Working towards a greener world from behind the keyboard.

Natalia Waniczek
@lil_natw
@devsociety_


Reebok

Working towards a greener world from behind the keyboard.

Natalia Waniczek
@lil_natw
@devsociety_


AND

Working towards a greener world from behind the keyboard.

Natalia Waniczek
@lil_natw
@devsociety_


Natalia
@lil_natw
Hey Twitter! I'm writing a talk about technology's impact on environment. Unfortunately no-one ever talks about it and there isn't that much out there on a topic so if anyone knows of any good resources, please let me know. RT please :)
10:45 AM · Oct 8, 2019 · Twitter Web App
View Tweet activity
22 Retweets
13 Likes


OMG
CLIMATE
UNCONFERENCE
October 18th 2019 • LONDON
• A COMMUNITY-RUN •
open event &
collaborative
conversation
ON THE
CLIMATE
CRISIS
CLASSIC CONFERENCES
SHOWCASE
CODIFIED
EXPLICIT
KNOWLEDGE
Unconferences
Reveal
TACIT
INTUITIVE
KNOWLEDGE
practice
values
more likely
to lead to
break
throughs
know
how
experience

Agenda

1. Current state of climate change
2. Technology’s place in climate change
3. Ways of reducing carbon emissions working in this industry
4. What good is already happening?

We only have 10 years left

Since systematic scientific assessments began in the 1970s, the influence of human activity on the warming of the climate system has evolved from theory to established fact.

Global fossil CO2 emissions in 2021 returned to the pre-pandemic levels of 2019

The most recent seven years, 2015 to 2021 were the warmest on record.

Globally, by the 2050s, over 1.6 billion people living in over 970 cities will be regularly exposed to 3-month average temperatures reaching at least 35 °C.





US$ 140 billion per year

==

< 0.2% of global GDP





60% of wildlife has been lost since 1970



Over the past two decades,

9 sea levels have risen by 3.2mm per annum







We’re on course to lose over half of all insects by the end of the century



Music streaming accounted for 200 to 350 million kilograms of greenhouse gas emissions.

Streaming spotify 8 hours a day for 21 working days emits as much CO2 per month as driving 19.6 miles by an average passenger vehicle.

Internet is responsible for 3.7% greenhouse gas emissions

== aviation

== Germany

1. Data Centers
2. Data Transfer
3. Device energy

3% of the global electricity supply

2% of total greenhouse gas emissions

Environment

Global warming: Data centres to consume three times as much energy in next decade, experts warn

416.2 terawatt hours of electricity world's data centres used last year was far higher than UK's total consumption

Tom Bawden Environment Editor | @BawdenTom |
Saturday 23 January 2016 22:37 |

THE GREEN WEB FOUNDATION

NEWS PUBLICATIONS TOOLS SERVICES PARTNER UP ABOUT DATASET LOGIN

Towards a fossil free internet by 2030

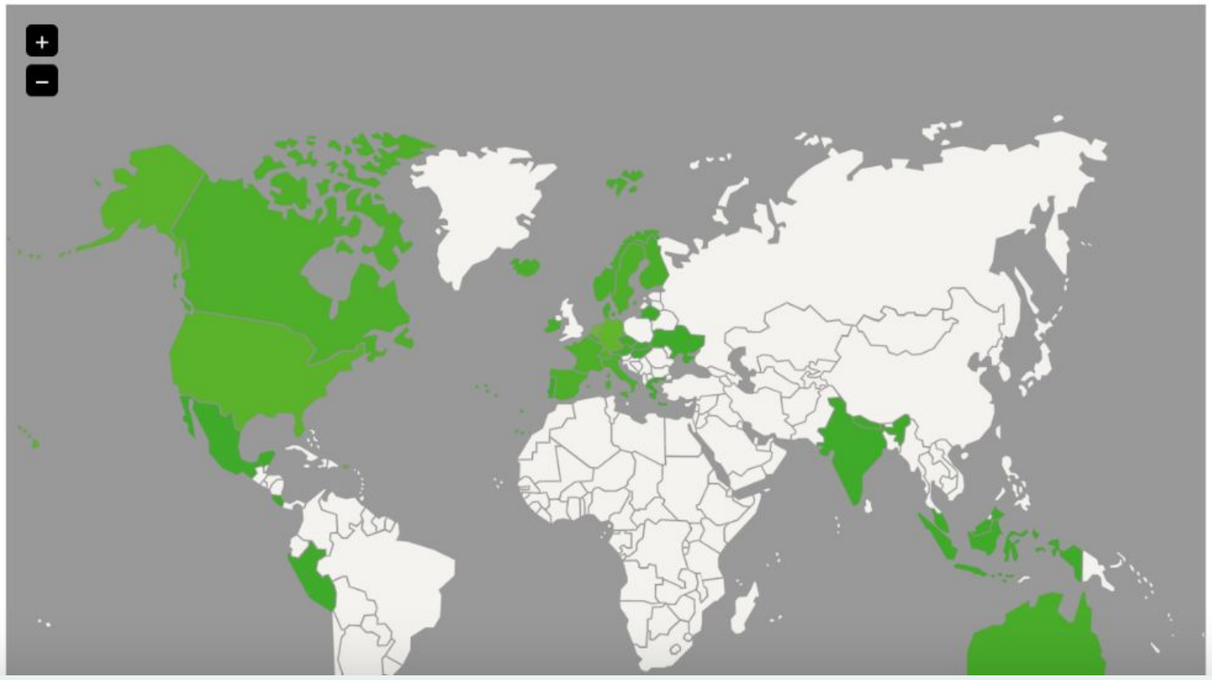
The Green Hosting Directory, as used by the apps

