

**Sostenibilidad digital:
qué es y por qué tenerla en cuenta cuando
creas webs y aplicaciones**

Nahuai Badiola

¿Qué me vas a contar?

- ▶ 🌍 Contexto -> cifras WTF 😱
- ▶ 🤔 Hipótesis
- ▶ 😍 Beneficios
- ▶ 🃏 Trucos
- ▶ 📚 Recursos

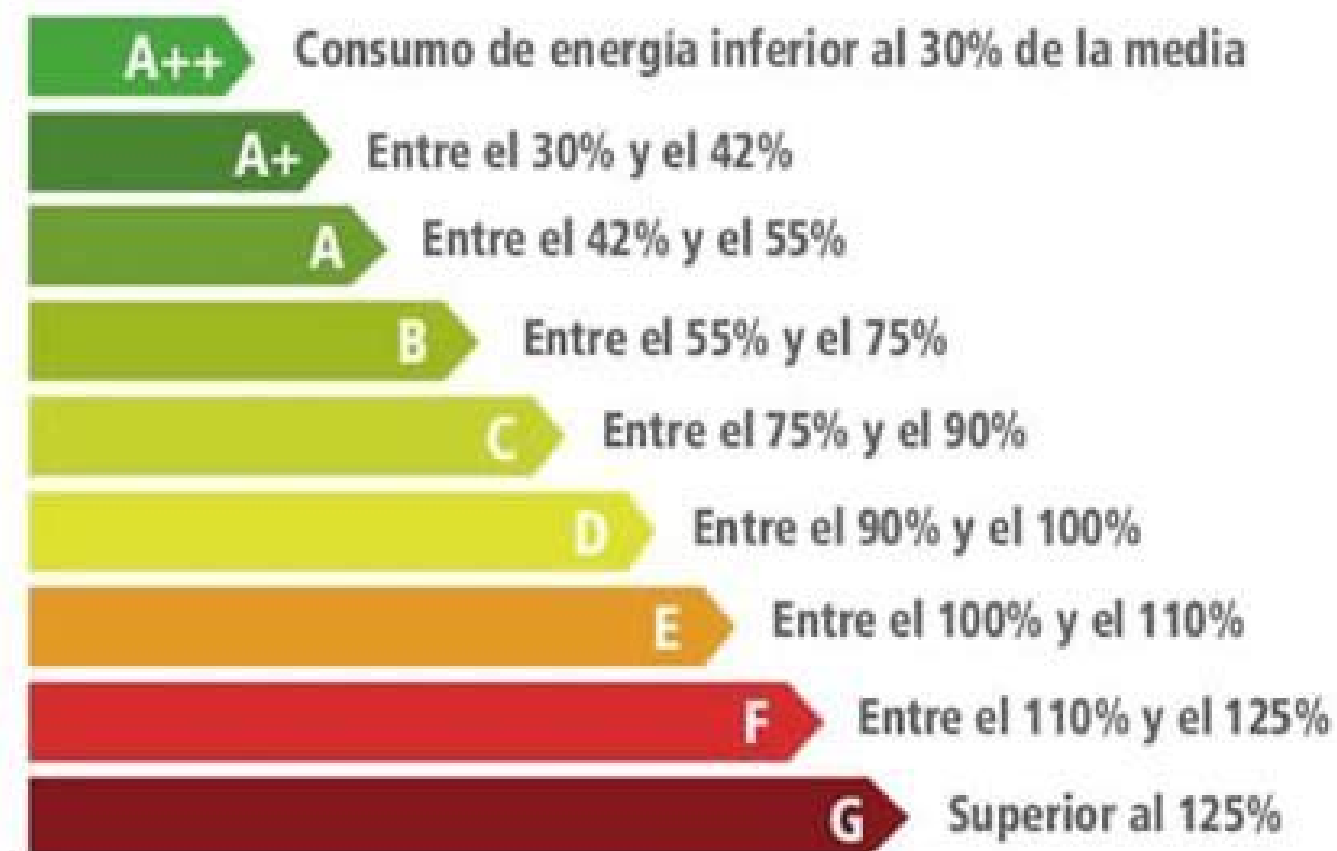
El contexto

- ▶ Si internet fuera un país -> 6^o en gasto energético
- ▶ Internet emite más gases invernadero que la industria aeronáutica
- ▶ Internet 2-4% de emisiones de CO₂ global -> 14% en 2040
- ▶ Energía servidores x6 en 10 años (UK)
- ▶ 5-31% webs usan hosting con energía renovable
- ▶ 1.2g a 3.6g CO₂ por página visitada

Hipotesis 1

Se crea un certificado de sostenibilidad web en base al CO₂ emitido

MÁS EFICIENTE



MENOS EFICIENTE



Etiqueta Cero Emisiones
Eléctricos, híbridos enchufables y de pila de hidrógeno.



Etiqueta Eco
Turismos híbridos no enchufables, impulsados por gas (GLP, GNC).



Etiqueta C
Turismos gasolina matriculados a partir de 2006; diésel desde 2014.



Etiqueta B
Turismos gasolina matriculados entre 2000 y 2005; diésel entre 2005 y 2013.



Hipotesis 1

Se crea un certificado de sostenibilidad web en base al CO₂ emitido




Herramientas

Website Carbon Calculator [How does it work?](#) [FAQ](#) [Get the badge!](#) [API](#) [Consultancy](#)

Website carbon results for: [nbadiola.com](#)

A Hurrah! This web page achieves a carbon rating of A


This is cleaner than **89%** of all web pages globally

 Global average


Learn about our [rating system](#)

This page was last tested on 17 Nov, 2023. [Test again](#)


[Copy URL](#)


 Only **0.12g of CO2** is produced every time someone visits this web page.


