



Carbon Footprint Appraisal  
for  
TT International Asset Management Limited

Assessment Period:  
1<sup>st</sup> January 2022 – 31<sup>st</sup> December 2022

## Executive Summary

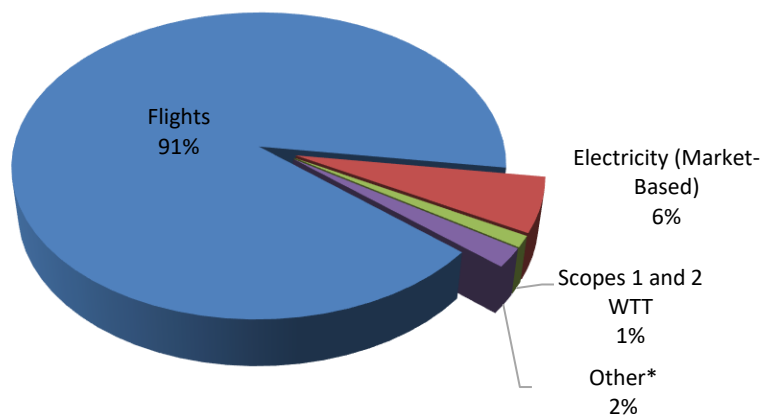
### Current Performance

→ TT International’s total market-based emissions for 2022 were 1350.33 tCO<sub>2</sub>e,(location-based was 1,359.37 tCO<sub>2</sub>e)The most significant emission source is flights accounting for 91.07% of the business’s carbon footprint.

### Recommendations

- Offset the GHG emissions created within this data period to maintain your carbon neutrality.
- Cut back on all non-essential flights. When air travel is required, economy class tickets should be purchased as these cause about a third of the emissions compared to business class.
- Consider switching short-haul flights to rail journeys.
- Evaluate the effectiveness of using remote meetings, and re-define what your business classifies as “essential” travel going forwards.
- Expand the scope of the assessment to include ; investments , purchased goods and services and capital goods.
- Set carbon reduction targets based on intensity metrics (e.g. emissions per employee and/or per £ million turnover

Market-based emissions breakdown (incl. WTT)



\*Other= Wastewater, Transmission & Distribution (Location-Based), Taxi, Natural Gas, Rail, Water.

Year/Element	Location based	Market based
Total number of employees	118	118
Turnover in £ million	64	64
<b>Tonnes of CO<sub>2</sub>e</b>	<b>1350.33</b>	<b>1359.37</b>
<b>Tonnes of CO<sub>2</sub>e per employee</b>	<b>11.44</b>	<b>11.50</b>
<b>Tonnes of CO<sub>2</sub>e per £ million turnover</b>	<b>21.10</b>	<b>21.24</b>



# Table of Contents

Executive Summary.....	I
1. Introduction.....	1
2. Calculation Scope and Accuracy.....	2
3. Carbon Footprint Results.....	6
4. Comparison and Benchmarking.....	8
5. Conclusion.....	11
6. Recommendations.....	12

## Quality Control

<b>Report issue number:</b>	1.0
<b>Date:</b>	03 April 2023
<b>Calculations completed by:</b>	Christian Risoli
<b>Calculations reviewed by:</b>	Jenny Webb
<b>Report produced by:</b>	Christian Risoli
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<b>Director approval:</b>	Dr. Wendy Buckley

# 1. Introduction

## 1.1. Company Overview

TT International is a global asset management organisation with offices in the UK, Hong Kong and New York. TT international has offset its emissions for the last 3 years through a variety of VCS and Gold standard projects.

## 1.2. Goals & objectives

- TT international is committed to maintaining its status as a Carbon Neutral business.

## 1.3. Data supplied for the carbon footprint appraisal

A summary of the data supplied by TT International for the appraisal can be provided on request.

