity of Consumption	ton CO <sub>2</sub> e / year	%
Scope 1	Transportation "Owned Vehicles"	4,486.28	32.5%
	Refrigerants Leakage	2,709.92	
	Fuel consumption for Power Electricity Generators	85,681.86	
	<b>Total Scope 1</b>	<b>92,878.06</b>	
Scope 2	Purchased Electricity	151,071.89	52.86%
	<b>Total Scope 2</b>	<b>151,071.89</b>	
Scope 3	Transportation Excluding Owned Vehicles	15,116.9	14.64%
	Flight Aviation Transportation	5,375.13	
	Water & Wastewater	104.6	
	Chilled Water	17,636.78	
	Paper Consumption	412.62	
	Waste	3,203	
	<b>Total Scope 3</b>	<b>41,849.03</b>	
<b>Total Emission ton CO<sub>2</sub>e/year</b>		<b>285,799</b>	<b>100%</b>
<b>Emissions / employee ton CO<sub>2</sub>e/year/employee</b>		<b>19.68</b>	
<b>Emission / employee (Scope 1 &amp; 2) ton Co<sub>2</sub>e/year/empolyee</b>		<b>16.8</b>	



Vodafone Egypt Carbon Footprint 2018 by Scope of Emission

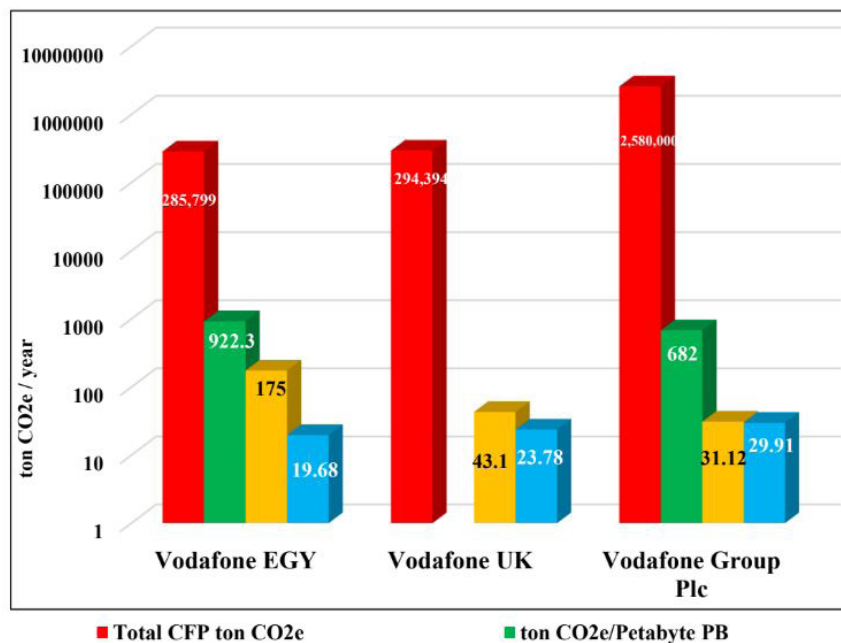


Vodafone Egypt Monthly Carbon Footprint 2018

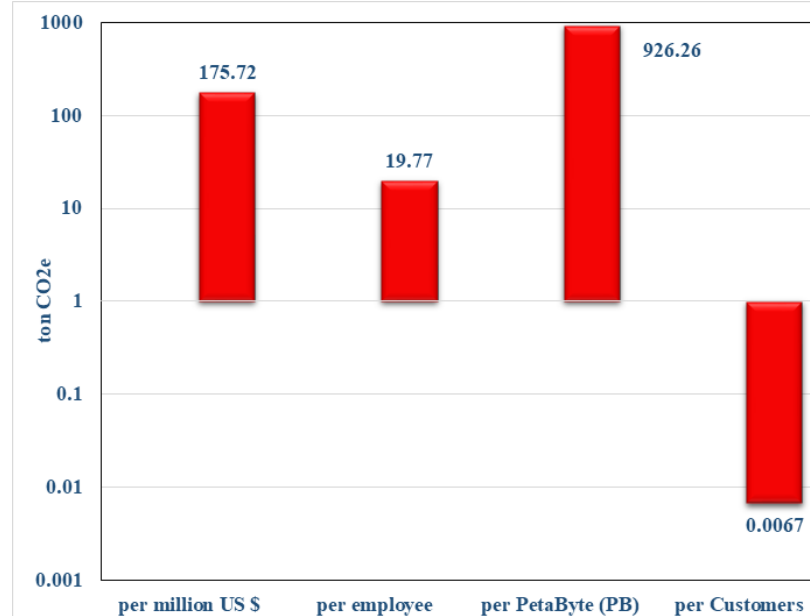


Vodafone Egypt Carbon Footprint 2018 by activity of consumption





. Vodafone Egypt Carbon Footprint benchmarks compared to Vodafone UK and Vodafone Group Plc 2018.



Total Vodafone Egypt emissions per million US \$ - per employee - per petabyte - per customers



## SECTION B: EMISSIONS BY FACILITY



10.28%

The total contribution of administrative buildings is about 29,386-tonCO<sub>2</sub>e in 2018, which represents about 10.28% of total emissions. The average emission per building was calculated at 3,278 -tonCO<sub>2</sub>e. Analysis reveals that SV-C2, SV-C3, and HQ Buildings have an above average emissions. This is due to a high level of purchased electricity and the contribution of chillers in SV-C2 and SV-C3.