[How do we calculate this?](#)


 This web page appears to be running on **sustainable energy**


[How do we find this out?](#)


Over a year, with  **10,000** monthly page views, [nbadiola.com](#) produces

 **13.86kg of CO2 equivalent.**
As much CO2 as boiling water for 1,879 cups of tea

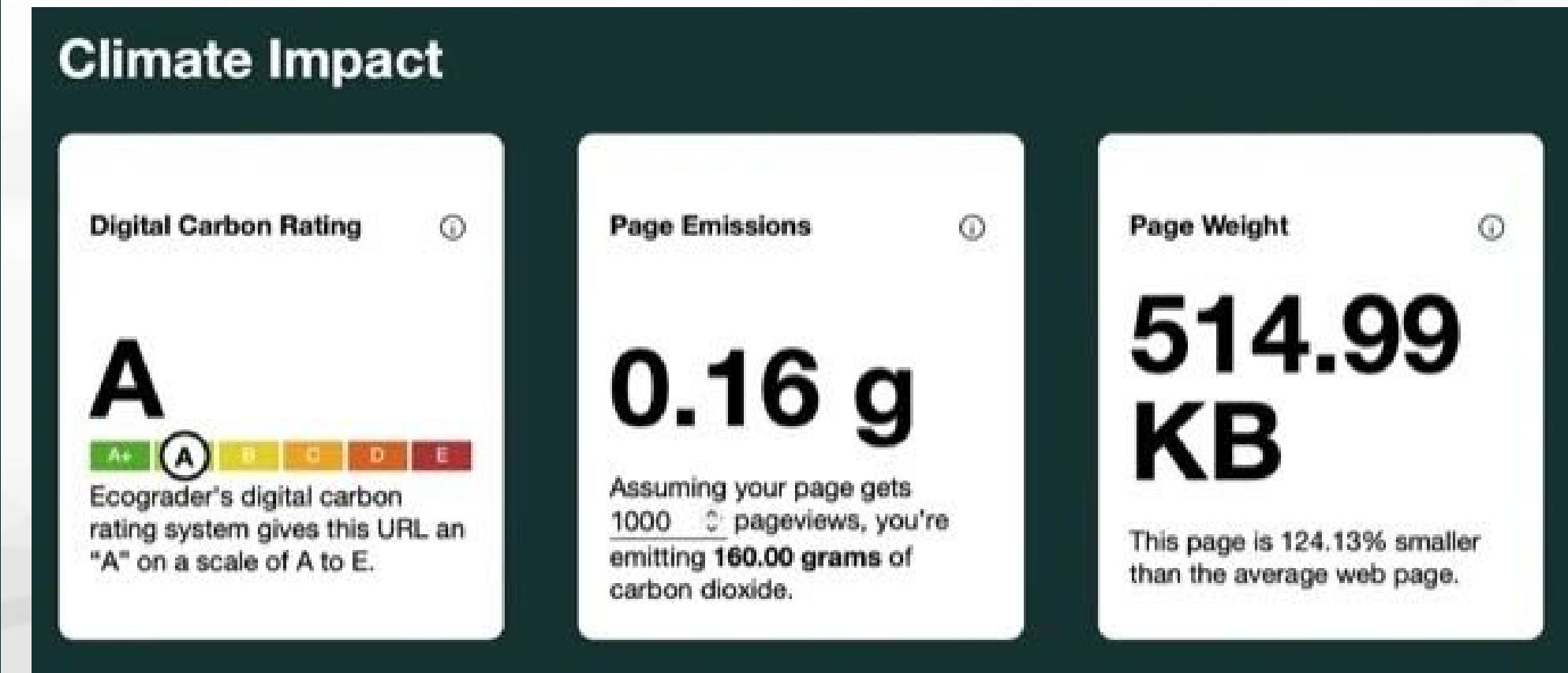
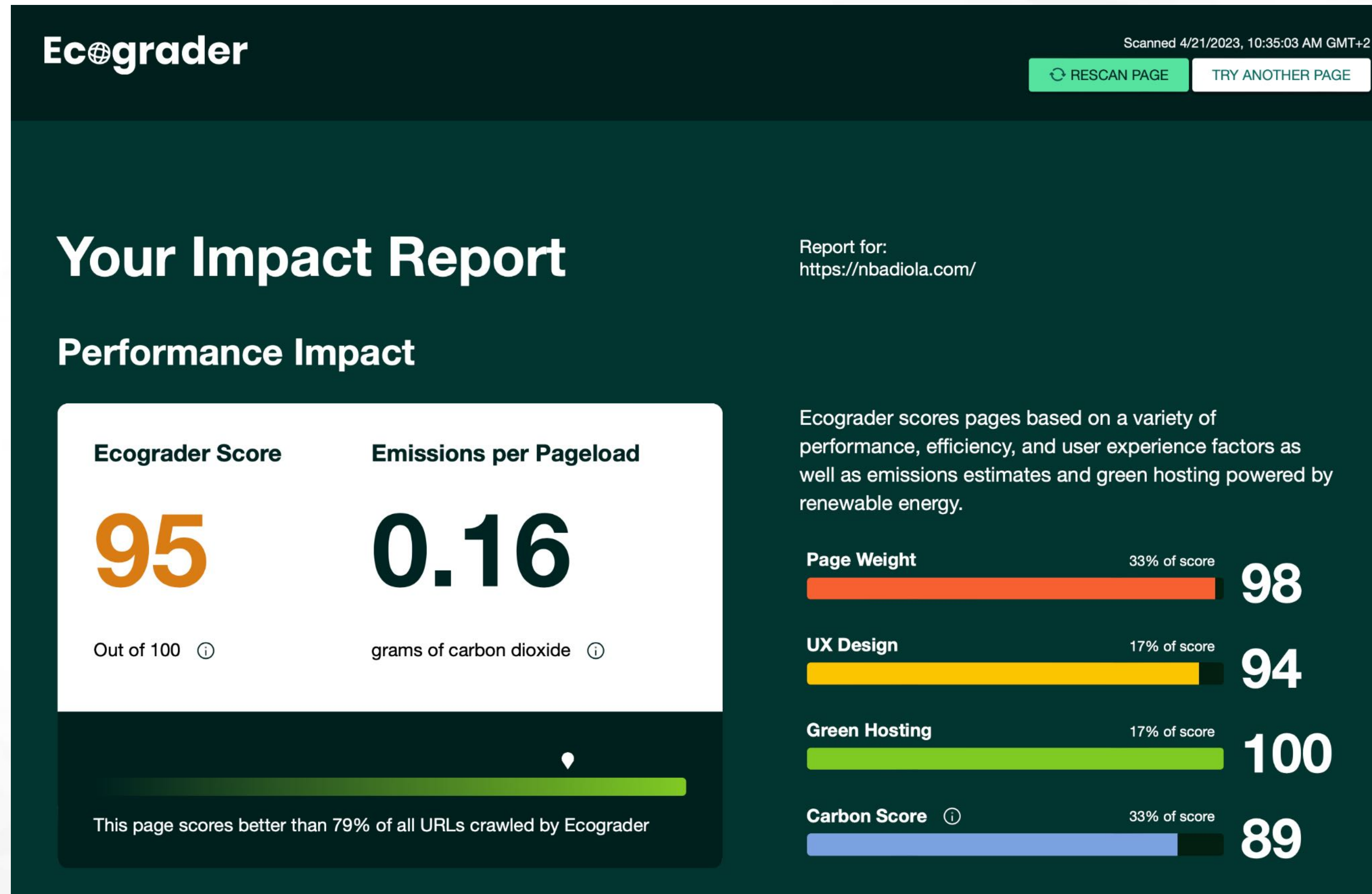
 **36 kWh of energy**
As much CO2 as 3,015 full charges of an average smartphone

 **15 billion bubbles**
Woah, that's a lot of bubbles!

 **1 tree**
This web page emits the amount of carbon that 1 tree absorbs in a year.

 **36kWh of energy**
That's enough electricity to drive an electric car 232km.

Herramientas



Fuente: Ecograder

Herramientas

Ecoping

Dashboard

Sites

Insights

Pages

Actions

Settings

Settings

Report for: <https://nbadiola.com>

Update Site

1 Page



Top tip:

Add more pages to give you a **more** accurate idea this overall website carbon emissions.



