

Ecoglo International Ltd

Carbon Emissions Report 2023



Image courtesy of Forever Forests

Flax Hills Forever Forest, Kaikoura, Canterbury, New Zealand



Ecoglo International Ltd. is proud to have a Zero Carbon business operation



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Introduction

Since its establishment in 1997, Ecoglo International Ltd has had at its core the development of innovative products that provide high quality, long lasting solutions that don't "cost the earth". However, while the sustainability value of these solutions has always been important to Ecoglo, it hasn't always been a focus for Ecoglo's stakeholders in the building industry, and so, in the early years, wasn't something Ecoglo saw merit in measuring and reporting.

Without large company backing, the cost of undertaking measuring, independent verification, and reporting was not viable.

But the world has changed, and Ecoglo is acutely aware that reducing our collective environmental footprint has become highly valued and much nearer front of mind for the whole building industry.

Hence, this is a first step at explaining how we got where we are, what we are currently doing, and what we plan to do going forward to ensure we continue to tread as lightly as possible on our only planet. It is a big step for a company of Ecoglo's scale, given the time and cost required to invest in tasks such as having our carbon footprint independently verified, and obtaining Environmental Product Declarations (EPDs).

Our Sustainability Milestones

1997 to present day: Ecoglo began manufacturing and supplying photoluminescent (PL) step edge nosings that harvest sunlight - instead of requiring electricity - to highlight steps in stadiums in New Zealand and Australia. (Ecoglo's product range has expanded over the years and today these products are in use in emergency visibility systems worldwide in many different types of facility.)

2004-2005: Ecoglo specified and installed a bespoke all-electrical (fossil-fuel-free) manufacturing system to produce top of the range PL path marking strip products. The manufacturing incorporates a high temperature curing (HTC) process that permanently bonds the components together to maximise longevity. This ensures an exterior design lifetime of at least 15 years and an interior design lifetime of the life of the building (except for paths with very high foot traffic). At end-of-life the products are 70-90%+ recyclable into aluminium recycling streams.

2005 to present day: Ecoglo has engaged in continuous improvement of its unique manufacturing process to increase productivity, increase efficiency, maintain product quality, and reduce waste.

2006-2007: Ecoglo's sign manufacturing process converted from screen-print (based on solvent based inks) with limited in-service lifetime to the same HTC technology used for the strip products, and with the same design lifetimes.

2012: Ecoglo gained ISO 9001¹ accreditation for its quality management system. While not directly a sustainability initiative, this system enforces the capture of all relevant information in relation to product and service quality in all areas of the company's activities, providing Ecoglo with the data needed to measure the aspects of the business that have environmental impacts.

2014-2016: A range of research and development (R&D) activities were undertaken to investigate the viability of a "hybrid" exit sign - an exit sign that is electrically powered during normal use, but does not need electrical or battery backup power when the normal electricity supply fails. Instead, the normal power supply charges a photoluminescent panel, which ensures the sign remains visible when the power supply fails. The aim of this was to produce an exit sign that could replace traditional battery backup exit signs. This would remove the need for batteries, and all their environmental issues.

2015 onwards: 20% of Ecoglo's workforce were working from home, reducing commute time, reducing carbon footprint, increasing productivity, and improving work/life balance.

2016: The first Ecoglo hybrid exit sign model is introduced into the market.

2016-2018: Ecoglo continued R&D activities to create an improved hybrid exit sign with industry-lowest electricity usage (0.5W) and electronics designed from scratch to have both industry-leading reliability and lifetime.

2018: Ecoglo's next generation hybrid exit sign was released into the market, with an extensive 10 year warranty.

2020: Ecoglo's architectural exit sign range gained "Declare Red List Approved" status, administered by International Living Future Institute (ILFI): <https://living-future.org/declare/basics/> We were able to confirm that our architectural exit sign range contains no Red List² ingredients.

¹ International Standard for Organization (ISO) ISO 9001:2008 Quality Management Systems – Requirements

² The Red List is an annually updated list of materials/chemicals that have been determined to have the worst outcomes for human health and the greater ecosystem, but are still in common use in the building industry.