9.96%

Technology buildings have a total contribution of 28,486-tonCO<sub>2</sub>e in 2018, representing 9.92% of total emissions. The average was calculated at 2,374- tonCO<sub>2</sub>e, where HQ, Alex Louts, Bani-Suef, Cairo 5th, 10th of Ramadan, and Zahraa el Maadi scored above average. This is also due to the high contribution of purchased electricity, in addition to the contribution of refrigerant leakage.



0.8%

Vodafone Egypt's Retail stores emission contribution was calculated at 2,300.46- tonCO<sub>2</sub>e in 2018, representing 0.8% of total emissions, with an average of 76.56 - tonCO<sub>2</sub>e. Mohandeseen, Mansoura, Mahala, City Stars, Down Town, Sodic Strip, and Carrefour El Maadi stores have scored above average.



68.94%

Vodafone Egypt's network sites contributed about 197,032-tonCO<sub>2</sub>e in 2018, representing 68.94% of total emissions, and with an average of 22.45- tonCO<sub>2</sub>e. Electricity consumption of shared sites was estimated at 50%. The total number of network sites included in this study is 8,776, including 1,736 sites operating with fuel, 3,984 operating with electricity, and 779 sites shared with another telecom operator in Egypt.



In addition to 44 solar cell sites and 3,012 non-metered sites where assumptions were applied.

Facility	ton CO <sub>2</sub> e
Administrative Buildings	29,386
Technology Buildings	28,486
Stores	2,300
Sites	197,032
<b>Total</b>	<b>257,204</b>

