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ClearBlue Markets Carbon Market Services

ClearBlue's Lifetime Emission Compensation

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Introduction

About ClearBlue

ClearBlue Markets is an award-winning carbon markets consultancy whose team has pioneered the carbon markets since 2000. Our team is comprised of carbon policy and market experts that possess a thorough understanding of the complexities of carbon markets and the opportunities that exists across different programs. We provide integrated and cutting-edge solutions to mitigate risk, optimize carbon positions, and manage the carbon value of emission reduction projects.

ClearBlue is a leader in regulatory and market analysis in North American and European carbon markets and is relied on by industrials, utilities, public sector institutions, organizations, and governments alike. Since 2017, ClearBlue has been voted by clients and industry peers as the best consultancy/advisory in carbon markets by Environmental Finance's annual awards to recognize the leading service providers in these markets. This includes North America, Europe, and China, which is a testament to ClearBlue's global reach.

ClearBlue's Emission Compensation Journey

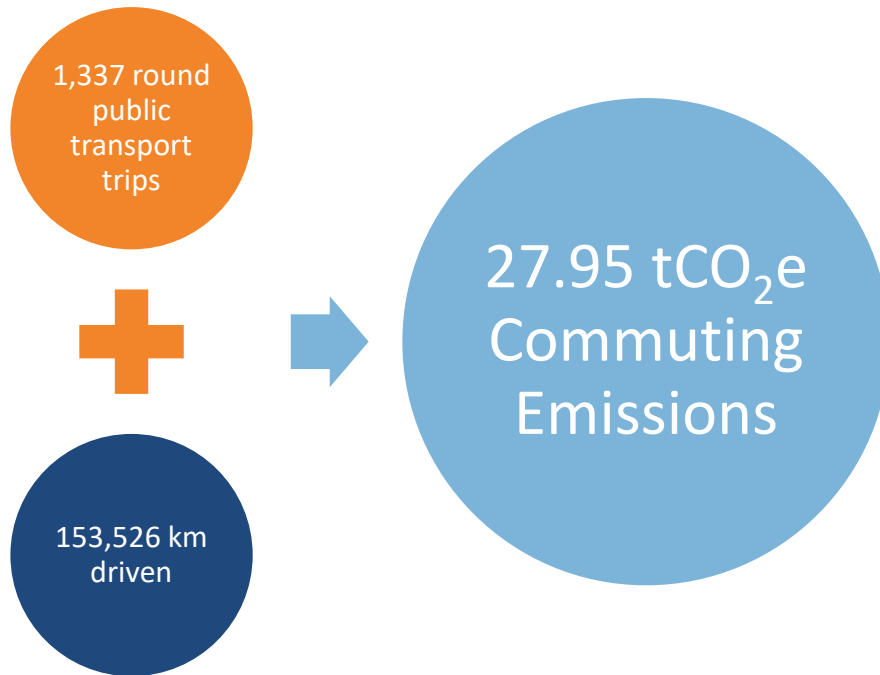
As experts in carbon strategy management, we make every effort to reduce and minimize our carbon footprint. Since our inception in 2016, ClearBlue staff have been making choices with the climate firmly in mind both within and outside of our offices in Toronto and Amsterdam. The majority of our staff travel to and from the office by public transit or a hybrid or electric vehicle. For business travel, staff travel by train rather than plane when feasible. However, ClearBlue recognizes that net zero must be more than words – every effort should be made to achieve this critical target. As a result, **ClearBlue has decided to calculate and offset our lifetime residual emissions, following the 'Measure, Reduce, Offset' approach.** This process began with identifying material areas in each emissions scope, outlined below:

Scope 1: *Commuting*
Scope 2: *Energy Consumption*
Scope 3: *Business Travel*

Upon identifying all material sources, we took a bottom-up approach to calculating our emissions, creating our own calculator based on various emission factors and data. Step 1 (Measure) in this document outlines how the emissions were calculated for each scope, while Step 2 (Reduce) discusses where we have made efforts to reduce our emissions. Finally, Step 3 details our procurement of offset credits and why we **decided to become not only carbon neutral but climate positive** by investing in Madagascar's first solar plant, outlined in Step 3.

