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**Greenhost Sustainability Report 2021–2024**

## Introduction

Greenhost is built on two core values: sustainability and an open, free Internet. These values guide our daily work and the choices we make as a company. This report gives an overview of our environmental impact from 2021 to 2024, the decisions we made, and how we look at the future.

## Vision

The Internet uses large amounts of energy and plays a significant role in global $CO_2$ emissions. Greenhost wants to offer a cleaner, more responsible alternative.

For us, "green hosting" means more than using renewable electricity. It includes:

- responsible choices in hardware, office materials, and travel
- reducing waste
- giving products a second life
- investing in sustainable energy
- thinking about long-term environmental impact

## Methodology (How we measure)

We calculate our impact in two main areas:

1. **Datacenter electricity use** (our largest footprint)
2. **Business travel**

We use the following approach:

- **Energy use** is measured directly from each datacenter.
- **PUE** (Power Usage Effectiveness) is used to include cooling and facility overhead.
- **$CO_2$ per kWh** values come from Electricity Maps (average per region).
- **$CO_2$ from travel** is calculated using TreesForAll's online calculator.
- For datacenters without renewable energy, we buy **GVO certificates**.

Formula used:

**$CO_2$ = kWh × PUE × gCO₂eq/kWh**

## Key Emissions

Greenhost's emissions mainly come from **electricity usage in datacenters** and **international travel**.
Other sources exist but are small in comparison.

We always choose renewable energy when it is available locally. When datacenters cannot provide this (such as in Miami and Taipei), we buy certified renewable energy (GVOs). Even when using green energy, we still calculate our theoretical $CO_2$ impact from the local grid mix.

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## Datacenters

Greenhost operates in:

- **Amsterdam** (2 locations, 100% renewable electricity)
- **Miami** (1 location)
- **Taipei** (1 location)

For each location we measure electricity use (kWh), use the datacenter PUE, and apply the local $CO_2$ intensity.

**Datacenter $CO_2$ Overview (grid-based / theoretical)**

|  | mWh | gCO2eq/kWh | PuE | $CO_2$ (Ton) |
|---|---|---|---|---|
| **Amsterdam** | | | | |
| 2021 | 40 | 368 | 1.25 | 18* |
| 2022 | 65 | 337 | 1.25 | 27* |
| 2023 | 75 | 284 | 1.25 | 27* |
| 2024 | 104 | 263 | 1.25 | 34* |
| | | | | |
| **Miami** | | | | |
| 2021 | 19 | 586 | 1.6 | 18 |
| 2022 | 19 | 567 | 1.6 | 17 |
| 2023 | 19 | 545 | 1.6 | 17 |
| 2024 | 17 | 536 | 1.6 | 15 |
| | | | | |
| **Taipei** | | | | |
| 2022 | 0.5 | 535 | 1.6 | 0 |
| 2023 | 2 | 538 | 1.6 | 2 |
| 2024 | 2 | 525 | 1.6 | 2 |
| | | | | |
| **Total** | | | | **176** |

*) The Amsterdam region data-centers use 100% renewable energy. The emissions are zero. However, because we are skeptical about the effectiveness of the green energy certification system in Europe, we still calculate the $CO_2$ grid emissions.*

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## Travel

Travel emissions depend on the number of conferences, events, and international meetings.

- Travel was low during Covid (2021–2022).
- In 2023, postponed events resulted in more trips.
- In 2024, we reduced international travel again.

We use TreesForAll's calculator to estimate total $CO_2$ production.

| Travel | $CO_2$ (Ton) |
|---|---:|
| 2021 | 2 |
| 2022 | 9 |
| 2023 | 26 |
| 2024 | 13 |
| **Total** | **50** |

## Covid and the office

Before Covid, Greenhost worked from a sustainable office in Amsterdam (Patch22), built with wood, bamboo, and energy-efficient systems.

During Covid, we switched to remote work. After the pandemic, far fewer people returned to the office, and maintaining a large space no longer made environmental sense.

In 2023, we left our office and moved to shared co-working spaces. This reduces wasted space and unnecessary energy use. In the future, we may move to a smaller shared-facility office.

**Live Cycle Management**

**Office furniture & equipment**

When leaving the office, almost all furniture and equipment was reused:

- given away locally through a community "garage sale"
- or stored for later internal use

This kept waste to a minimum.

**Decommissioned Hardware**

Old servers are replaced only when necessary for efficiency, reliability, or performance.

In 2024, instead of sending servers to recycling companies, we donated them through **De Leeuw Kyiv**, a Dutch group that equips hospitals in Ukraine.
The servers were cleaned, prepared, and now support medical infrastructure - giving them a meaningful second life.

## $CO_2$ Compensation and Investments
Greenhost compensates emissions in two ways:

- **Tree planting** through TreesForAll (long-term $CO_2$ absorption)
- **Investments in renewable energy** through Meewind

We believe tree planting is important, but is not a long-term solution. As rule of thump, we invest an equal amount in energy transition fund(s) for a structural impact.

**2021–2024 Summary**

- **Direct emissions:** 50 ton $CO_2$
- **Indirect emissions (datacenters):** 176 ton $CO_2$
- **Total offset: 250 ton $CO_2$**
- **GVO purchases:** 126 mWh for Miami and Taipei

## Future Goals

### Review server lifecycle impact

The Dutch energy grid is becoming cleaner. This means the emissions from manufacturing new servers may outweigh the gains from replacing old ones.
In 2025, we will review:

- the $CO_2$ cost of producing new servers
- the impact of running older hardware longer
- whether our replacement policies need to change

### Increase collaboration with partners

Greenhost became part of The Sharing Group in 2024.
With partners such as LeafCloud, we are exploring:

- sharing knowledge
- waste-heat reuse
- more efficient server-heat reclaim systems

Heat reuse has technical challenges, but it can significantly reduce environmental impact.

## Conclusion

Between 2021 and 2024, Greenhost kept its environmental footprint relatively low through renewable energy use, responsible travel, reuse of materials, and investments in sustainable energy.

We will continue improving how we measure, reduce, and compensate our emissions and work with partners to create a more sustainable Internet.