



# Villa in the Vineyard Sustainability Impact Report For 2022 & 2023

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## Introduction

Villa in the Vineyard was established from the outset to be based on environmental and ethical foundations.

The holiday rental apartment is located on the ground floor of the building and I live in the apartment on the upper floor with my husband.

## Scope 1, 2, 3 emissions for 2022 & 2023

We chose 2021 as our base year for our first Climate Action Plan published in July 2022. This was because, despite covid restrictions, we still had a fairly good summer season and in March 2021 we moved to a renewable energy provider for our electricity. Here are details for 2022 and 2023.

### Scope 1 (direct emissions from running our property):

**Company vehicles:** None but have a personal hybrid electric/petrol car

**Fuel combustion:** We installed an air-source heat pump to replace the gas boiler as a back-up to our solar panels in winter. When we have guests, this back-up is rarely needed. The only LPG gas we use now is for cooking.

**Fugitive emissions:** no air conditioning

## Scope 1, 2, 3 emissions for 2022 & 2023

### Scope 2 (direct emissions from purchased electricity)

**Purchased electricity, heat and steam:** From Enostr, a renewables supplier

Photovoltaic panels for electricity with excess requirements from Enostr. We installed a new ultra-efficient inverter which has reduced our energy consumption by about a quarter. No air conditioning – underfloor heating and cooling powered by an air to water heat exchange pump

Solar panels for hot water with excess requirements from heat pump.

Swimming pool powered by low energy pump.

## Scope 1, 2, 3 emissions for 2022 & 2023

### Scope 3 (indirect emissions from our supply chain)

**Purchased goods and services** – buy local and mainly organic

**Waste disposal** – recycle according to local municipality guidelines

**Water use** – rainwater harvesting and well as well as mains water

**Indoor air quality** – only certified organic cleaning and personal care products used

**Land use/pesticides etc** – organic kitchen garden and rented out land operated using regenerative farming practices inc organic treatments

## Scope 3 (indirect emissions from our supply chain)

**Chemicals:** Only used organic cleaning and personal care products but they still have a carbon footprint. On Compare Your Footprint I chose the most ecological products but there were no organic options. See details of the products/companies we use below.

**Food and drink:** This covers food purchased for guests. We buy organic and local food for our guests but there were not many organic options in the calculator so our footprint should be less

**Water:** We have our own septic tank for sewage, large tank for rainwater harvesting connected to the house gutters and a well for watering the vegetable garden. We use mains water in the house and for topping up the swimming pool.

# Carbon emission calculations for 2022 and 2023



## Baseline figures - 2021

We use Compare Your Footprint for our carbon calculations. I am an Ambassador for Compare Your Footprint and can offer a **10% discount** (20% if you're a B Corp) when you register through me.