Step 1: Measure

Scope 1: Commuting

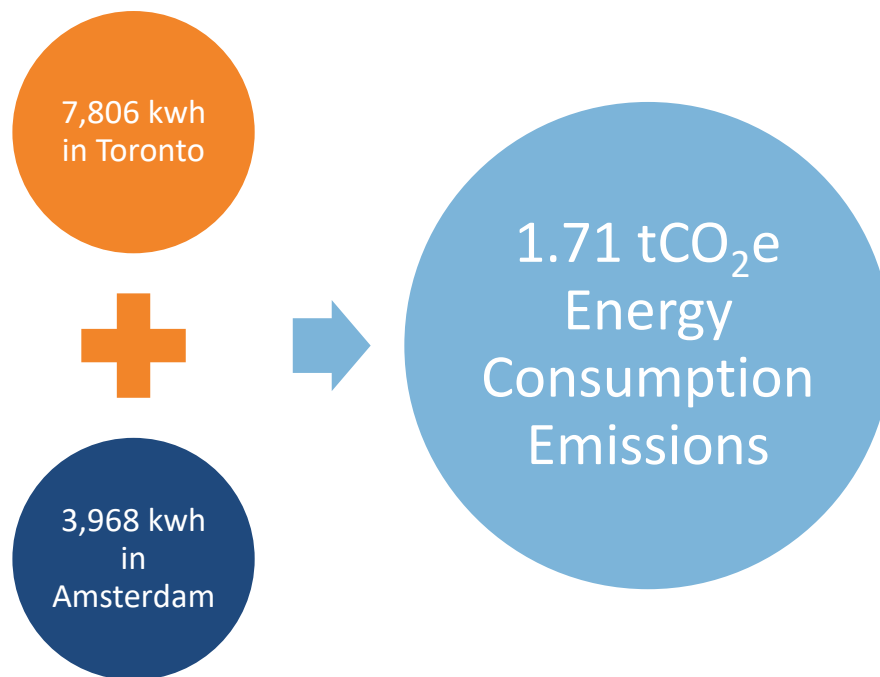


- The COVID-19 pandemic, which resulted in all ClearBlue staff working from home, meant that **our commuting emissions were reduced to nil after March 17th, 2020**
- Prior to this date, staff commutes to ClearBlue’s Toronto and Amsterdam offices are outlined below in Table 1

<i>Commute Type</i>		Calculation
<i>Public Transit (Toronto)</i>	Bus	'tCO ₂ e per round trip' x 'number of trips' ¹
	Subway	
<i>Vehicle</i>	Electric	(kwh/km x local tCO ₂ e/kwh) x km driven ¹
	Hybrid	tCO ₂ e/km x km driven ¹
	Gasoline	
	Diesel	

Table 1

Scope 2: Energy Consumption

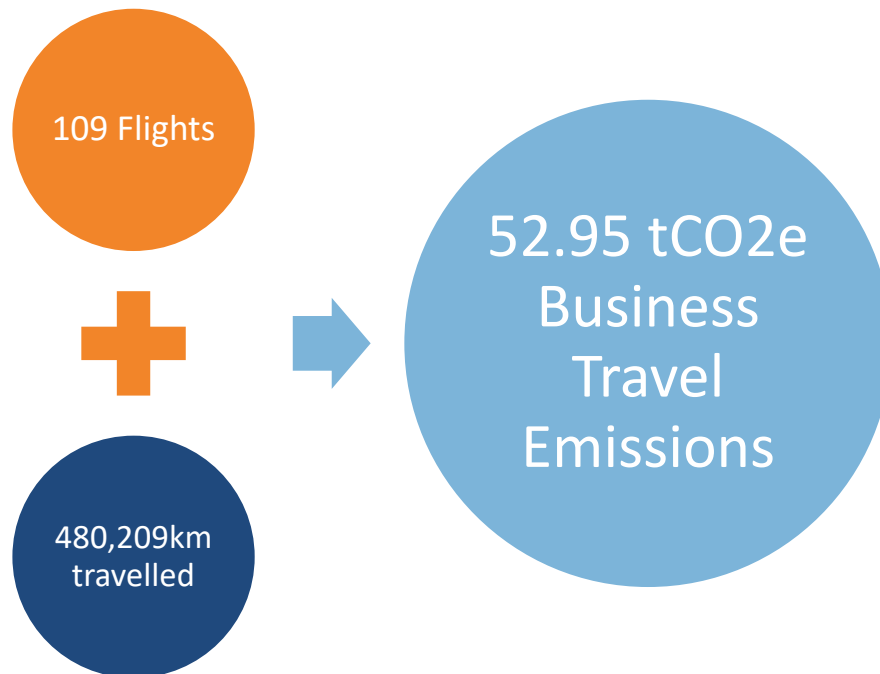


- Staff – whether in the office (pre-COVID) or working from home – are located in **Amsterdam or Toronto**
- All employees were assumed to have **one computer or PC and one additional screen, used for 8 hours per day**
- The average wattage from various sources is outlined below
 - Desktop or Laptop – **92.5 Watts**
 - Monitor – **57.5 Watts**
- The total wattage per employee was then multiplied by the grid emission factor for Ontario¹ and the Netherlands²

¹ Canada's 2020 Greenhouse Gas Inventory

² Ortiz *et al.* (2020)

Scope 3: Business Travel



- The largest source of emissions was airline flights. Available flight emissions calculators were found to vary significantly in terms of output – many did not consider aspects such as plane type and seating class (which can contribute up to 3x as many emissions due to differences in amenities such as legroom and restroom space), as well as used outdated data.
- We created our **own flight emissions calculator** using recent International Council on Clean Transportation (ICCT) data up to 2019 to **calculate emissions factors based on the departure country and plane type, and included a class adjustment factor**

Step 2: Reduce

Through our observations in Step 1 (Measure) when calculating our lifetime emissions, ClearBlue learned some lessons on how to reduce our emissions footprint in the future:

Scope 3

Scope 3 emissions make up the majority of ClearBlue's footprint. The impact of COVID-19 on business travel meant that our emissions fell dramatically after March 2020. Flying should be avoided and replaced by other transit options where possible.