**Sites**  
77%

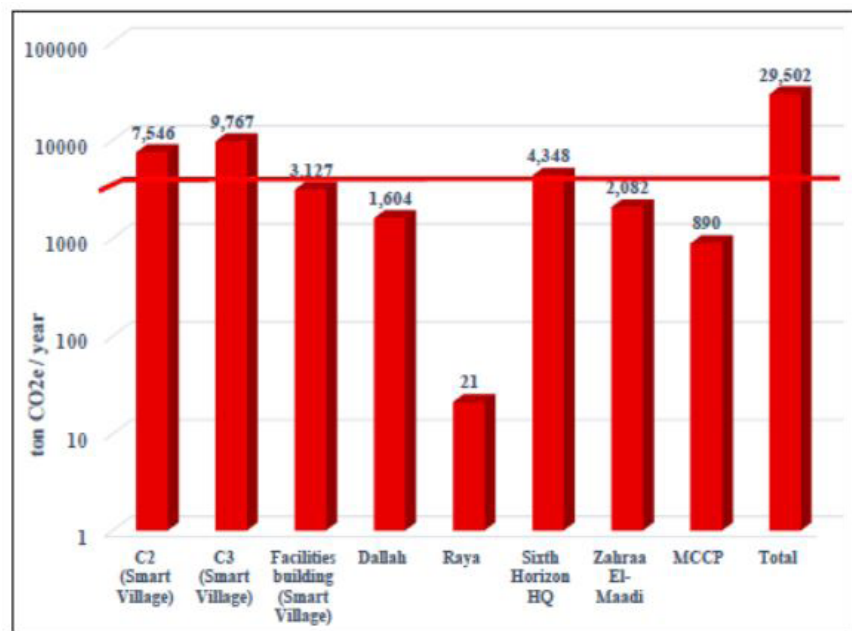
**Stores**  
1%

**Technology Buildings**  
11%

**Administrative Buildings**  
11%



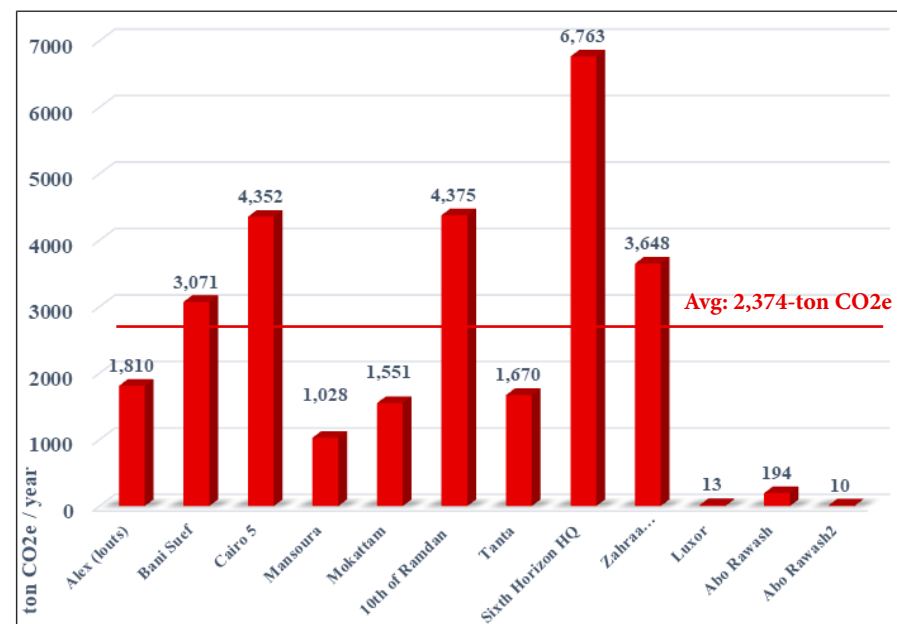
10.28%



Total Emissions of Administrative Buildings



9.96%



Total Emissions of Technology Buildings



# SECTION C: EMISSIONS BY CATEGORY

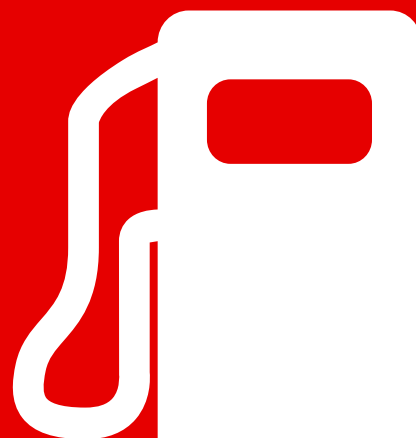
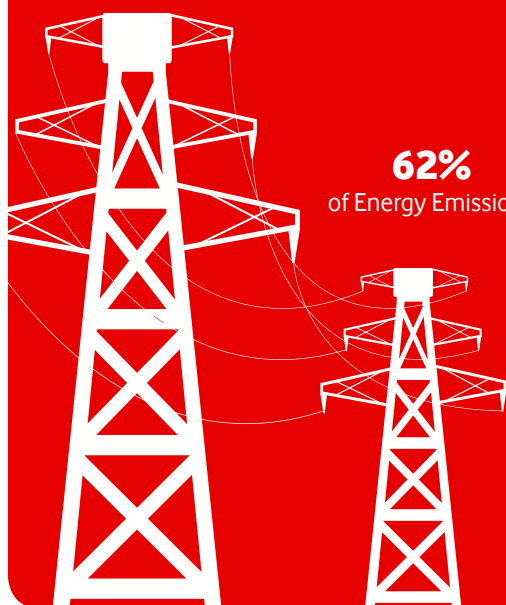
## 1. ENERGY