EcoScore

**1 page of your site produced
0.03 gCO2e per page view.**

Site Stats

Looking at 1 pages of your website, here are your key stats.

EcoScore ⓘ

0.88

CO2 grams ⓘ

0.03

Grid Intensity ⓘ

105.00

Transfer size ⓘ

459.6 KiB

Page Load Time ⓘ

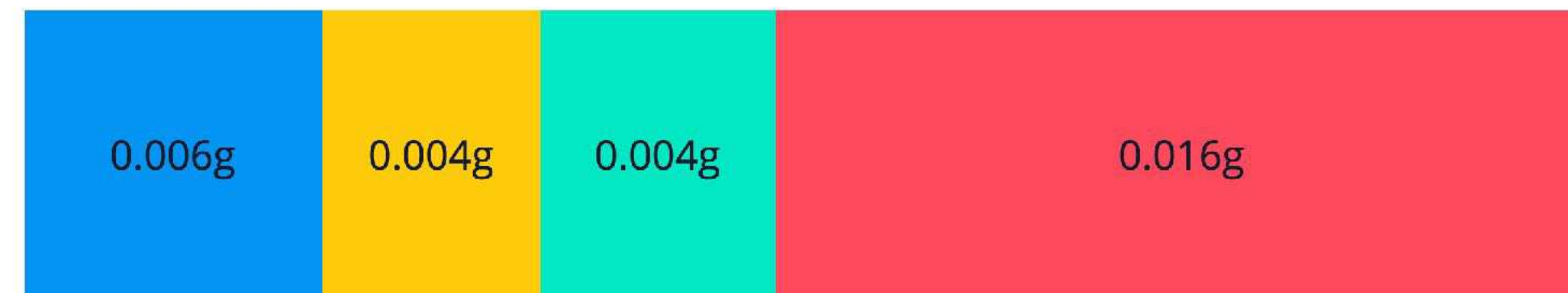
1s

Performance ⓘ

0.98

SEO ⓘ

1



Hardware production

Data center use

Network use

Consumer device use

Give Feedback

Report for: <https://nbadiola.com>

1 Page

Resource overview

- Image: 215.2 KiB
- Stylesheet: 96.5 KiB
- Script: 96.1 KiB
- Third-party: 44.8 KiB
- Font: 35.2 KiB
- Document: 15.5 KiB
- Other: 820 B
- Media: 0 B

585.9 KiB

488.3 KiB

390.6 KiB

293.0 KiB

195.3 KiB

97.7 KiB

0 B

Mon, 12 Dec

Fuente: Ecoping

Herramientas

Result of the green web check — nbadiola.com
is hosted green!



Congratulations! The website is hosted green.

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

Hosted by: [Ovh](#)

Is this your website?

Save this image or use the code to display this badge on your website, and show the world you are green!

Image



Code

```

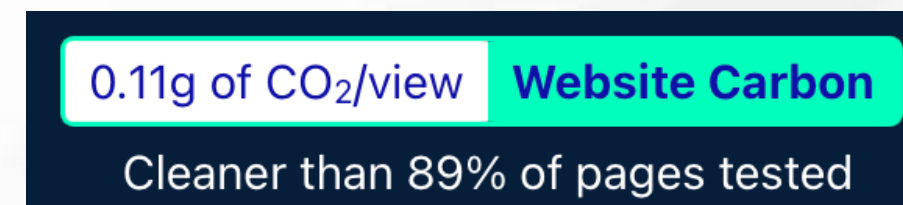
```

Fuente: The Green Web Foundation

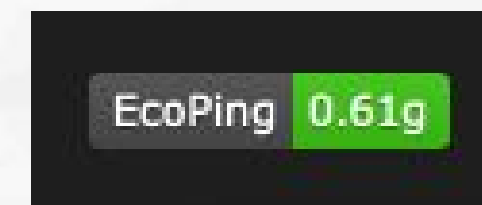
Herramientas

Sellos (badges) de sostenibilidad web

Website Carbon Calculator



Ecoping



The Green Web Foundation



APIs públicas

BBC Future

*The emissions from travel it took to report this story were 0kg CO₂. The digital emissions from this story are an estimated 1.2g to 3.6g CO₂ per page view. **Find out more about how we calculated this figure here.***

Ecosia

Certified B Corporation 

<https://bcorporation.net>

Vote Every Day. Vote B Corp. You cast your vote every day with the choices you make—what you buy, where you work and who you do business with.

Hipotesis 2

Google comienza a usar la sostenibilidad web como factor de posicionamiento

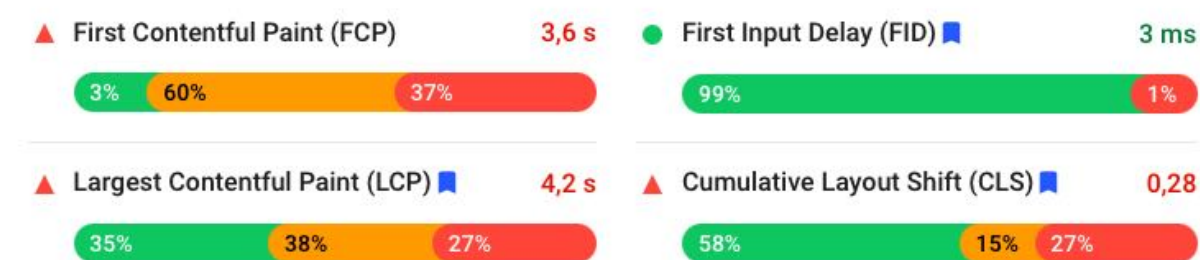
96

https://nbadiola.com/

▲ 0-49 ■ 50-89 ● 90-100 ⓘ

Datos de campo — El informe "Experiencia de Usuario de Chrome" no tiene suficientes datos a tiempo real sobre la velocidad de esta página.

Origin Summary — Los datos recogidos durante el anterior periodo de 28 días indican que, en conjunto, la experiencia de las páginas servidas desde este origen **no supera** la evaluación del informe **Métricas web principales**. Para ver sugerencias que se ajusten a cada página, analiza URLs de páginas concretas.