# Baseline year - 2021

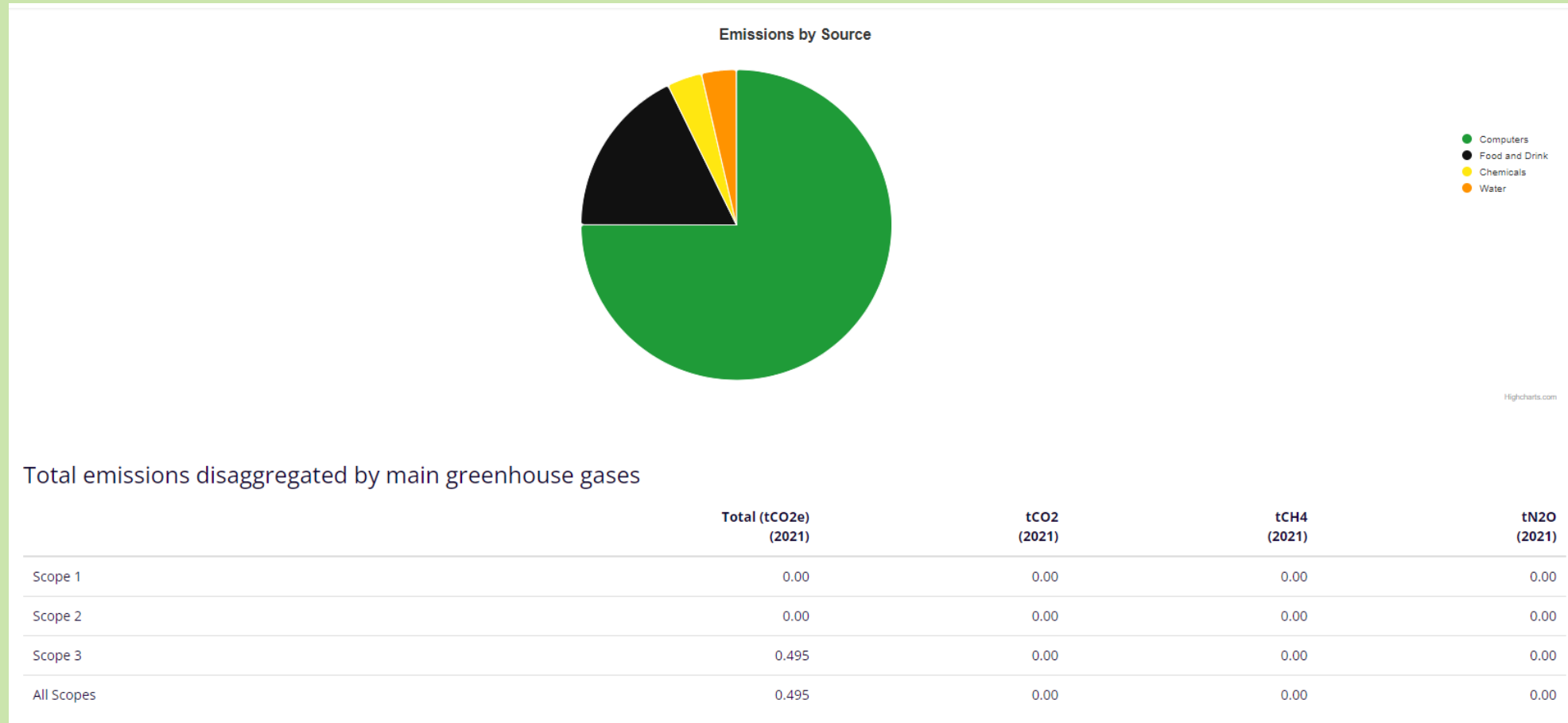
## Total Reported Greenhouse Gas Emissions and Intensity Ratios

| Scope      | Total (tCO2e)<br>(2021) | tCO2e / Revenue<br>(2021) | tCO2e / m2<br>(2021) |
|------------|-------------------------|---------------------------|----------------------|
| Scope 1    | 0.00                    | N/A                       | N/A                  |
| Scope 2    | 0.00                    | N/A                       | N/A                  |
| Scope 3    | 0.495                   | N/A                       | N/A                  |
| All Scopes | 0.495                   | N/A                       | N/A                  |

tCO2e – tonnes of carbon dioxide equivalent emissions

Our total emissions for 2021 were 0.495 and these were all in Scope 3, ie our supply chain. Also we have not been able to include electricity for laundry done off-site (approx. one third of total) We have only calculated our downstream emissions, ie our supply chain, not our upstream emissions created by guests' travel.

# Source of carbon emissions 2021



The main source of our emissions in 2021 was the purchase of a new laptop which will not happen every year (the last one lasted 10 years!)