Energy emissions include purchased electricity consumption (Scope 2: Indirect), in addition to fuel consumption (Scope 1: Direct). Total Energy emissions for Vodafone Egypt in 2018 was calculated at 236,754- tonCO<sub>2</sub>e. This accounts for 82.45% of total emissions for Vodafone Egypt.

**82.83%**  
of Total Emissions

**38%**  
of Energy Emissions

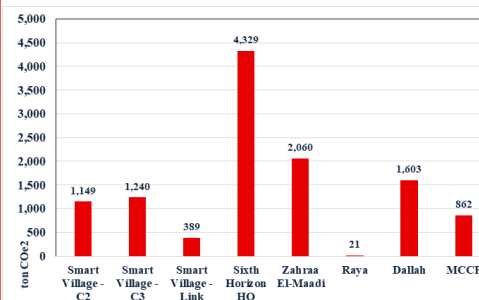
**62%**  
of Energy Emissions



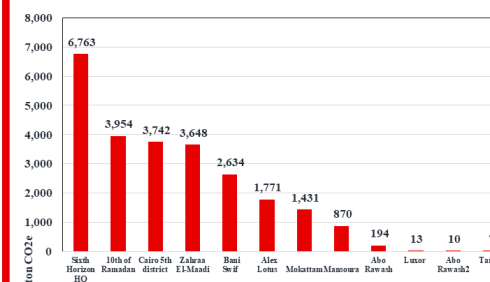
### Electricity

Electricity represents 62%, while fuel consumption for energy generation accounts for around 38% of total energy emissions.

Facility electricity	ton CO <sub>2</sub> e
Network Sites	113,409.56
Administrative Buildings	11,654
Technology Buildings	24,209
Stores	1,799.22
<b>Total</b>	<b>151,072</b>



Emissions from electricity consumption; by administrative buildings

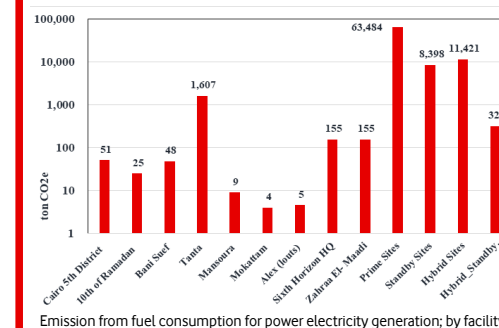


Emissions from electricity consumption; by technology buildings

### Fuel

Total fuel consumption amounted to 31,878,208 liters for the year 2018; which amounts to 85,681.86-ton CO<sub>2</sub>e. Thus fuel consumption accounts for 29.97% of the total emissions of Vodafone Egypt. Network sites represents 98% of emissions from fuel consumption contributing 83,623- ton CO<sub>2</sub>e.