Datos de experimentos

● First Contentful Paint	0,7 s	● Time to Interactive	0,8 s
■ Speed Index	1,4 s	● Total Blocking Time	0 ms
● Largest Contentful Paint	1,0 s	● Cumulative Layout Shift	0,034

● Evita cargas útiles de red de gran tamaño — Tamaño total: 560 KiB

Si la carga útil de la red es muy grande, los usuarios consumen más datos móviles y las páginas tardan más en cargarse. [Más información](#)



Consider showing excerpts in your post lists (e.g. via the more tag), reducing the number of posts shown on a given page, breaking your long posts into multiple pages, or using a plugin to lazy-load comments.

URL	Tamaño de la transferencia
...10/crear-webs-respetuosas-privacidad.webp (nbadiola.com)	100,7 KiB
...05/como-hacer-web-sostenible-wordpress.webp (nbadiola.com)	71,9 KiB
...webfonts/fa-solid-900.woff2 (nbadiola.com)	61,3 KiB
...08/mejores-alternativas-google-analytics-wordpress.webp (nbadiola.com)	44,7 KiB
...css/dashicons.min.css?ver=5.7 (nbadiola.com)	36,1 KiB
...jquery/jquery.min.js?ver=3.5.1 (nbadiola.com)	35,5 KiB
...05/nahuai-badiola-desarrollador-web-wordpress.webp (nbadiola.com)	26,6 KiB
...v36/TK3IWkUHH....woff2 (fonts.gstatic.com)	17,7 KiB
...05/nahuai-badiola-desarrollo-web.webp (nbadiola.com)	17,1 KiB
...css/formsmain.min.css?ver=2.4.23 (nbadiola.com)	15,2 KiB

Google Core Web Vitals

Evita cargas útiles de gran tamaño



Peso de la página


Grupo de sostenibilidad web en la W3C


W3C COMMUNITY & BUSINESS GROUPS

Home / Sustainable Web Design Community Group / Participants


PARTICIPANTS IN THE SUSTAINABLE WEB DESIGN COMMUNITY GROUP


Chairs



ALEXANDER DAWSON
Individual CLA commitment



TIM FRICK
Mightybytes

Participants


Amy Guy
Digital Bazaar


Jean-Baptiste Audras
Individual CLA commitment but affiliated with WordPress FR


Michelle Barker
Individual CLA commitment but affiliated with Ada Mode


Nahuai Badiola
Individual CLA commitment

Get involved

Anyone may join this Community Group. All participants in this group have signed the W3C Community Contributor License Agreement.

JOIN THIS GROUP

LOG IN TO NOMINATE CHAIRS

Introduction to Web Sustainability

Draft Community Group Report 11 April 2024

Latest published version:

<https://w3c.github.io/sustyweb/intro.html>

Latest editor's draft:

<https://w3c.github.io/sustyweb/intro.html>

Editors:

[Alexander Dawson](#)

[Tim Frick](#) (Mightybytes)

Feedback:




[GitHub w3c/sustyweb](#) (pull requests, new issue, open issues)

Copyright © 2024 the Contributors to the Introduction to Web Sustainability Specification, published by the [Sustainable Web Design Community Group](#) under the [W3C Community Contributor License Agreement \(CLA\)](#). A human-readable [summary](#) is available.

UNOFEI

<https://www.w3.org/community/sustyweb/>

3 Factores clave

- ▶ Cantidad de información 
- ▶ Fuente de energía 
- ▶ Accesibilidad de información 

El tamaño/peso importa



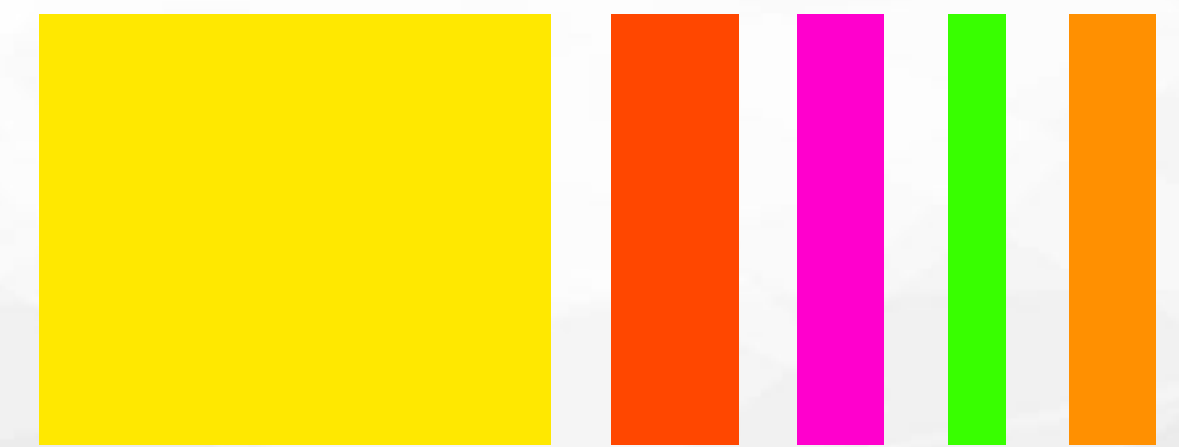
IMÁGENES

1.000kB



VÍDEO

500kB



CÓDIGO

500kB

Imágenes

- ▶ No siempre necesitas una imagen
- ▶ **Optimiza** (Redimensiona/Comprime/WebP o AVIF)
- ▶ Usa SVGs cuando sea posible
- ▶ Usa «Lazy-loading» (>WordPress 5.5)
- ▶ Utiliza el blanco y negro (blur....)