## 1.4. Methodology for the Carbon Footprint Appraisal

The methodology document can be downloaded using this link,

[https://www.carbonfootprint.com/docs/carbon\\_footprint\\_appraisal\\_-\\_methodology\\_document.pdf](https://www.carbonfootprint.com/docs/carbon_footprint_appraisal_-_methodology_document.pdf)

## 1.5. Abbreviations

A/C	Air Conditioning
BEIS	Department for Business Energy & Industrial Strategy
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
GHG	Greenhouse Gas
ISO	International Standards Organisation
km	Kilometres
kWh	Kilowatt Hours
PR	Public Relations
T&D	Transmission & Distribution
UN	United Nations
WTT	Well-To-Tank
CIBSE	Chartered Institution of Building Services Engineers

## 2. Calculation Scope and Accuracy

### 2.1. Scope of this work

Carbon Footprint has assessed the GHG emissions from 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 resulting from the energy consumption at TT International’s facilities and its business transport activities.

TT International's baseline year data and emissions can be found in the 2018 report.

### 2.2. Organisational & reporting boundaries

Figure 1 shows the full boundaries of the *Greenhouse Gas Protocol Corporate and Value Chain Standards*. The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has operational control. This assessment covers the reporting boundaries shown in Table 1, in line with the Financial control method.

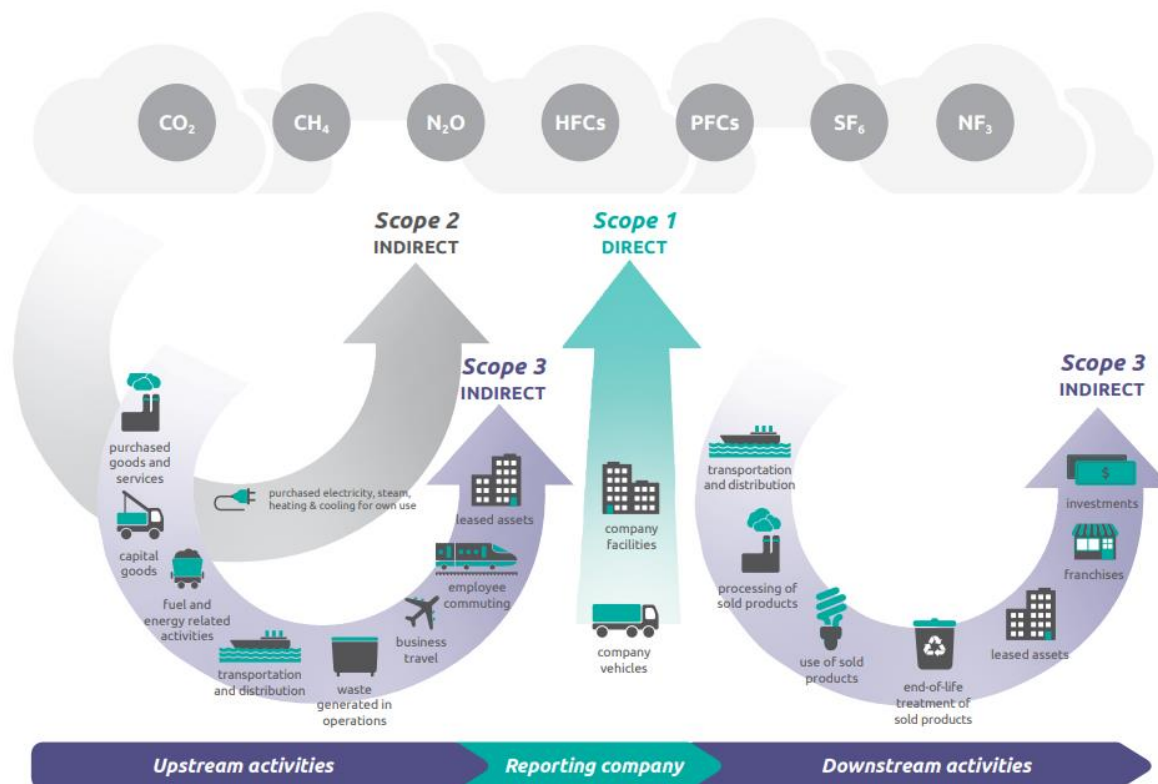


Figure 1: Overview of emissions scopes (GHG Protocol - Scope 3 Calculation Guidance v1.0 - 2013)