Facility	ton CO <sub>2</sub> e
Cairo 5th District	51
10th of Ramadan	25
Bani Suef	48
Tanta	1,607
Mansoura	9
Mokattam	4
Alex (louts)	5
Sixth Horizon HQ	155
Zahraa El- Maadi	155
<b>Total Network Sites</b>	<b>83,623</b>
<b>Total Technology buildings</b>	<b>2,059</b>
<b>Total Emission of consumption</b>	<b>85,682</b>



Emission from fuel consumption for power electricity generation; by facility

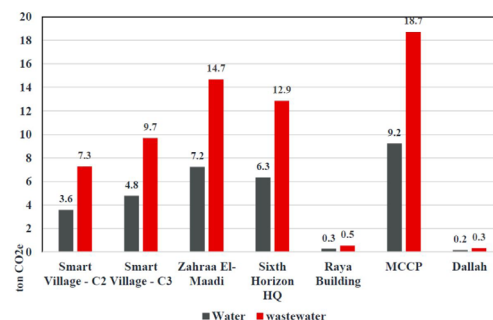
## 2. WATER AND WASTEWATER

Total water consumption was 100,589 m<sup>3</sup> in 2018; calculated corresponding emissions were 34.57 - ton CO<sub>2</sub>e. On another hand, 99,008 m<sup>3</sup> of wastewater were generated for the year 2018, resulting in a calculated 70.03 -ton CO<sub>2</sub>e. Thus the total emissions contribution of this category is 220.19 ton CO<sub>2</sub>e, which accounts for 0.036% of the total emissions of Vodafone Egypt.

The share of administrative buildings versus retail stores is 91% versus only 9% for the stores.

**0.036%**  
of Total Emissions

Facility	Water ton CO <sub>2</sub> e/ m <sup>3</sup>	Waste- water ton CO <sub>2</sub> e/ m <sup>3</sup>
Smart Village - C2	3.5	7.27
Smart Village - C3	4.7	9.69
Zahraa El-Maadi	7.2	14.67
Sixth Horizon HQ	6.3	12.85
Raya Building	0.26	0.55
MCCP	9.2	18.70
Dallah	0.16	0.33
Total administrative buildings	31.6	64.06
Retail Stores	2.97	5.97
Total	34.57	70.03



Total Emission from water & wastewater consumption; for administrative buildings ton CO<sub>2</sub>e

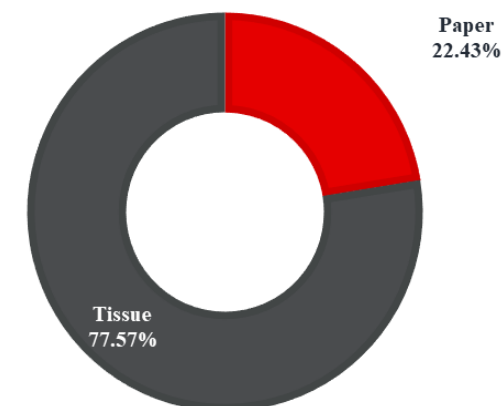
## 3. PAPER

Total paper consumption per employee is 1942 A4 paper/ employee/ year, and 10.13 A3 paper/employee/year. And each employee also consumed 8.8 big tissue rolls, 2.14 office boxes, and 20.19 small tissue rolls in 2018 alone. Emissions associated with landfill disposal were not considered since a 100% of paper consumed is recycled (saving around 9.3 tons of CO<sub>2</sub>e). Consumption of agendas, receipts, and other office supplies were excluded due to the lack of data.

Total Emissions from paper and tissue consumption amounted to 412.63 ton CO<sub>2</sub>e, which accounts to 0.14% of total emission of Vodafone Egypt. The consumption of big tissue rolls represented 58.6% of the total emissions for this category. A4 paper is the second largest contributor representing 22.3%.

**0.14%**  
of Total Emissions

Paper and Paper Tissue type	ton CO <sub>2</sub> e
A4	92
A3	1
Big Tissues	242
Tissues office box	8
Small tissues	70
Total	412.63



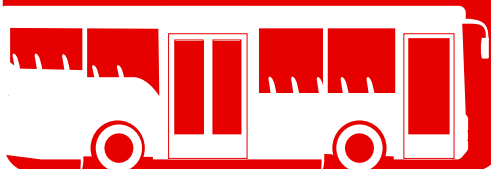
Total emissions of paper versus tissue consumption for 2018