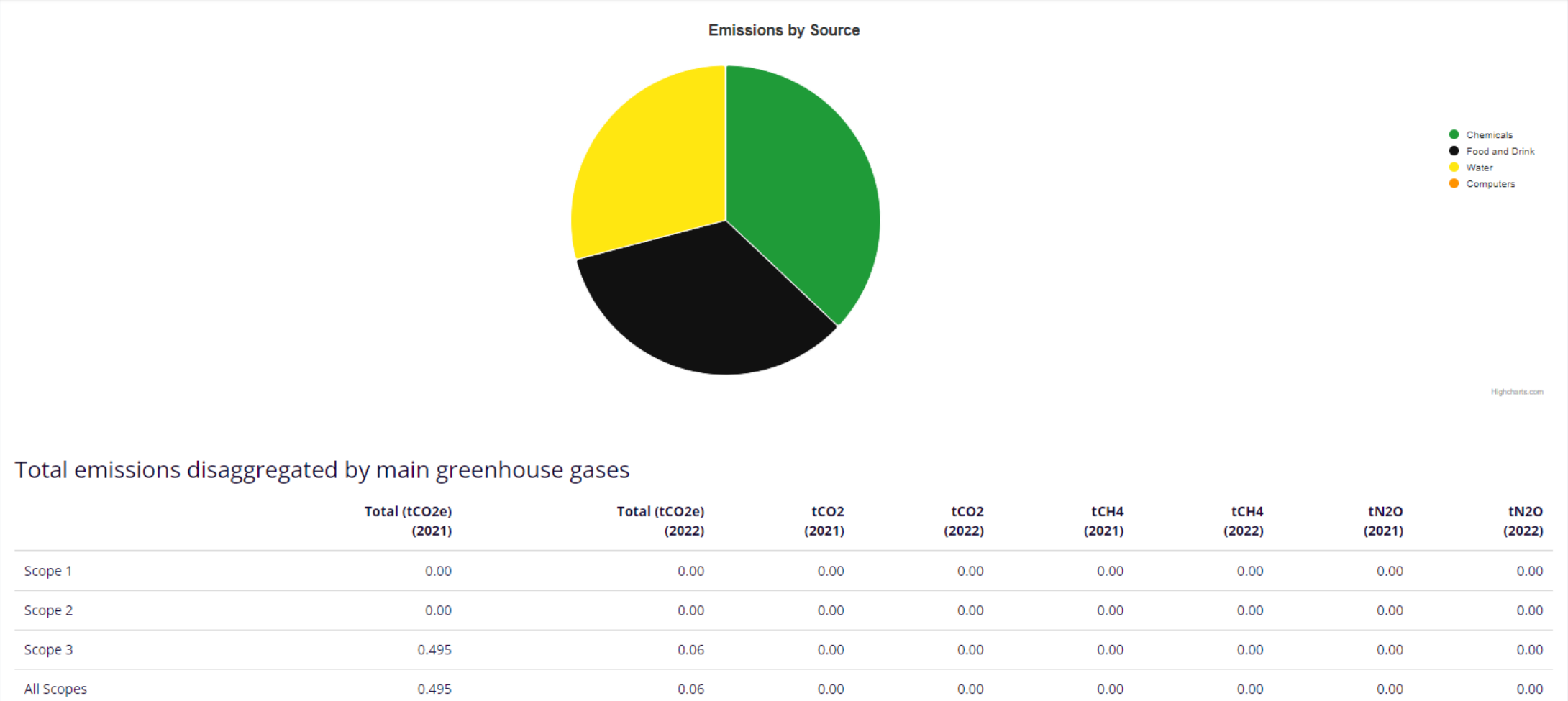
# Carbon emissions calculations 2022

Total Reported Greenhouse Gas Emissions and Intensity Ratios

| Scope      | Total (tCO2e)<br>(2021) | Total (tCO2e)<br>(2022) | tCO2e / Revenue<br>(2021) | tCO2e / Revenue<br>(2022) |
|------------|-------------------------|-------------------------|---------------------------|---------------------------|
| Scope 1    | 0.00                    | 0.00                    | N/A                       | N/A                       |
| Scope 2    | 0.00                    | 0.00                    | N/A                       | N/A                       |
| Scope 3    | 0.495                   | 0.06                    | N/A                       | N/A                       |
| All Scopes | 0.495                   | 0.06                    | N/A                       | N/A                       |

Our total emissions for 2022 were 0.06 and these were all in Scope 3, due to no purchase of a laptop and changing the welcome pack to contain no perishables.

# Source of carbon emissions 2022



The main source of our emissions in 2022 were cleaning, laundry and guest toiletries. Alongside food and drink for the welcome pack plus water use.