Note: Ecoglo hybrid exit sign is also known as self-charging LED exit sign

2021 to present day: More than half Ecoglo’s workforce work from home at least 80% of the time.

2022: Ecoglo obtained “Declare Red List Free” status for a range of step nosings.

2022: Ecoglo undertook an internal stakeholder engagement process with Thinkstep ANZ³ and New Zealand Trade and Enterprise (NZTE) to identify relevant and meaningful sustainability goals. (See page 5 for more detail about these.)

2022: Working with Ekos⁴, the greenhouse gas emissions of Ecoglo’s business operations were measured and purchase of forest-restoration carbon offsets to balance our emissions was made.

2022: Ecoglo upgraded its oven to increase capacity and efficiency.

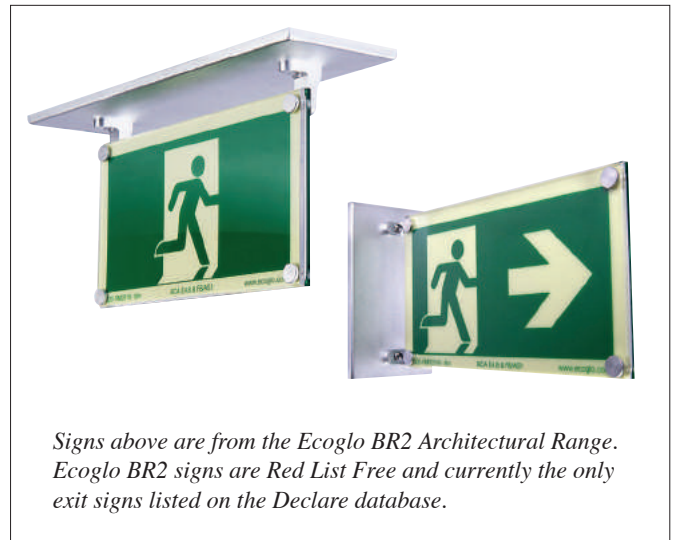
2023: Following extensive testing and exceptional in-service reliability data, Ecoglo increased its hybrid sign warranty to 15 years.

2023: Ecoglo switched its electricity supplier to Ecotricity, at the suggestion of Ekos. While Ecoglo had been using a supplier with a large renewable electricity generation capacity, it couldn’t guarantee that all the electricity it supplied came from renewable, low emission sources. Ecotricity was able to provide that guarantee. The rules around reporting the emissions attributable to the electricity we consume still require us to declare the nation’s average emissions, so this change will not show up as a reduction in our carbon footprint, but we see it as an important signal that we value electricity that comes with the least environmental burden.


³ Thinkstep ANZ is an Australia-NZ organisation that helps businesses on their sustainability journey. (www.thinkstep-anz.com)

⁴ Ekos helps develop and supports carbon projects that grow and protect permanent restorative forests in New Zealand and the Pacific Islands. Ekos connects carbon offset buyers with these projects by measuring business and individual carbon footprints, supplying certified forest carbon offsets, and providing carbon certifications (Zero Carbon, Climate Positive, Carbon Footprint Certifications). These forest carbon projects deliver climate resilience, waterways protection, erosion control, biodiversity protection and community economic development.

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Signs above are from the Ecoglo BR2 Architectural Range. Ecoglo BR2 signs are Red List Free and currently the only exit signs listed on the Declare database.