**Table 1: TT International’s GHG Assessment boundary based on the Finaicall control method**

*(All green rows have been included in this assessment; all grey rows are not applicable; orange rows have been excluded)*

Scope	Activity	Calculation Type	Completion Status	Justification
1	Electricity, heat or steam generated on-site	Activity Data	Complete	
1	On-site fuel use	Activity Data	Complete	
1	Company owned vehicles		Not relevant	Not applicable
1	Fugitive emissions (incl. Refrigerant gases and AC)	Activity Data	Complete	
2	On-site Consumption of purchased electricity, heat steam and cooling		Not relevant	Not applicable
3	1. Purchased goods and services	Activity Data	Partial	Relevant and intending to include in future assessments
3	2. Capital goods		Excluded	Relevant and intending to include in future assessments
3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Activity Data	Complete	
3	4. Upstream transportation and distribution		Not relevant	Not applicable
3	5. Waste generated in operation		Excluded	Immaterial or not technically/financially feasible
3	6. Business travel (not included in scope 1 or scope 2)	Activity Data	Complete	
3	7. Employee commuting		Excluded	Relevant and intending to include in future assessments
3	8. Upstream leased assets		Not relevant	Not applicable
3	9. Downstream transportation and distribution		Not relevant	Not applicable
3	10. Processing of sold products		Excluded	Relevance unknown due to lack of resources - unable to determine



Scope	Activity	Calculation Type	Completion Status	Justification
3	11. Use of sold products		Excluded	Relevance unknown likely immaterial
3	12. End-of-life treatment of sold products		Excluded	Relevance unknown likely immaterial
3	13. Downstream leased assets		Excluded	Relevance unknown likely immaterial
3	14. Franchises		Excluded	Relevance unknown likely immaterial
3	15. Investments		Excluded	Relevant and should be included in future assessments.

### 2.3. Calculation uncertainty assessment & materiality

The result of a carbon footprint calculation varies in accuracy depending on the data set provided. The more accurate the data supplied, the more accurate the final result. Materiality is determined by the percentage contribution of each element to the overall footprint.

Based on the accuracy of the data provided (Table 2), a simple uncertainty analysis has been used to estimate the potential error margin for the appraisal results.

**Table 2: Assessment accuracy, materiality and simple error analysis**

Emission Source	Data source / comments	Materiality	Uncertainty	Market-based Error Margin (tCO <sub>2</sub> e)
Natural Gas	Hong Kong provided full bills from January to December with gas and electricity consumption in kWh.	Very Low (<1%)	10%	0.17
Electricity incl. T&D	London provided Total site consumption with consumption apportioned by floor area; Specific supplier information was provided by the landlord with no primary bills being supplied. New York electricity consumption was estimated based upon floor area using the CIBSE standard air-conditioned office factor.	Medium (5-20%)	10%	4.5
Water	Water consumption was provided from March to December 2022 for Hongkong. New York and London water consumption estimated on floor area using EIA non-domestic water consumption for office average <sup>1</sup> .	Very Low (<1%)	50%	0.03
Wastewater		Low (1-5%)	50%	6.17
Taxi	New York and Hong Kong Journeys provided Distances with London estimated based upon cost.	Very Low (<1%)	90%	3.03
Rail	London rail and national rail travel was provided in spend with actual Distance's provided for all international rail	Very Low (<1%)	10%	0.11
Flights	Flight departure destination and Cabin class were provided from the expense system.	Very High(>40%)	1%	12.38
<b>Total</b>			<b>Total</b>	<b>26.4</b>

<sup>1</sup> Reference COMMERCIAL BUILDINGS ENERGY CONSUMPTION SURVEY (CBECS) 2017