On this page, you will find our Green Hosting Directory.

For every country, the list starts with Partners: the hosting companies that provide proof of their green claims.

This service is provided free of charge for green hosters that can be identified through AS numbers and/or IP ranges.

Are you missing a green hosting provider in this list? Please register yourself or ask them to register with us.



Result of the green web check — ffconf.org is hosted green!

Congratulations! The website is hosted green.

This hoster is using green energy / compensation for its services.

Hosted by: Google Inc.

Supporting evidence for the hoster's claims

- Sustainability at Google
- Independent verification of Google 2020 Reporting
- 2021 Environmental Report
- 2022 Environmental Report
- Independent verification of Google 2021 Reporting

The average web-page size in 2014 was only 1.6 MB!

In September 2022, the average web-page size is around 2.2 MB for desktop sites and 2 MB for mobile sites.

Design

- Less is more
- Accessibility
- UX

Sustainable Software Engineering

1. Carbon : Build applications that are carbon efficient.
2. Electricity : Build applications that are energy efficient.
3. Carbon Intensity : Consume electricity with the lowest carbon intensity.
4. Embodied Carbon : Build applications that are hardware efficient.
5. Energy Proportionality : Maximize the energy efficiency of hardware.
6. Networking : Reduce the amount of data and distance it must travel across the network.
7. Demand Shaping : Build carbon-aware applications.
8. Measurement & Optimization : Focus on step-by-step optimizations that increase the overall carbon efficiency.

Imagery

- Less is more
- SVG & CSS > img/png/tiff
- Optimise
- WebP (or AVIF)
- Lazy load

Video

- Less it more
- Don’t autoplay
- Do you need it?

Unnecessary extras

- Tracking
- Chatbox
- Ads

Did I do enough?

The original Website Carbon calculator

Estimate your web page carbon footprint:

Your web page address

Web page URL

Calculate

By using this carbon calculator, you agree to the information that you submit being stored and published in our public database.

Hurrah! This web page is cleaner than 95% of web pages tested

Only 0.04g of CO2 is produced every time someone visits this web page.

This web page appears to be running on sustainable energy

How do I work out the carbon footprint of sending data?

How much CO2 is emitted by loading a webpage? If we know how much data we are moving each time, and we know often it happens, we can work this out.

Size of the download, in megabytes

This could be a video, a software update, or a webpage comprised of multiple elements

0.197

Number of downloads

Every visit to a site counts as a download. We ignore caching for now.

26800

Downloading 0 megabytes, 26,800 times per month, results in 4.574 kilos of CO2 emitted per month.

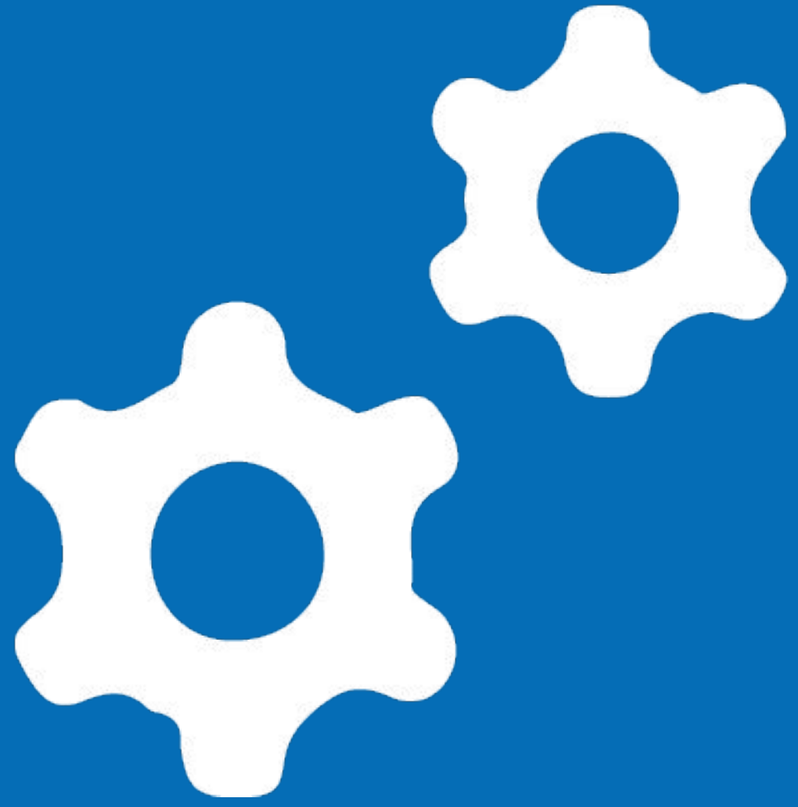
Over a year, assuming this is the same each month, this is 0.055 tonnes per year.