Ecoglo Step Nosings
Ecoglo International Ltd

Final Assembly: Christchurch, New Zealand
Life Expectancy: Installed Outdoors 15 Year(s), Installed Indoors 30+ Year(s)
End of Life Options: Recyclable (75-95%), Landfill (5-25%)

Ingredients:

Aluminum; 1,3,5-Triglycidyl-s-triazinetrione; Aluminum Oxide; Aluminum strontium oxide (Al2SrO4); Amorphous silica; Antioxidant 1010; Barium; Barium sulfate; Benzoin; Bismuth; C. I. Pigment Blue 15; C.I. Pigment Yellow 42; Calcium; Carbon black; Cerium; Chromium, metallic; Copper; Dairylide Yellow; Dysprosium; Erbium; Europium; Gadolinium; Glycerides, C16-18 mono- and di-; Holmium; Iron; Lanthanum; Lutetium; Magnesium; Manganese; Neodymium; Peach; Poly(butyl acrylate); Poly(glycerol isocyanurate); Polyester resin; Polyester resin; Polyethylene; Praseodymium; Rutile (TiO2); Samarium; Silica gel, pptd., cryst.-free; Silicon; Silicon carbide whiskers; Strontium; Thulium; Tin, Organic; Titanium; Titanium dioxide; Ytterbium; Zinc; Zirconium oxide (ZrO2)

Living Building Challenge Criteria: Compliant

I-13 Red List:

■ LBC Red List Free	% Disclosed: 100% at 100ppm
□ LBC Red List Approved	VOC Content: Not Applicable
□ Declared	

I-10 Interior Performance: Not Applicable
I-14 Responsible Sourcing: Not Applicable

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MANUFACTURER RESPONSIBLE FOR LABEL ACCURACY
 INTERNATIONAL LIVING FUTURE INSTITUTE™ living-future.org/declare

Ecoglo International Ltd Sustainability Framework

Development of Meaningful Sustainability Goals

Dialogue with Thinkstep ANZ and NZTE led to the majority of Ecoglo staff partaking in a workshop with ThinkStep ANZ in 2022 to brainstorm our common goals: what is important to us as individuals and to the company. From this consultative process we determined which United Nations Sustainable Development Goals (SDGs) best fit with our values.

We arrived at the following:

- SDG8 Decent Work and Economic Growth
- SDG11 Sustainable Cities and Communities
- SDG12 Responsible Consumption and Production
- SDG13 Climate Action

These SDGs provide us with the foundations to develop our sustainability framework, and keep us focused on the most important issues.

Sustainability Framework

Our Purpose:

To make the world a safer and more sustainable place for everyone

Our Values:

Manaakitanga (ensuring respect for all)

Kaitiakitanga (committed to sustainable development)

Tikanga (doing what is right, when it is right)

Ecoglo's sustainability definition:

With consideration for social, environmental and economic issues, operating a responsible business now that does not impact on future generations.

Social

We do the right thing by or staff, customers and supply chain.

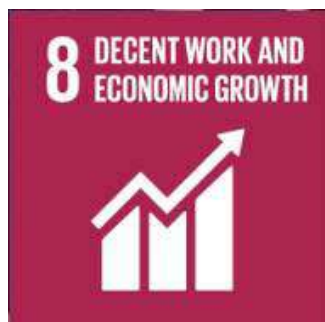
Environmental

Our focus is on energy efficiency and lower impact manufacturing.

Economic

We produce quality products and offer economic benefits for customers - promoting fairness across the supply chain.

Our UN Sustainability Goals



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.



Make cities and human settlements inclusive, safe, resilient and sustainable.



Ensure sustainable production and consumption patterns.



Take urgent action to combat climate change and its impacts.

2021/2022 Sustainability Report

As our first major new initiative within the SDG13 space, Ecoglo International Ltd is now proud to have a Zero Carbon business operation: we are certified with Ekos as “Zero Carbon Business Operations” [<https://ekos.co.nz/>]. We have measured and offset the greenhouse gas emissions (often just referred to as “carbon footprint”) of our business operations for the 2021/2022 financial year with certified carbon credits.