## 3. Carbon Footprint Results

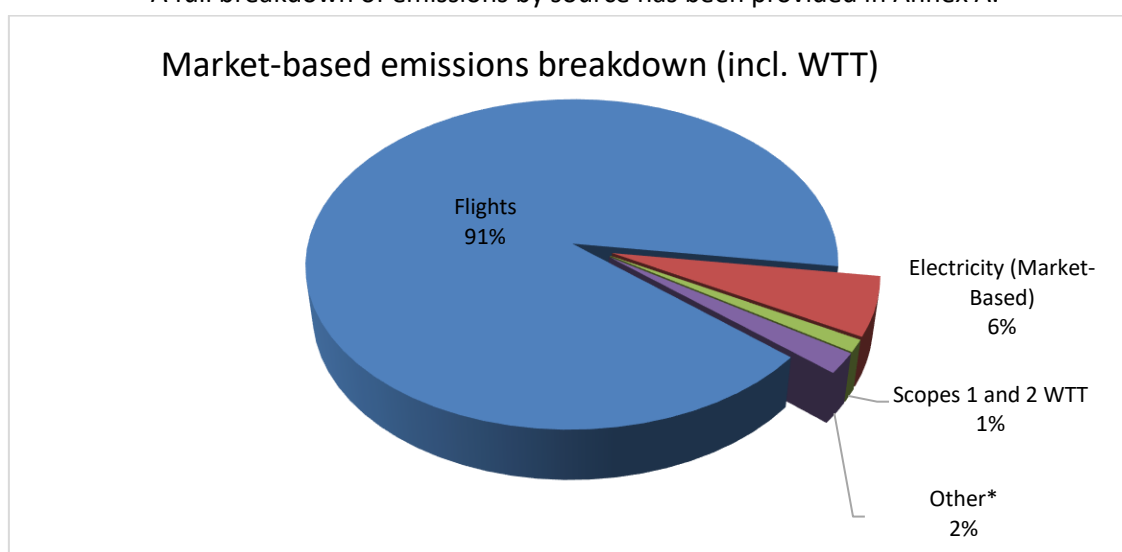
### 3.1. Summary of results

The total location-based carbon footprint for TT International for the period ending 31<sup>st</sup> December 2022 was 1,350.33 tonnes CO<sub>2</sub>e, and the market-based total is 1,357.14 tonnes CO<sub>2</sub>e.

**Table 3: Results of TT International 's carbon footprint assessment by scope and GHG Protocol emission categories**

Scope	Emission Source	Location-Based	Market-Based
1	Natural Gas	1.56	1.56
<b>1</b>	<b>Scope 1 Total</b>	<b>1.56</b>	<b>1.56</b>
2	Electricity	69.50	76.30
<b>2</b>	<b>Scope 2 Total</b>	<b>69.50</b>	<b>76.30</b>
3.1	Water	0.07	0.07
3.3	Scopes 1 and 2 WTT	16.24	16.24
3.3	Transmission & Distribution	8.70	8.70
3.5	Wastewater	12.33	12.33
3.6	Flights	1238.04	1238.04
3.6	Taxi	3.37	3.37
3.6	Rail	1.13	1.13
<b>3</b>	<b>Scope 3 Total</b>	<b>1279.35</b>	<b>1279.35</b>
<b>Combined</b>	<b>Tonnes of CO<sub>2</sub>e</b>	<b>1350.33</b>	<b>1357.14</b>
<b>Combined</b>	<b>Tonnes of CO<sub>2</sub>e per employee</b>	<b>11.44</b>	<b>11.50</b>
<b>Combined</b>	<b>Tonnes of CO<sub>2</sub>e per £ million turnovers</b>	<b>21.10</b>	<b>21.24</b>

A full breakdown of emissions by source has been provided in Annex A.



\*Other= Wastewater, Transmission & Distribution (Location-Based), Taxi, Natural Gas, Rail, Water.

**Figure 2: Percentage contribution of each element of TT International 's market-based carbon footprint**

### 3.1. Emissions from transport

Transport emissions make up the majority of TT international emissions in particular flights which counts for over 90% of all emissions. TT international's travelled a total of 1.5 million km with a large proportion of flights being in business class. If TT international were to ban the use of business and first class flights switching to entirely economy class, a reduction of **658 tCO<sub>2</sub>e could be achieved**.