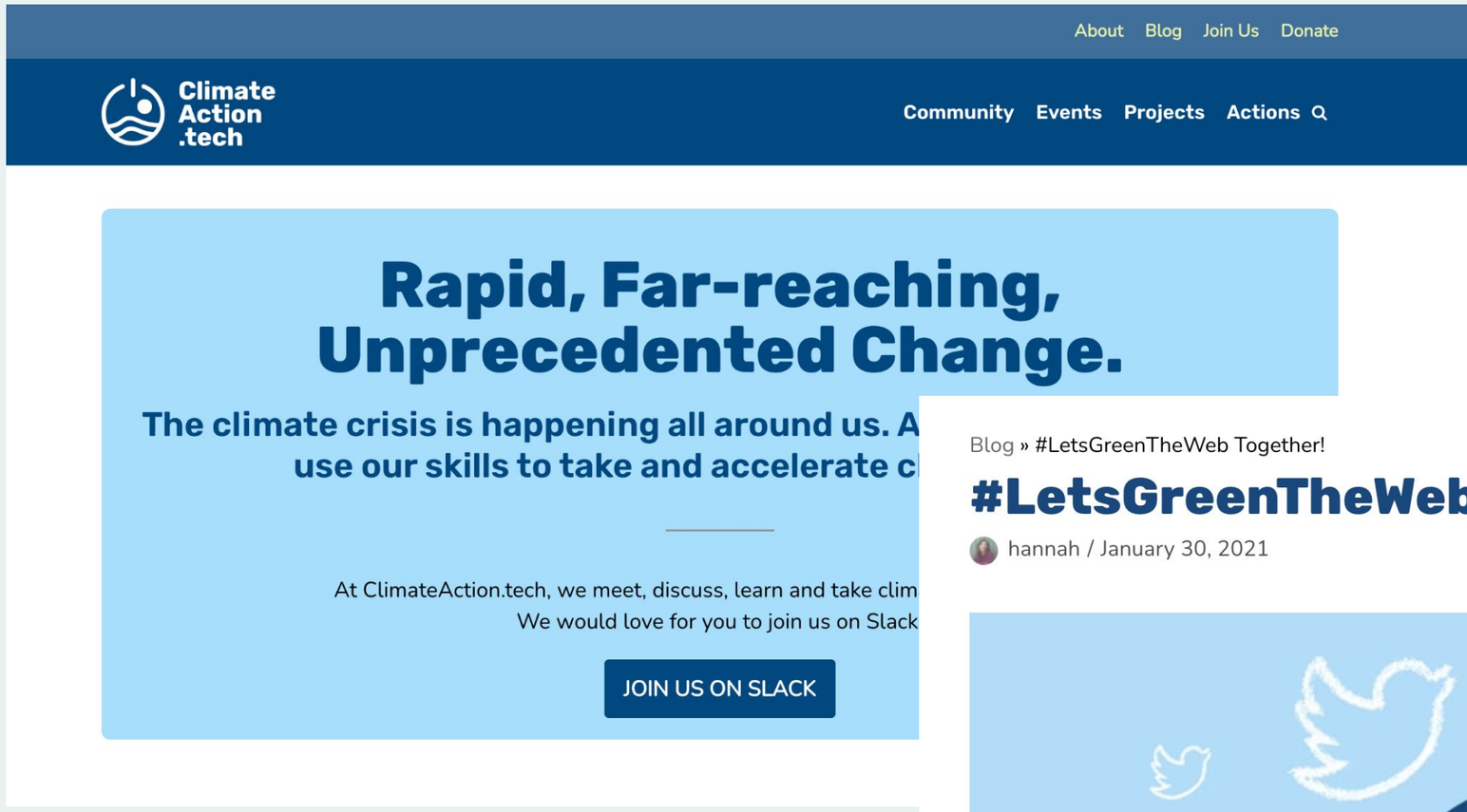
556 number of smartphones charged ?