In accordance with ISO 14064-1: 2018⁵ methodology, this footprint, includes greenhouse emissions from:

- Our manufacturing processes
- Mobile combustion (fuel used by company vehicles, etc.)
- Electricity use
- Inward freight
- Business travel
- Staff commuting
- Work from home
- Waste from our operations
- Purchased goods
- IT services / data storage



and excludes greenhouse emissions from:

- Freight to our products to customers at our customer’s expense (this is normally controlled by the customer, so not easily influenced by Ecoglo)
- Water consumption (our only water consumption is drinking and personal hygiene for our staff)
- Paper consumption (we consume very little paper)
- Capital goods (it was determined that the data would be difficult to obtain, and unlikely to amount to anything significant)
- Production of the raw materials we purchase*
- The use of our products*
- The end phase of our products*

**These are outside the scope of the normal method of measuring the carbon footprint of a company’s business operations. We plan to measure life-cycle impacts covering these aspects in an Environmental Product Declaration (“EPD”) for specific Ecoglo products, starting with our hybrid exit signs in the coming year.*

⁵ ISO 14064-1 2018: Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

Note: Ecoglo hybrid exit sign is also known as self-charging LED exit sign

Offsets

Our offsets have been sourced in the form of Permanent New Zealand Restorative Forest Units (NZUs) produced in 69 hectares of retired farmland: “Flax Hills” <https://www.foreverforests.co.nz/our-projects/flax-hills>

near Kaikoura, Canterbury, Aotearoa New Zealand and verified to the New Zealand Emissions Trading Register. These offsets help to deliver climate resilience, waterways protection, erosion control, and biodiversity conservation.

Emissions Reduction Initiatives

While one outcome from measuring the impacts from Ecoglo’s business operations is the ability to offset our emissions with local re-forestation initiatives (which is a solution for now), the aim is to reduce our emissions: this is ultimately the only responsible way forward. The emission measurement process has enabled us to see where our main emissions are, so that we can develop a plan to reduce our overall impact in a measurable way.

Measuring our carbon footprint has highlighted that our factory operation itself contributes little more than 10% of our total footprint. Our “Big Three” emissions come from inward goods freight, business travel, and business vehicle use. None

of these are easily reduced in the short term, and given that the measurement period coincided with pandemic-induced travel restrictions, the business travel emissions may well increase in the short term. However, Ecoglo is committed to seeking ways to reduce our emissions whenever possible, both short and long term, and ultimately to significantly reduce our emissions intensity (i.e., reduce our emissions per \$unit of turnover).

The goals of reducing our carbon footprint (SDG13) and improving the sustainability of our production (SDG12) are strongly interrelated with the products that we manufacture. Our aim is to identify what we need to focus on by measuring the impact of our products using three different metrics: Carbon footprint; EPDs; and the ILFI “Red List”.

Planned Short Term Initiatives (2023 - 2024):

SG12:

- Carry out an EPD for our hybrid exit sign to establish the main life cycle impacts.
- Identify all ingredients in our hybrid exit sign down to CAS (Chemicals Abstract Service) numbers to enable listing these signs on the ILFI Declare database.

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SDG13:

- Plan for fewer, but longer, long-haul trips, e.g., 1 x 3 week trip instead of 3 x 1 week trips.
 - Order items online for delivery by courier instead of making individual car trips to collect items.
 - Measure “base-load” electricity usage at both operations sites to check for any unnecessary usage.
 - Develop a dashboard to show how much progress we are making on each initiative.
-

Planned Medium /Long Term Initiatives (2024 - 2028):

SDG 12:

- Analyse EPD data for our products so we can plan programmes to reduce their life-cycle impacts.
- Work with suppliers to obtain 100% Red List Free ingredients in our hybrid exit signs.
- Promote choice of lower-weight products for suitable market applications.

SDG 13:

- Replace vehicles with lower / low / zero emission options.
- Install roof-top PV (photovoltaic) panels at our factory site to convert thermal energy into electricity.

We plan to develop a full emission reduction plan by the 4th quarter of 2024.

Looking to the Future

We do expect the business to grow, with the effect that our total emissions will also likely grow, but we will be working hard to reduce the amount of emissions per unit that we sell. For example, in the exit sign market, it is the building code that effectively dictates how many exit signs are needed in facilities in

New Zealand. Our aim is to sell signs that last longer and have lower environmental impact than the industry’s “business-as-usual” options. The medium / long term effect of that in real terms is a reduction in the total number of new signs that will need to be bought in New Zealand each year.