**Table 4: CO<sub>2</sub>e emissions associated with transport**

Emission Source	Location-Based	Market-Based
Flights	1238.04	1238.04
Taxi	3.37	3.37
Rail	1.13	1.13
<b>Total</b>	<b>1,242.55</b>	<b>1,242.55</b>

### 3.2. Emissions from energy usage at site facilities

Of all TT international 's sites London has the highest emission while also being the only site to use natural gas heating. Overall Site electricity consumption is the second largest source of emissions for after flights

**Table 5: CO<sub>2</sub>e emissions as a result of site energy consumption**

Name of Site	Location-based Electricity Gen & T&D <sup>1</sup> tCO <sub>2</sub> e	Market-based Electricity Gen & T&D <sup>1</sup> tCO <sub>2</sub> e	Natural Gas tCO <sub>2</sub> e	Total Market Based tCO <sub>2</sub> e
London	31.27	32.27	1.83	33.75
Hong Kong	34.62	34.62	0.00	34.62
New York	12.37	16.68	0.00	16.68
<b>Total</b>	<b>78.25</b>	<b>102.59</b>	<b>1.83</b>	<b>85.06</b>

Totals include emissions from Generation and Transmission & Distribution



## 4. Comparison and Benchmarking

### 4.1. Comparison to base year emissions

TT international's overall emissions have increased over the baseline year, although on an intensity based metric, emissions have decreased by 9.8% in location based per employee emissions and 13.1 % on a per £million turnover basis (see Figure 5).

The dramatic increase in emissions since 2021 is the result of the COVID 19 restrictions being lifted. With restrictions in place many international flights were not possible, resulting in emissions dropping sharply in 2021. This does however suggest that TT international can maintain its business operations when flying substantially less.

**Table 6: TT International 's carbon footprint comparison and percentage change**

Element	2018	2021	2022	% change on baseline year (2018)	% change on previous year
Site electricity (Location-based)	188.85	87.10	76.77	-59.3% ▼	-11.9% ▼
Site gas	24.22	20.30	1.56	-93.5% ▼	-92.3% ▼
Employee-owned car travel (grey fleet)	0.02	0.00	0.00	-100.% ▼	0%
Taxi travel	2.37	1.69	2.71	14.2% ▲	60.5% ▲
Rail travel	2.25	0.06	0.91	-59.7% ▼	1544.1% ▲
Flights	901.44	36.94	1,115.85	23.8% ▲	2920.9% ▲
Water (and wastewater)	0.05	0.05	12.40	24696.3% ▲	26550.3% ▲
Well To Tank (Location-Based)	0.00	29.26	140.62	n/a	380.6% ▲
<b>Total Tonnes of CO<sub>2</sub>e (Location-based)</b>	<b>1,119.20</b>	<b>175.38</b>	<b>1350.33</b>	<b>20.8% ▲</b>	<b>669.9% ▲</b>
<b>Tonnes of CO<sub>2</sub>e per employee (Location-based)</b>	<b>13.17</b>	<b>1.79</b>	<b>11.46</b>	<b>-13.1% ▼</b>	<b>539.4% ▲</b>
<b>Tonnes of CO<sub>2</sub>e per £ M turnover (Location-based)</b>	<b>23.39</b>	<b>2.38</b>	<b>21.13</b>	<b>-9.8% ▼</b>	<b>785.0% ▲</b>

