

Technical Note – Monitoring Platform Environmental Benefits Calculation

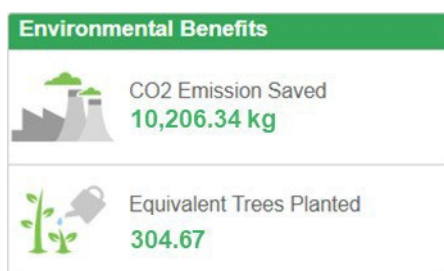
Version History

- Version 2.4 - added CO₂ Factor and Trees Planted Factor for Australia
- Version 2.3 – added CO₂ Factor and Trees Planted Factor for Turkey
- Version 2.2 - updated CO₂ Factor and Trees Planted Factor for Spain
- Version 2.1 – updated Trees Planted Factor according to updated EPA guidelines.

Introduction

The **Environmental Benefits** area in the monitoring platform dashboard shows the site's positive impact on the environment.

The following figure illustrates the benefits of a 3.9 kWp system, installed in the United Kingdom in October 2011. Since then (as measured in July 2019), this system has produced approximately 26.04 MWh.



Environmental Benefits Description

The environmental benefits are defined in the following table:

Benefit	Description	Formula and example
CO ₂ Emission Saved	Each kWh of electricity can be generated using fossil fuel, which generates CO ₂ emissions. The number shown is the quantity of CO ₂ emissions that would have been generated by an equivalent fossil fuel system. This number depends on the systems' location; the emissions level in each country is listed in the appendix.	$CO_2 \text{ (kg)} = \text{kWh produced} \times CO_2 \text{ Factor (g/kWh)}$ In the example above: $14,420 \text{ kWh} \times 392 \text{ g/kWh} = 5652 \text{ kg}$.
Equivalent Trees Planted	Trees absorb CO ₂ , thus reducing CO ₂ environmental pollution levels. The number shown is the equivalent planting of new trees for reducing CO ₂ levels. This number depends on the systems' location; the tree absorption level in each country is listed in the appendix.	$\# \text{ of trees planted} = \text{kWh produced} \times \text{Trees Planted Factor (trees/kWh)}$ In the example above: $14,420 \text{ kWh} \times 0.0117 \text{ trees/kWh} = 168.714 \text{ trees planted}$.

For further information on the effect of CO₂ emissions on the environment, see the United States EPA Greenhouse gas equivalencies calculator, which is located at: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

Appendix: CO₂ and Trees Planted Factors by Country

The table below contains the CO₂ and Trees Planted factors used in the SolarEdge monitoring platform (Source: U.S. EPA).



NOTE

The EPA publishes factor modifications from time to time. The values in this document may not represent the most up-to-date factors.

Country	CO ₂ Factor (g/kWh)	Trees Planted Factor (trees/kWh)
Australia	603.3	0.0117
France	70	0.00023
Japan	450	0.0015
Poland	1000	0.0117
Singapore	540	0.0117
Spain	265.4	0.0117
United States of America	689.56	0.0117
Turkey	619.8	0.0117
All Others	392	0.0117