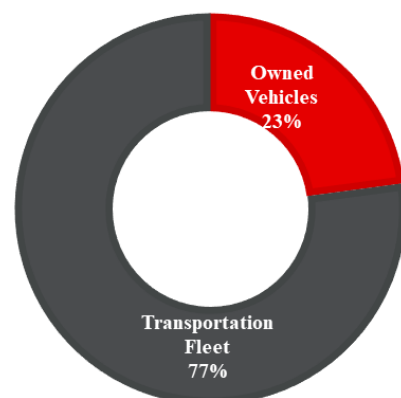
## 4. TRANSPORTATION

Total transportation activity resulted in emissions that amounts to 19,603.18 ton CO<sub>2</sub>e; which accounts for 6.82% of the total emissions of Vodafone Egypt. There are two types of emissions under this category: 1) owned vehicles (Scope 1: Direct), 2) Employee Transportation Fleet and commuting (Scope 3: Indirect). In addition to capturing the maximum climate impact using Well-to-Tank (WTT) methodology (Scope 3: Indirect)

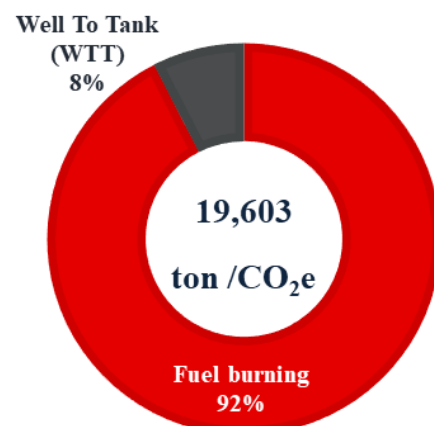
**6.82%**  
of Total Emissions



Fuel burning		
Scope 1	Owned Vehicles Scope 1	3,833.58
Scope 3	Transportation Fleet Scope 3	14,297.14
Well to Tank (WTT)		
Scope 3	Owned Vehicles Scope 3	652.72
Scope 3	Transportation Fleet Scope 3	820.76
Total Transportation		19,603.18



Emissions of owned vehicles versus transportation fleet.

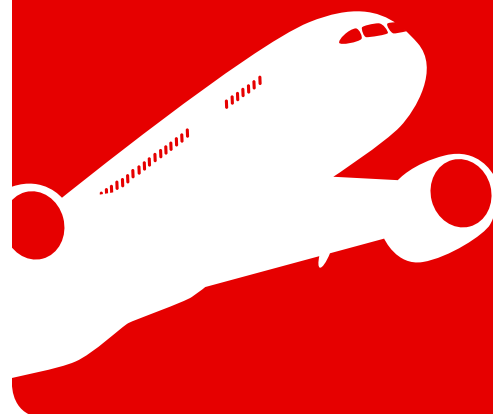


The contribution of WTT versus Fuel burning to total transportation emissions

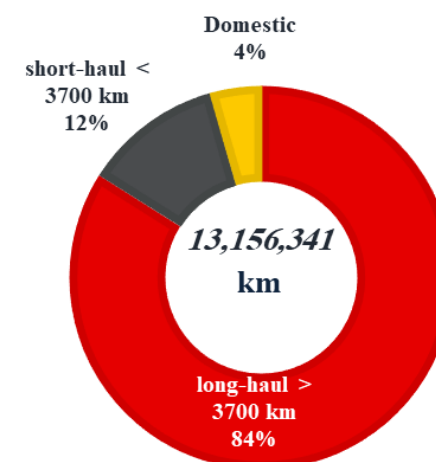
## 5. FLIGHT TRAVEL

Total emissions from flight travel are 5,375-ton CO<sub>2</sub>e; accounting for 1.88% of the total emissions of Vodafone Egypt. Flights were classified into three categories: domestic, short-haul (900-3700 Km), and long-haul (>3700 Km). The total travel distance in 2018 was calculated at 13,156,341 Km.