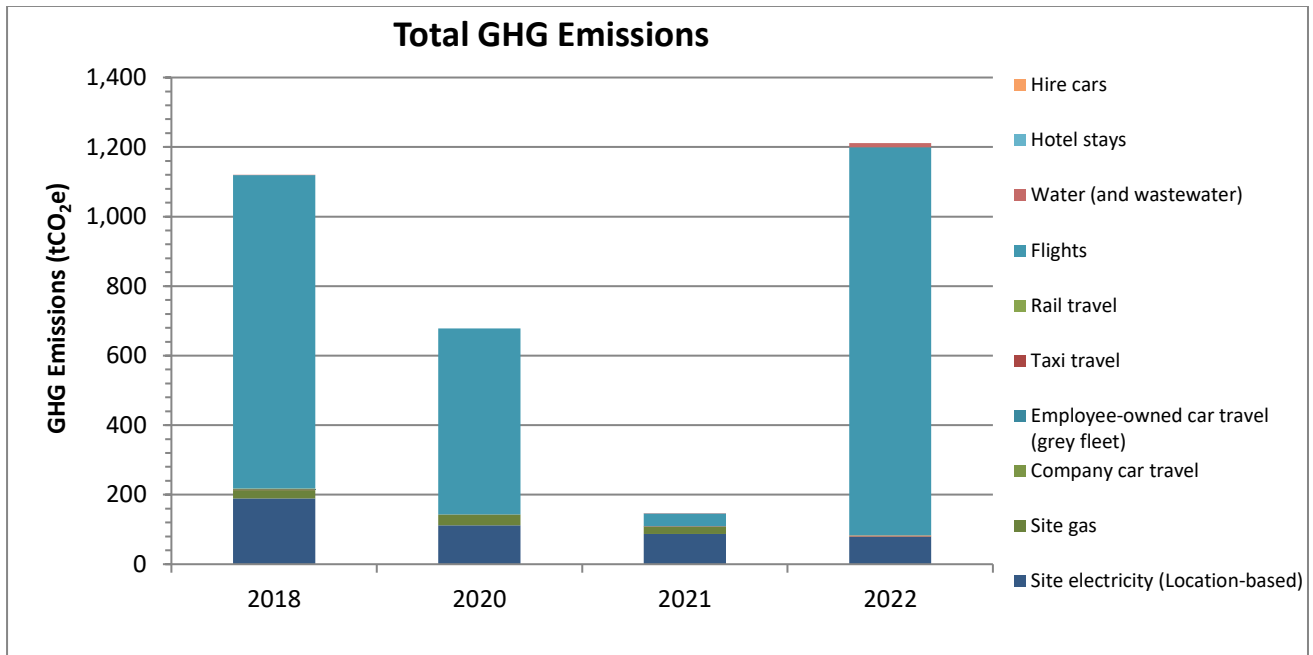


Figure 3: Detailed emissions comparison for the various aspects of TT International’s location-based emissions

Benchmarked against employee numbers and company turnover (adjusted for inflation) the carbon emissions statistics show a decrease in both intensity metrics since 2018.