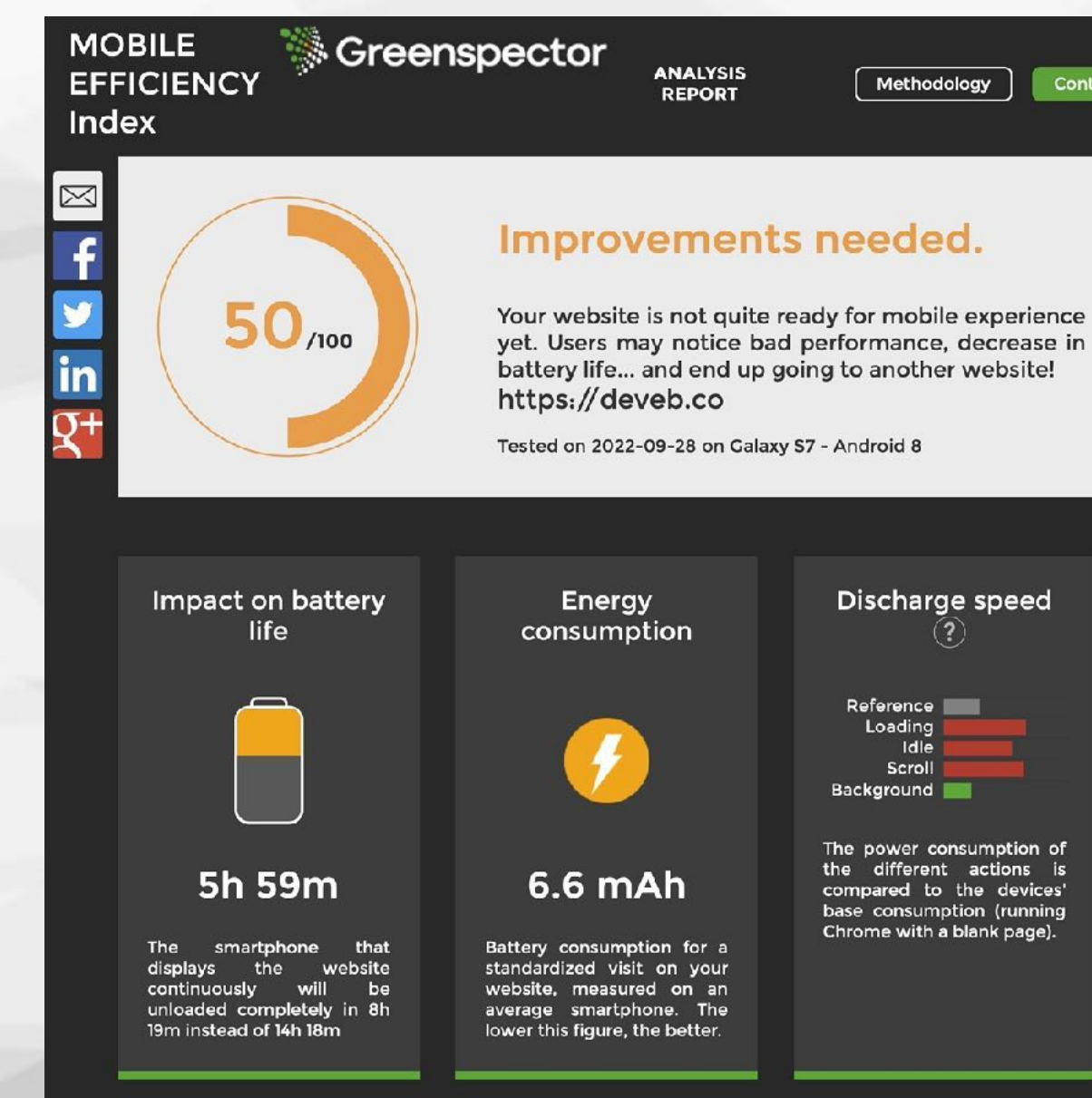
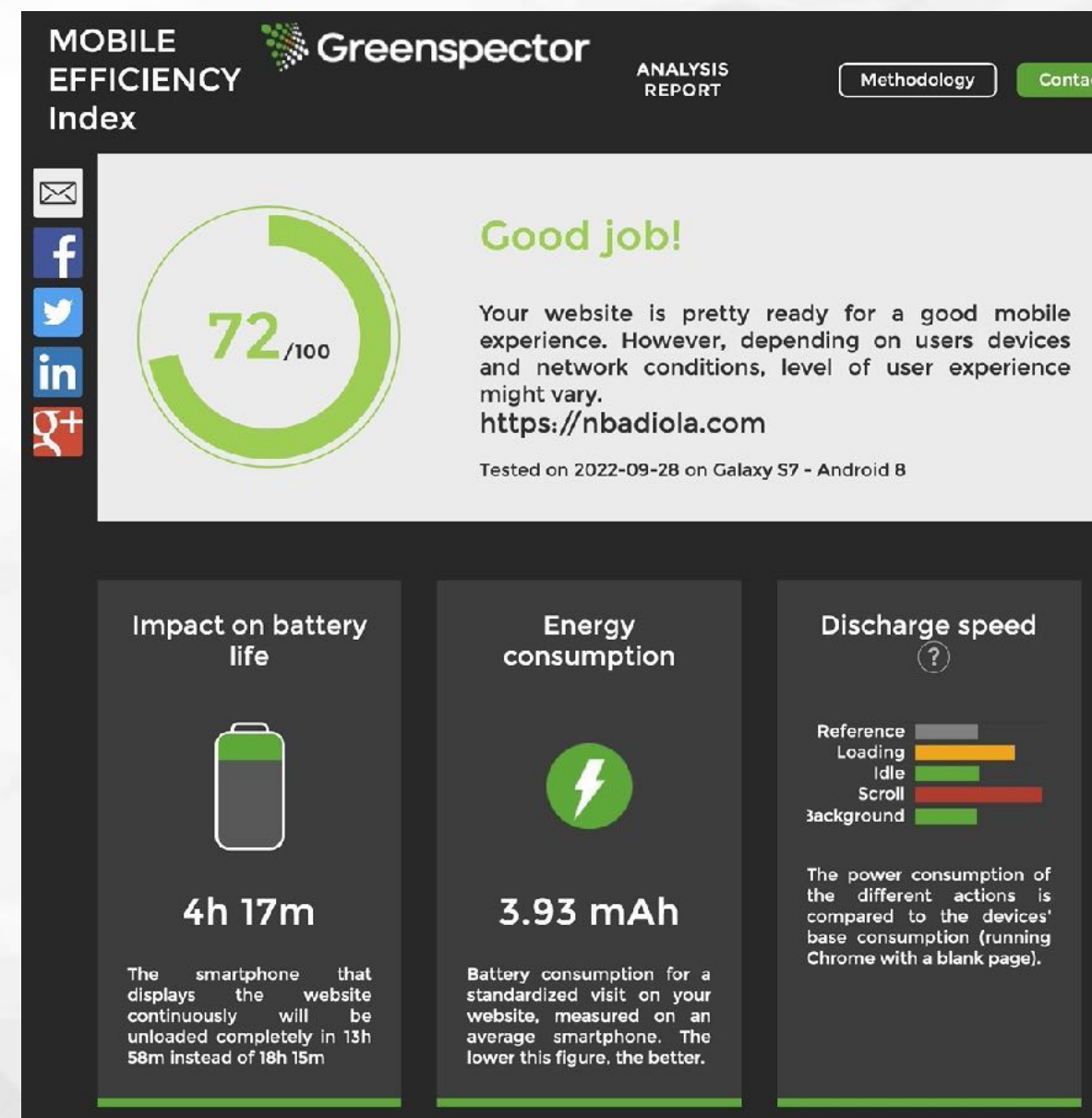
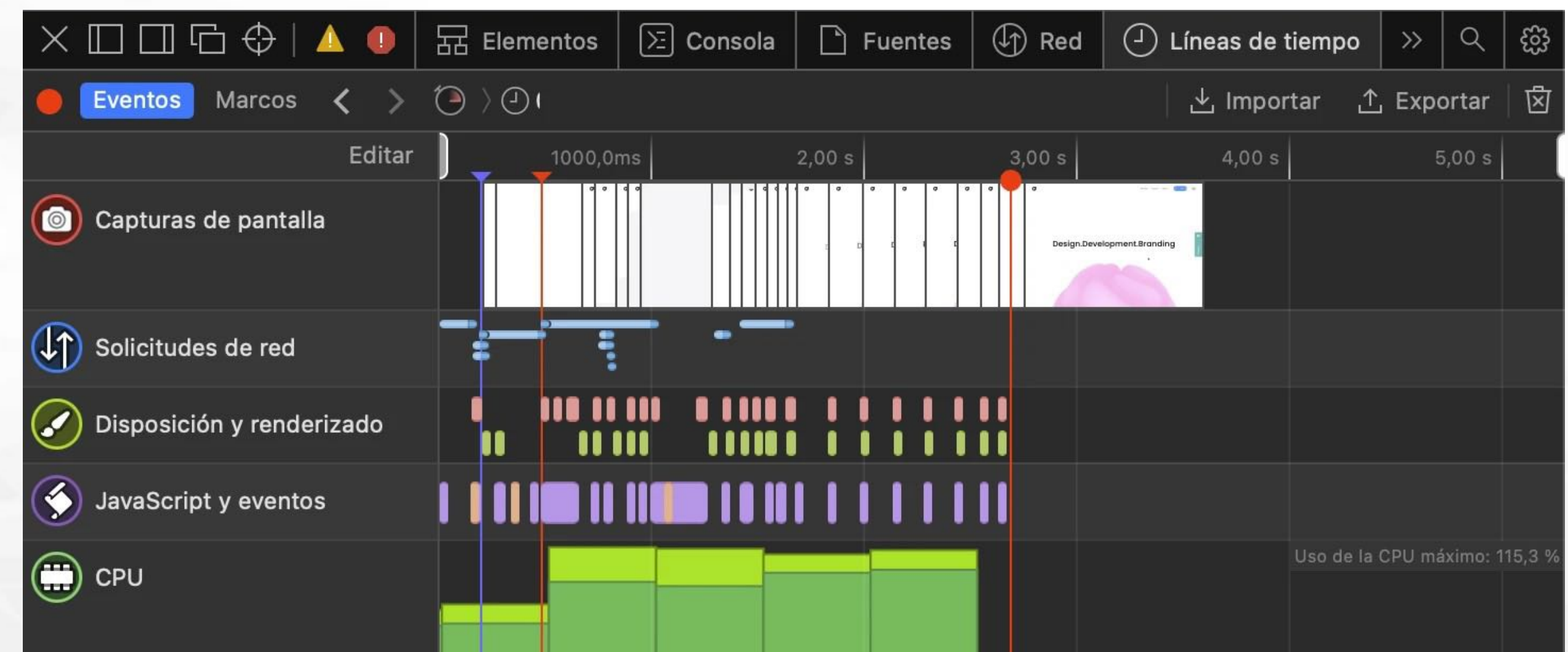
Vídeos