**1.88%**  
of Total Emissions



Fuel burning				
Flight Class	Domestic Flights	International Flights		Total emissions
		Short-haul	Long-haul	
Business	18	120	3431	3570
Economy	154	165	501	820
First	0	0	455	455
Total tonCO <sub>2</sub> e / km	172	285	4387	4,844
Well to Tank (WTT)				
Flight Class	Domestic Flights	International Flights		Total emissions
		Short-haul	Long-haul	
Business	2	13	376	391
Economy	17	18	55	90
First	0	0	50	50
Total tonCO <sub>2</sub> e / km	19	31	481	531
Total Aviation Emissions tonCO <sub>2</sub> e				5,375



Total traveled distance by flight category

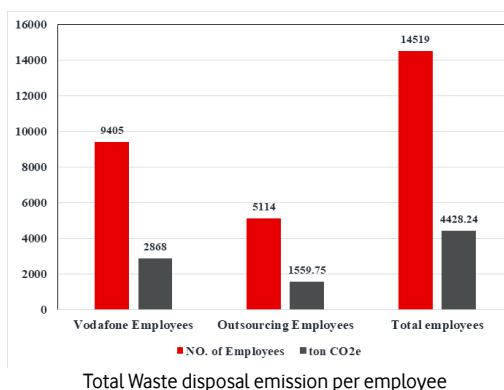
## 6. SOLID WASTE

5,461 tons of waste was estimated for the year 2018, resulting in 3,203 –tons of CO<sub>2</sub>e; which accounts for 1.12% of the total emissions of Vodafone Egypt.

**1.12%**  
of Total Emissions



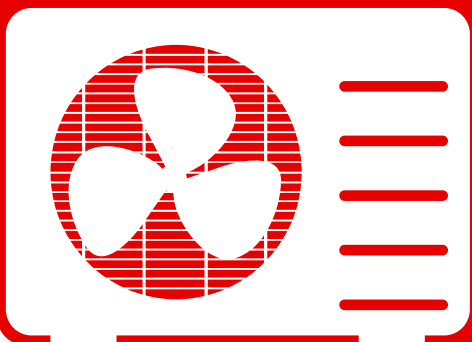
Employees	NO. of Employees	ton / waste/ year	ton CO <sub>2</sub> e
Vodafone Egypt	5,882	3,059	1,794
VIS	3,523	1,832	1,075
Total employees	9,405	4,891	2,868
Vodafone Egypt	1,979	1,029	604
VIS outsourcing	3,135	1,630	956
Total outsourcing employees	5,114	2,659	1,560
Total employees	14,519	7,550	4,428



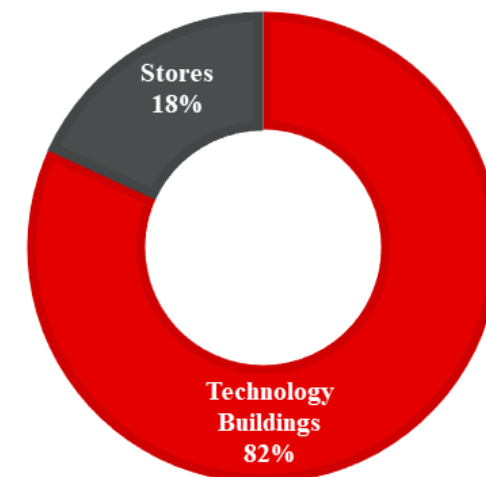
## 7. REFRIGERANT LEAKAGE

The total amount of leakage for 2018 was 1744 Kg for all types, resulting in 2,709.92 ton CO<sub>2</sub>e. Thus accounting for 0.94% of the total emissions of Vodafone Egypt.