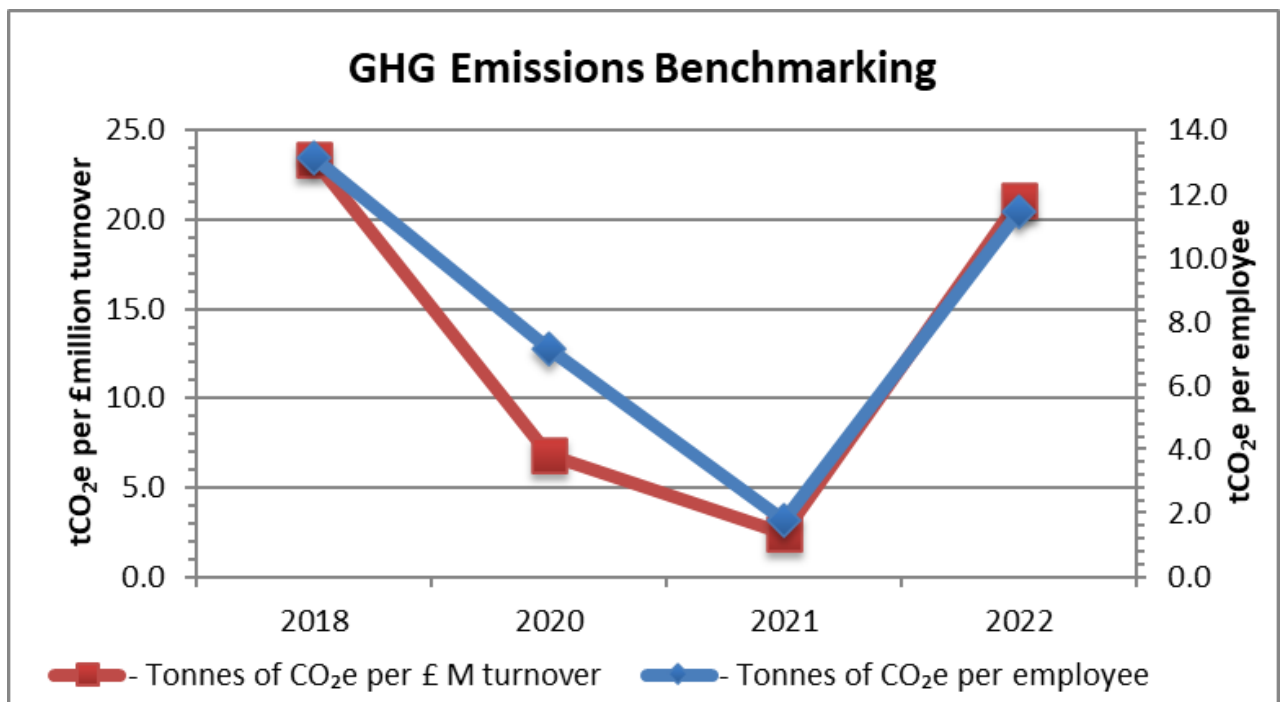


Figure 4: Carbon footprint of TT International for internal benchmarks

A summary of the carbon footprint results can be seen in section 3.1. This will set the base year for all future reports to be compared against.

Carbon Footprint recommends that organisations use the base-year GHG inventory as a benchmark to measure against. When using the base-year GHG inventory as a benchmark, organisations can set realistic reduction targets and measure their progress year on year. This can also provide excellent marketing opportunities, where real figures can demonstrate your commitment towards helping fight climate change.

## 4.2. External benchmarking

Companies often like to benchmark themselves against similar organisations in their sector. Carbon Footprint Ltd has an online tool you can use to find publicly available information on other organisations that have reported their emission.

The Carbon Benchmarking Tool is free to use and can be found online at:

[https://www.carbonfootprint.com/carbon\\_benchmark.html](https://www.carbonfootprint.com/carbon_benchmark.html)

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly. Table 7 summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

**Table 7: TT International 's benchmarked GHG emissions**

Year/Element	Location based	Market based
Total number of employees	118	118
Turnover in £ million	64	64
Tonnes of CO <sub>2</sub> e	<b>1350.33</b>	<b>1359.37</b>
Tonnes of CO <sub>2</sub> e per employee	<b>11.44</b>	<b>11.50</b>
Tonnes of CO <sub>2</sub> e per £ million turnover	<b>21.10</b>	<b>21.24</b>
Scope 1 & 2 Emissions		
Tonnes of CO <sub>2</sub> e	<b>70.98</b>	<b>77.78</b>
Tonnes of CO <sub>2</sub> e per employee	<b>0.60</b>	<b>0.66</b>
Tonnes of CO <sub>2</sub> e per £ million turnover	<b>1.11</b>	<b>1.22</b>

## 5. Conclusion

TT International, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and has achieved: Carbon Assessed Standard

By achieving this TT International has qualified to use the Carbon Footprint Standard branding. This can be used on all marketing materials, including website and customer tender documents, to demonstrate your carbon management achievements.



## 6. Recommendations

### 6.1. Carbon & sustainability targets

#### 6.1.1. Target setting

TT International should set targets based on per employee and/or per £M turnover, which will account for business growth. Typical targets cover mid-term and longer terms goals such as:

- A 50% reduction in emissions per £M turnover/employee by 2030.
- A 90% reduction in emissions per £M turnover/employee by 2040.

All targets set should be reviewed regularly and amended accordingly (i.e. target increased if it is met ahead of schedule). A clear roadmap for individual emissions sources should be in place. This will ensure the strategy for reducing CO<sub>2</sub>e emissions and tracking toward a net zero target is appropriate for the business.

A hyperlink to Carbon Footprint Ltd's whitepaper on target setting can be found below:

[https://www.carbonfootprint.com/docs/2021\\_12\\_cfp\\_practical\\_target\\_setting\\_-\\_white\\_paper\\_v10.pdf](https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf)

#### 6.1.2. Expand the Scope of the Assessment

We recommend that the scope of the assessment is expanded in future to include the aspects that are identified as excluded in Table 1.