- ▶ No siempre necesitas un vídeo
- ▶ Casi nunca necesitas un vídeo-background
- ▶ Elimina el auto-play
- ▶ Optimiza (Resolución/Codec)

Código

- ▶ **Escribe código limpio**
- ▶ **Usa el mínimo JavaScript posible**
- ▶ **Eliminar trackers innecesarios**
- ▶ **Minimiza CSS y JS**
- ▶ **Contempla crear una PWA**

Herramientas



Fuente: Greenspector

Fuentes

- ▶ **Usa fuentes del sistema / Modern Font Stacks**
- ▶ **Reduce las variaciones**
- ▶ **Carga un subset y en formato WOFF2**
- ▶ **Usa fuentes variables**

Experiencia de usuario (UX)

- ▶ **Contenido/apartados esenciales**
- ▶ **Contenido fácil de encontrar (SEO)**
- ▶ **Contenido escaneable**
- ▶ **Reduce clicks**

Hosting

- ▶ **Elige un hosting que utilice energías renovables**
- ▶ **Hostings con servidores en Google Cloud, OVH...**
- ▶ **Hostings especializados (Greenhosting....)**

Hosting

Grados de sostenibilidad

- ▶ **Obtienen energía renovable directamente**
- ▶ **Contribuyen a creación infraestructura**
- ▶ **Comprando energía renovable**
- ▶ **Comprando créditos**
- ▶ **Carbon offset**

Tecnología

- ▶ **Hosting**
 - ▶ **Última versión PHP y MySQL/MariaDB**
 - ▶ **Compresión GZIP**
 - ▶ **Caché de servidor**
- ▶ **Caché (plugin)**
- ▶ **Usa una CDN (Content Delivery Network)**

Ejemplos



<https://branch.climateaction.tech/>

Ejemplos

The screenshot displays the Branch Magazine website with a grid intensity view overlay. The website header includes the 'branch' logo, navigation links for 'ISSUES', 'ABOUT', and 'DONATE', and the 'Climate Action .tech' logo. The main content area features the title 'Branch Magazine: A Just and Sustainable Internet for All' and the issue information 'Issue 8: Finding Beauty in the Imperfect' and 'Spring 2024'. A magazine cover thumbnail is visible at the bottom. The grid intensity view overlay, highlighted with a red border, shows a dropdown menu with options 'LIVE', 'LOW', 'MODERATE', and 'HIGH'. The 'LIVE' option is currently selected. A vertical label 'MODERATE GRID INTENSITY' is positioned to the right of the dropdown menu.

branch

ISSUES ABOUT DONATE

Climate Action .tech

? GRID INTENSITY VIEW: LIVE ^

Branch Magazine: A Just and Sustainable Internet for All

Issue 8: Finding Beauty in the Imperfect

Spring 2024

ISSUE 08 **branch**
A JUST AND SUSTAINABLE INTERNET FOR ALL SPRING 2024

LIVE
LOW
MODERATE
HIGH

MODERATE GRID INTENSITY

<https://branch.climateaction.tech/>

Ejemplos

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline

🌐 [About](#) | [Low-tech Solutions](#) | [High-tech Problems](#) | [Obsolete Technology](#) | [Offline Read](#)

How to Escape From the Iron Age?