# Carbon emissions calculations 2023

Total Reported Greenhouse Gas Emissions and Intensity Ratios

| Scope      | Total (tCO2e)<br>(2022) | Total (tCO2e)<br>(2023) | tCO2e / Revenue<br>(2022) | tCO2e / Revenue<br>(2023) | tCO2e / m2<br>(2022) | tCO2e / m2<br>(2023) |
|------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------|----------------------|
| Scope 1    | 0.00                    | 0.00                    | N/A                       | N/A                       | N/A                  | N/A                  |
| Scope 2    | 0.00                    | 0.00                    | N/A                       | N/A                       | N/A                  | N/A                  |
| Scope 3    | 0.06                    | 0.053                   | N/A                       | N/A                       | N/A                  | N/A                  |
| All Scopes | 0.06                    | 0.053                   | N/A                       | N/A                       | N/A                  | N/A                  |

tCO2e – tonnes of carbon dioxide equivalent emissions

**Our total emissions for 2023 were 0.053 and these were all in Scope 3. The figure was very similar to 2022 and was due to slightly less guests with smaller group numbers than in 2022.**

# Source of carbon emissions 2023

Emissions by Source



Highcharts.com

Total emissions disaggregated by main greenhouse gases

|            | Total (tCO2e)<br>(2022) | Total (tCO2e)<br>(2023) | tCO2<br>(2022) | tCO2<br>(2023) | tCH4<br>(2022) | tCH4<br>(2023) | tN2O<br>(2022) | tN2O<br>(2023) |
|------------|-------------------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Scope 1    | 0.00                    | 0.00                    | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Scope 2    | 0.00                    | 0.00                    | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Scope 3    | 0.06                    | 0.053                   | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| All Scopes | 0.06                    | 0.053                   | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |

The main source of our emissions in 2023 were the same as 2022 but slightly higher water usage for the pool due to the very hot summer.

# 2022 & 2023 consumption



## 2022 & 2023 consumption

As you can see from our carbon footprint, we have no emissions in Scopes 1 and 2 as we have a contract with a 100% renewable electricity company.

What follows is a list of the suppliers we are still working with.

### Welcome pack

In 2022, we changed our welcome pack as there was too much waste. We left out fresh food like bread, butter, eggs and milk. We kept in the bottle of wine from the vineyards on our land and oil from our olive trees. Then added in a pack of organic pasta from a local supplier and a small jar of local honey. In addition, there is always free organic produce from our kitchen garden.



## Scope 3 emissions – 2022 & 2023

### Purchased goods and services

Nivel for cleaning products and toiletries: we buy in bulk to refill our containers and return the bulk containers for re-use. All certified organic, made in Lucca in Tuscany which is on the opposite coast to us in Le Marche

Ikea for bedding, towels, sundries

Local Conad store for recycled toilet paper, kitchen paper etc – one of more responsible supermarkets in Italy

## Scope 3 emissions – 2022 & 2023

### Purchased goods and services cont'd

Local organic shop Biogreen for Welcome Pack food as well as from our own organic vegetable garden

Wine from Casale Vitali grown on our land using regenerative agriculture

### Waste disposal

Rubbish split into plastic, paper, glass, non-recyclable and for composting ourselves. We have large bins for each at the top of our road – for the whole road! In 2023, we added the fun stickers from Sustonica, particularly as we achieved their verification badge!

## Scope 3 emissions – 2022 & 2023

### Water use

We have dual-flush toilets and flow reducers on taps plus water efficient showers.

We have rainwater harvesting from the roof into a large underground tank and a well for capturing rainwater. This water is used to irrigate the gardens and the vegetable garden. It is not enough to use for flushing toilets due to reduced rainfall.

The swimming pool is filled partly by rainwater in the early season and then topped up using mains water.

## Scope 3 emissions – 2022 & 2023

### Indoor air quality

We only use organic cleaning and laundry products without synthetic fragrance. Guests receive complimentary organic handwash, shampoo/bodywash, organic hand sanitizer and spray.

We do not have air conditioning but underfloor cooling by heat exchange pump. We encourage guests to open windows in the bathrooms to air the room.