The most material element would likely be, purchased goods and services and Capital goods alongside investments, and therefore recommend you focus on capturing data for this ready for next year's appraisal.

#### 6.1.3. Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is 26.4 with the majority of error coming from Site Electricity consumption. To improve the accuracy of future assessments, we recommend the following:

- Work Alongside the building landlord to provide electricity bills for the New York Site
- Work Alongside your landlord to obtain primary records waste consumption within the New York and London site.

## 6.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Offset the calculated footprint by supporting change solutions around the world to maintain the 'Carbon Neutral Organisation' certification.
- Cut back on all non-essential flights. When air travel is required, economy class tickets should be purchased as these cause about a third of the emissions compared to business class. When booking unavoidable flights, consider selecting a specific airline based on their sustainability credentials and how modern their aircraft fleet is. Check out how different airlines compare on our sustainable flying webpage:  
[https://www.carbonfootprint.com/sustainable\\_flying.html](https://www.carbonfootprint.com/sustainable_flying.html)
- Evaluate the effectiveness of using remote meetings and limited travel, and re-define what your business classifies as "essential" travel going forwards. During the COVID 19 pandemic TT international was able to adapt and succeed without the use of extensive air travel.
- Work Alongside your Landlord within your offices to move to a 100% renewable tariff. This will reduce the Market based electricity emissions to zero while also reducing WTT emission.
- Investigate opportunities to reduce site energy consumption across all sites through implementing regular energy monitoring and conducting an energy audit.

## 6.3. Carbon offsetting

**Carbon offsetting is a pragmatic way to compensate for the emissions that you cannot reduce, by funding an equivalent carbon dioxide saving elsewhere.**

We can provide both UK-based and international projects for you to support. The majority of projects focus on the development of renewable energy in developing countries, however there are others which have a greater focus on social benefits as well as environmental benefits. Further detail on the type and specific projects that we currently have in our portfolio can be provided on request or be found at: <http://www.carbonfootprint.com/carbonoffsetprojects.html>.

The cost of offsetting has reduced considerably over recent times. This could be readily funded via the internal carbon pricing system.

*Example of Carbon Offsetting Projects:*



*Tree Planting in UK Schools*



*Avoided Deforestation in the  
Brazilian Amazon*



*Clean Water in Rwanda*



## Annex A

A full breakdown of TT International's emission sources is given below. This aligns with the GHG Protocol classification methodology and provides each associated emission source:

Scope	GHG Protocol Emission Category	Emission Source	Location-Based	Market-Based
1	On-site fuel use	Natural Gas	1.56	1.56
<b>1</b>	<b>Scope 1 Total</b>		<b>1.56</b>	<b>1.56</b>
2	On-site Consumption of purchased electricity, heat steam and cooling	Electricity	69.50	76.30
<b>2</b>	<b>Scope 2 Total</b>		<b>69.50</b>	<b>76.30</b>
3.1	1. Purchased goods and services	Water	0.07	0.07
3.3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Scopes 1 and 2 WTT	16.24	16.24
3.3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Transmission & Distribution	8.70	8.70
3.5	5. Waste generated in operation	Wastewater	12.33	12.33
3.6	6. Business travel (not included in scope 1 or scope 2)	Flights	1238.04	1238.04
3.6	6. Business travel (not included in scope 1 or scope 2)	Taxi	3.37	3.37
3.6	6. Business travel (not included in scope 1 or scope 2)	Rail	1.13	1.13
<b>All</b>	<b>Scope 3 Total</b>		<b>1279.89</b>	<b>1279.89</b>
<b>All</b>	<b>Tonnes of CO<sub>2</sub>e</b>		<b>1350.33</b>	<b>1359.37</b>
<b>All</b>	<b>Tonnes of CO<sub>2</sub>e per employee</b>		<b>11.44</b>	<b>11.50</b>
<b>All</b>	<b>Tonnes of CO<sub>2</sub>e per £ million turnover</b>		<b>21.10</b>	<b>21.24</b>