We cannot lower carbon emissions if we keep producing steel with fossil fuels.

March 18, 2024



573.54KB

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline

🌐 [About](#) | [Low-tech Solutions](#) | [High-tech Problems](#) | [Obsolete Technology](#) | [Offline Reading](#) | [Archive](#) | [Donate](#) | [NTM](#) ✉ 📢

📄 98%

Power

This website runs on a solar powered server located in Barcelona, and will go off-line during longer periods of bad weather. This page shows live data relating to power supply, power demand, and energy storage.

Translations [fr](#) [de](#) [nl](#) [es](#) [it](#) [pt](#) [pl](#)

Power supply

This is a forecast for the coming days, updated daily:

TODAY

☔ rain

TOMORROW

☁ partly cloudy day

61.77KB

↑

Datos para caerse de culo

- ▶ Smush -> ahorra emisiones anuales de 4.400 coches
- ▶ Eliminar 20kB de JS -> reduce 59 toneladas de CO₂ al mes
- ▶ Bloquear anuncios USA Today -> 500kB en lugar de 5MB -> reduce 7.5 toneladas de CO₂ al mes
- ▶ 60MB > 12MB > 9MB > 3,3MB (presentación)

Los beneficios

Efectos secundarios de una web sostenible

- ▶ Mejor SEO
- ▶ Mejora experiencia de usuario
- ▶ Mejora conversión
- ▶ Mejora accesibilidad
- ▶ Reduce coste del hosting

Google feliz 🤖 🎉

Cliente feliz 🎉

El mensaje

Hay muchos motivos para

crear webs (y apps)

más sostenibles

(y ninguno de ellos es malo)

3 pilares de la sostenibilidad

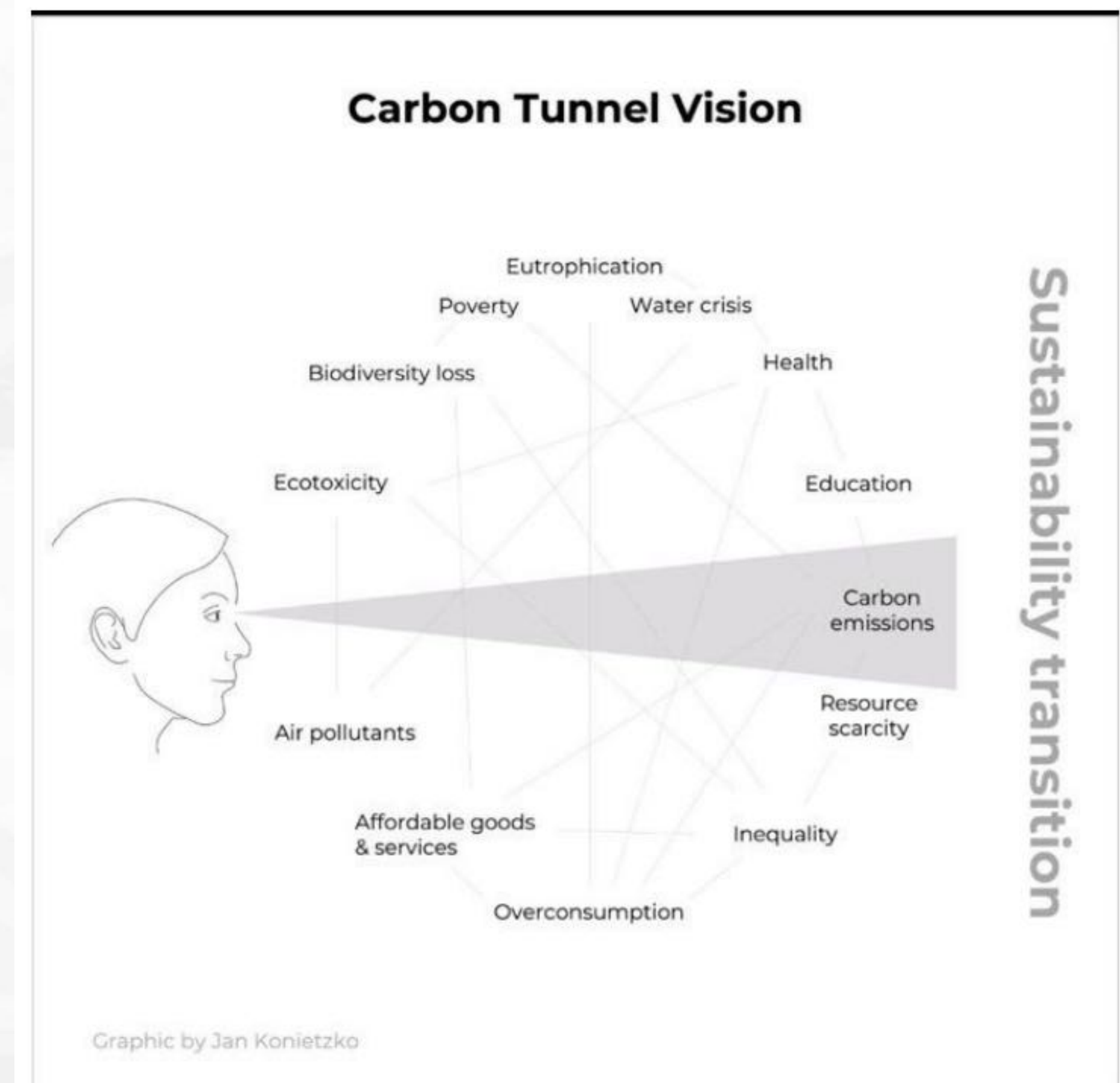
 Medioambiental

 Social

 Económica

3 pilares de la sostenibilidad

Evitar la visión de túnel de carbono



El equipo de sostenibilidad en WordPress

Algunas de las cosas que se están hablando ahora

- ▶ Dibujando hoja de ruta
- ▶ Plugin para mostrar métricas del impacto medioambiental de la web (CO2)
- ▶ Guía para hacer los eventos WordPress más sostenibles

Herramientas/Recursos

▸ Herramientas Cálculo CO2 + badges

- <https://www.websitecarbon.com>
- <https://ecoping.earth>
- <https://digitalbeacon.co>
- <https://ecograder.com>
- <https://www.thegreenwebfoundation.org/green-web-check/>

- <https://aremythirdpartiesgreen.com/>
- <https://greenspector.com/en/home/>

▸ Recursos

- <https://www.sustainablewebmanifesto.com/>
- <https://httparchive.org/reports/page-weight/>
- <https://sustainableux.com>
- <https://designsustainably.eu>
- <https://www.wholegraindigital.com/curiously-green/>
- <https://branch.climateaction.tech>
- <https://globalwarning.blog>