5.1 pounds of coal burned ?

11.4 miles driven by an average gasoline-powered passenger vehicle ?

Operations / day to day





Blog » #LetsGreenTheWeb Together!

#LetsGreenTheWeb Together!

hannah / January 30, 2021

Did you know that every time a website is loaded, it's responsible for carbon emissions?

Principles.Green

Home Related Endorse the principles GitHub

Principles of Sustainable Software Engineering

Endorse the principles | Join the newsletter

Introduction

Sustainable Software Engineering is an emerging discipline at the intersection of climate science, software practices and architecture, electricity markets, hardware and data centre design.

The **Principles of Sustainable Software Engineering** are a core set of competencies needed to define, build and run sustainable software applications.

CARBONALYSER

Carbonalyser
by The Shift Project

Allows to visualize the electricity consumption and greenhouse gases (GHG) emissions that your Internet browsing leads to.

Only with Firefox—Get

NORTH

The climate impact of every choice you make.

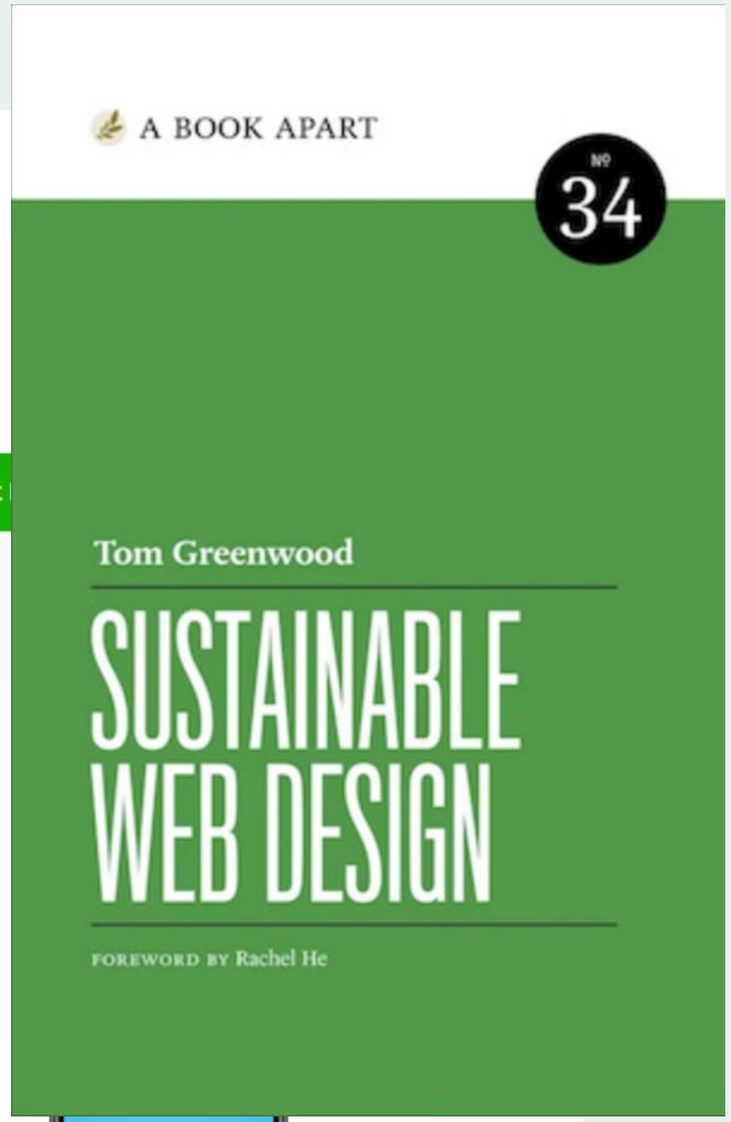
North automatically calculates the climate impact of your daily choices by connecting to apps and services you already use.

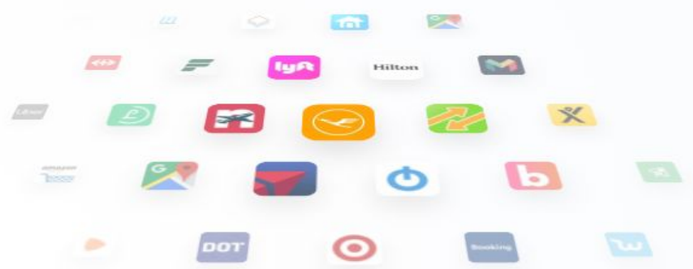
Join the public beta!

Download on the App Store

GET IT ON Google Play

Help us build integrations that matter on github.





We only have 10 years left

We ~~only~~ STILL have 10 years left

Working towards a greener world from behind the keyboard.

Natalia Waniczek
@lil_natw
@devsociety_