**0.94%**  
of Total Emissions



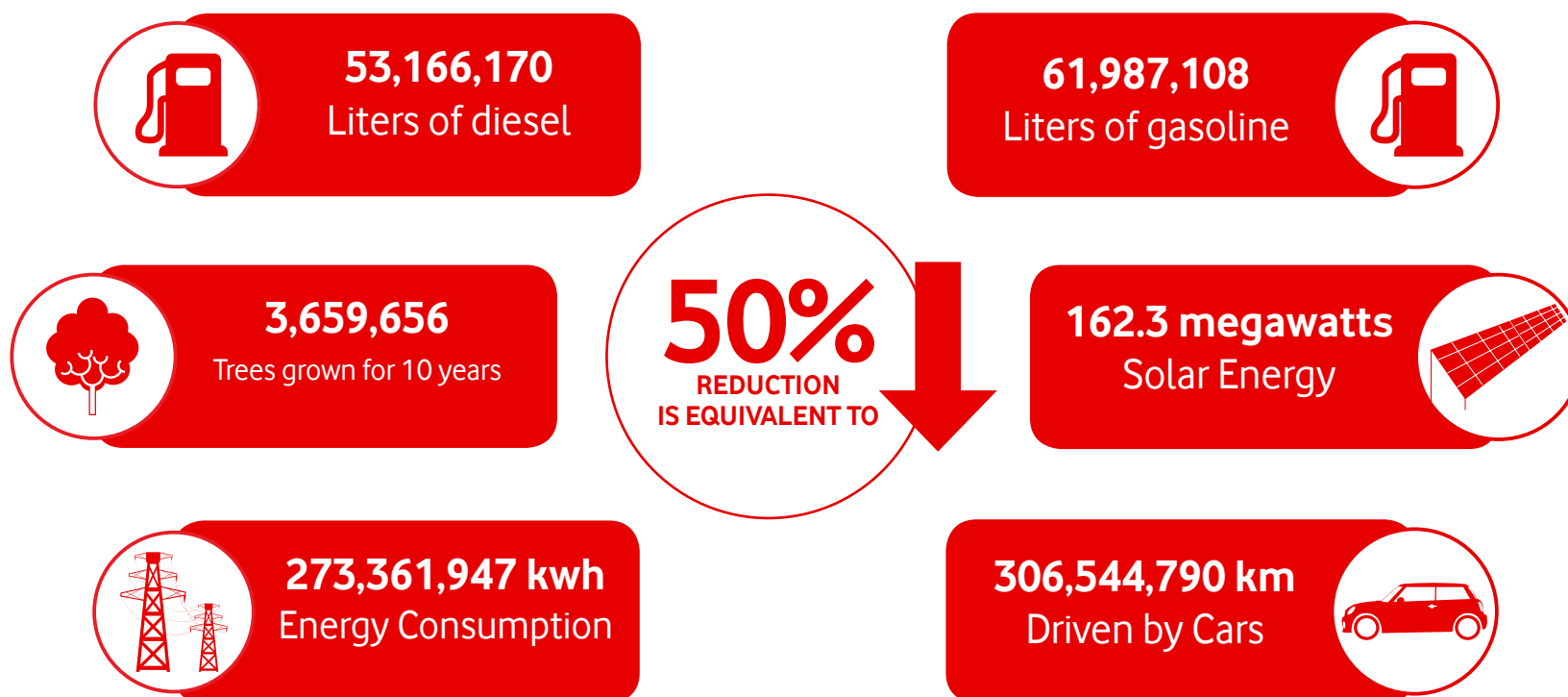
Facility	Freon R134A	Freon R407c	Freon R22	Total
Cairo 5th District	429	80	50	559
10th of Ramadan	232	117	47	396
Bani Suef	389	0	0	389
Tanta	56	0	0	56
Mansoura	149	0	0	149
Mokattam	0	69	47	116
Alex (louts)	34	0	0	34
Sixth Horizon HQ	0	115	0	115
Zahraa EL- Maadi	358	46	0	404
Total	1,646	428	144	2,218
Stores	0	0	492	492
Total Emissions ton CO <sub>2</sub> e				2,710



Total Emissions from Refrigerant leakage in technology buildings versus retail stores

## ABATEMENT OF CO<sub>2</sub> EMISSIONS

To reach the 2025 target, Vodafone Egypt needs to cut down its emissions by 50% .  
This means reducing the emissions from 285,799-ton CO<sub>2</sub>e to 142,899.5-ton CO<sub>2</sub>e.



**This report was Prepared by DCarbon Egypt**