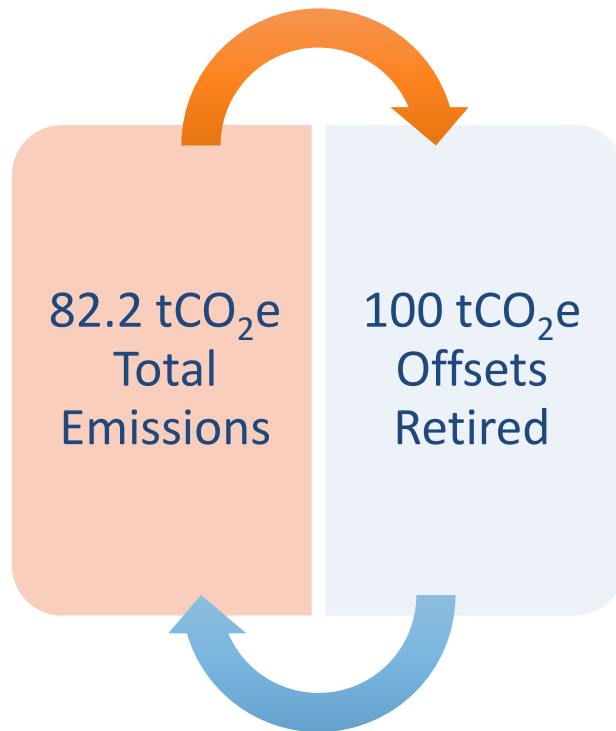
Scope 2

Grid factors, and the location of offices, significantly influence total emissions. Amsterdam and Toronto have dramatically different electricity grid mixes, which was reflected in both electric driving and energy consumption. The Amsterdam office consumed half the electricity of the Toronto office, but was responsible for over 6 times the Scope 2 emissions.

Scope 1

Travelling on public transit (even for a single day per week) and electric vehicles have contributed to significantly reduced commuting emissions relative to the use of a combustion engine vehicle. When considering EVs and hybrid cars, driving an electric vehicle in Amsterdam is still considerably cleaner than a hybrid car in Toronto despite Amsterdam's high electricity grid emissions factor. Limiting driving a fossil fuel powered vehicle for public transit or an electric car, should be encouraged.

Step 3: Offset



Based on the calculations detailed in Step 1 (Measure), ClearBlue’s **lifetime emissions have totaled 82.2 tCO₂e**. ClearBlue has selected to compensate for these emissions by **retiring 50 offset credits generated via Madagascar’s first large-scale solar PV power-plant and 50 offset credits from a Malawi clean water through rehabilitated boreholes project**.

Emissions reductions from the Madagascar project average 23,431 tCO₂e a year and sum up to 164,018 tCO₂e over the total crediting period.³ By helping to fund Madagascar’s transition to clean and renewable energy, the project is providing green energy to the equivalent of 50,000 households⁴ in the city of Ambatolampy. It is further positively impacting the local community by employing up to 80 workers during construction, and 10 during operations³. Operations jobs are set to increase, as the plant announced in June 2021 that it is to be doubled in size to 40MWp and gain 5MWh in battery storage⁵. Schools are offered on-site visits of the plant, and school supplies and clothing are also distributed in the community.

³ Project Description Page, Verra

⁴ Aera Presentation

⁵ <https://www.pv-magazine.com/2021/06/16/plan-to-double-size-of-20-mw-madagascar-solar-park/>

ClearBlue decided to opt for a high-quality emission reduction project which also funds the renewable energy transition in an LDC and contributes to their emission reduction targets, such as those outlined in Madagascar's 2006 Action Plan and its 2015-2030 New Energy Policy. ClearBlue as a company – particularly our Toronto office – has benefitted from a green energy grid when working and travelling, so we viewed that helping fund a renewable energy project in a country where electricity demand is growing at an annual rate of 7% would appropriately compensate for our residual and unavoidable emissions.

Malawi's borehole project was another high-quality appealing project to ClearBlue, particularly due to the co-benefits it brings. Around 33% of the boreholes in the Dowa and Kasungu districts are broken, reducing supply of clean water. In order to address this, the project provides clean water directly through rehabilitated boreholes, thereby preventing the need to boil water, firewood combustion, and the release of 245,000 tCO₂e annually. The clean water also improves sanitation and hygiene particularly helping with the fight against diarrhea. The time previously spent sourcing water, firewood and travelling to the hospital can now be spent more productively farming or on other business activities. Within the UN's SDG framework, this project has the co-benefits of reduced poverty, good health and wellbeing, clean water and sanitation, and climate action.

If you have any questions about this document or about your company's approach to becoming carbon-neutral, please contact us.