- <https://sustainablewebdesign.org/>
- <https://fontdrop.info>
- <https://whatdoesmysitecost.com>
- <https://github.com/system-fonts/modern-font-stacks>
- <https://shortpixel.com>
- <https://martatorre.dev/proceso-conseguir-certificado-green-hosting/>
- <https://www.mightybytes.com/blog/where-do-digital-emissions-come-from/>

Herramientas/Recursos

▶ Libros

- ▶ [Sustainable Web Design - Tom Greenwood](#)
- ▶ [World Waste World - Gerry McGovern](#)
- ▶ [Designing for Sustainability - Tim Frick](#)

▶ [WordPress.tv](#)

- ▶ <https://wordpress.tv/2017/06/22/tom-greenwood-zero-carbon-wordpress/>
- ▶ <https://wordpress.tv/2019/08/27/jack-lenox-how-better-performing-websites-can-help-save-the-planet-2/>
- ▶ <https://wordpress.tv/2019/09/22/roberto-vazquez-desarrollo-sostenible/>
- ▶ <https://wordpress.tv/2020/03/03/david-vina-desarrollo-sostenible-o-como-ayudar-a-salvar-el-mundo-gustandole-mas-a-google/>
- ▶ <https://wordpress.tv/2020/05/09/nahuai-badiola-consejos-para-hacer-tus-webs-mas-sostenibles/>

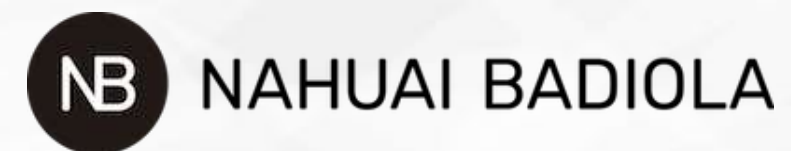
Herramientas/Recursos

- ▶ **Iniciativa de sostenibilidad de WordPress**
 - ▶ <https://make.wordpress.org/project/2022/11/01/sustainability-channel-what-should-we-do/>
 - ▶ <https://oursustainablewp.org/>
 - ▶ <https://wordpress.slack.com/archives/C03JNV77Y57> (canal de sostenibilidad WP en Slack)
- ▶ **El grupo de sostenibilidad web de la W3C**
 - ▶ <https://www.w3.org/community/sustyweb/>
 - ▶ <https://w3c.github.io/sustyweb/> (séptimo borrador de las recomendaciones)
 - ▶ <https://w3c.github.io/sustyweb/glance.html> (versión abreviada)

Sobre mí

Desarrollador WordPress motivado de la vida

nbadiola.com



codigogenesis.com



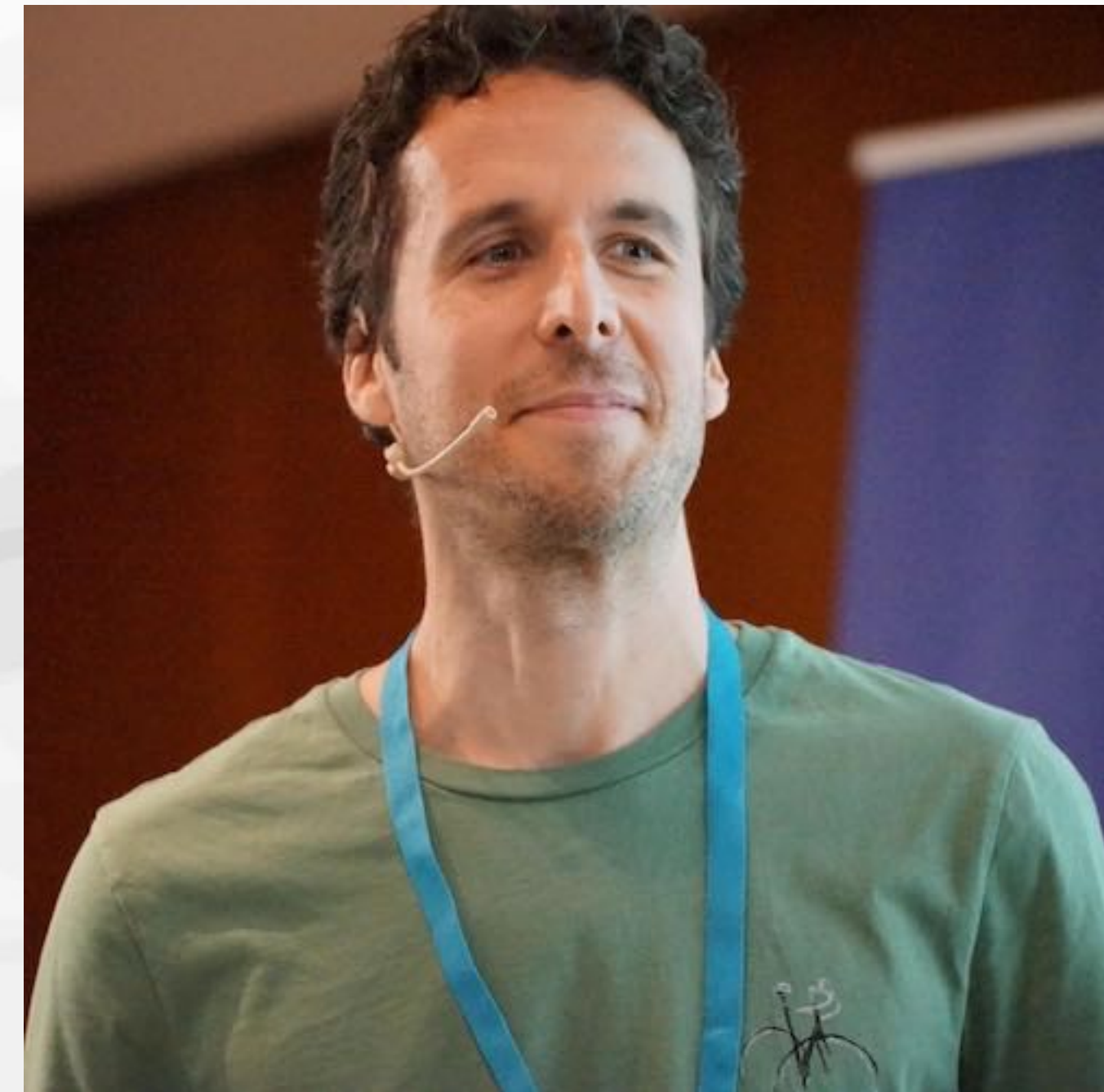
freelandev.com



osompress.com



sustainwp.com



mastodon.social/@nahuai



Muchas gracias