## Scope 3 emissions – 2022 & 2023

### Land use/pesticides

Most of our land is rented to the Vitali family who cultivate mainly vines on it. They follow regenerative farming practices: leaving wild grasses and flowers between the rows of vines to provide nutrition for the soil, use of Bordeaux mix (copper sulphate) rather than chemical sprays, sheep to ‘mow’ and ‘fertilise’ the grass.

We have our own organic kitchen garden which is entirely organic with no chemical treatments used. We also have 67 olive trees to produce olive oil which we also manage organically.

## Scope 3 Achievements



## Action Plan 2022 & 2023 - Results

Although we have no Scope 1 or Scope 2, we still upgraded our renewable technology. We installed an Ariston air-source heat pump for hot water to replace our gas boiler as a back-up to our solar panels.

We also installed a highly efficient new inverter by Fronius to increase the production of electricity from our photovoltaic installation of 6 kW. The company is Austrian with a maintenance company in our area.

Our main actions have been focused on our Scope 3 emissions via our suppliers and guests. As we live in the villa ourselves upstairs, I have only included emissions for the weeks we have guests staying downstairs.

## For suppliers – downstream Scope 3 emissions

### Cleaning products and toiletries

I did ask our current supplier, Nivel, if they have carbon emission data and they informed me that this will be available for 2023. So I will include that in our 2025 impact report.

### Toilet paper etc

I did investigate this and we are planning to order Who Gives A Crap for our 2024 season. Just ran out of time to sort out for the 2023 season.



## For suppliers – downstream Scope 3 emissions

### Waste disposal

I have to admit that I did not check with local municipality what is actually done with all the items we separate for recycling.

### Booking platforms

We did review the platforms we are on for finding guests. We actually stopped using AirBnb with 90% of our guests coming direct and 40% repeat bookings. We still get most guests direct or returns followed by Sawday's Travel who are a B Corps with a comprehensive sustainability strategy.

## For guests – upstream Scope 3 emissions

### For Guests (upstream)

Here are the goals we set:

- Recommend a carbon footprint calculator so that guests can see how much carbon they are generating from their stay with us – **did not do this as on reflection felt it was unfair to judge, particularly as they have chosen to stay in an eco property like ours**
- Investigate a carbon offset option – **decided against this as I am still not convinced about the effectiveness of offset**
- Provision of glass bottles to complement the promotion of water stations for refilling at very low cost – **this was done**

## For guests – downstream Scope 3 emissions

- ‘Guided tours’ of our control room to explain how the various renewable technology works – **we continued to do this which was enthusiastically received as many guests have plans at home**
- Investigate providing electric bikes to encourage less use of the car (difficult as we are quite remote) – **we did this with leaflets but failed to put it in our digital guide**
- Consider a referral scheme linked to conservation for guests to recommend us, ie Sibillini mountain protection – **I discovered that here in Italy most conservation schemes are funded by the region.**

## Overall measurable goal by end 2023


To be fully electrified without the need for gas as a back-up to our solar powered hot water. **This was achieved.**

Undertake a full review of our renewables system – **this was done and resulted in the installation of a new inverter for our photovoltaic installation.**

## Goals for 2024

As we live in an eco-home which has no Scope 1 and 2 emissions and very low Scope 3, it is quite hard to reduce significantly!

The best impact I can have, in my opinion, is to inspire and support other property owners to set up their own sustainability plan. I am always happy to share our experiences here in Italy. Of course, we will always be open to doing new things, ie installing an EV charger, once there is demand from guests.

An aerial photograph of a rural property. In the foreground, a two-story stone house with a tiled roof has several solar panels installed on it. A swimming pool with a curved edge and blue water is situated next to the house, surrounded by a paved deck and some lounge chairs. To the right of the pool, there is a large, well-maintained vineyard with rows of grapevines. The background shows rolling green hills with scattered trees and a few distant buildings under a clear sky. The overall scene is peaceful and scenic.

Please feel free to contact me on [nikki@nikkimattei.com](mailto:nikki@nikkimattei.com) with feedback and comments or if you are interested in a **10% discount on Compare Your Footprint.**