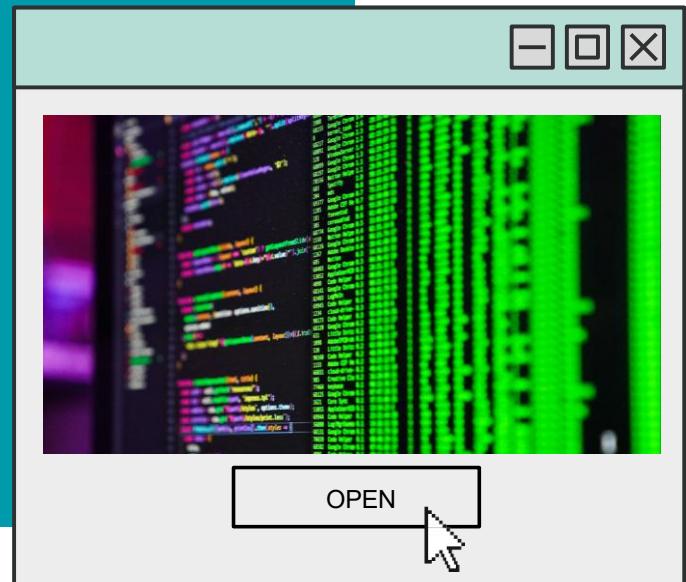


0110 0101 0100 1011 0111
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GREENWEB SHOWCASE WIENIT

MARTIN MICHALITSCH



Wir investieren in die klimaneutrale Zukunft



WIENER STADTWERKE GRUPPE

WIENER LINIEN | WIEN ENERGIE | WIENER NETZE | WIENER LOKALBAHNEN | WIPARK | WIEN IT | BESTATTUNG WIEN | FRIEDHÖFE WIEN | IMMOH! | GWSG

Vision 2040

Wir sind als Wiener Stadtwerke-Gruppe im Jahr 2040
internationales Vorbild der Klimaneutralität.





BE LIKE WATER

Wir haben angefangen:

- wo es einfach ist.
- wo motivierte Kollegen Anpacken.
- wo es leicht technisch umsetzbar ist.
- Frühe Erfolge holen, damit man es strategisch verkaufen kann.
- Und steter Tropfen höhlt den Stein.

PHASE 1 SUCCESS STORIES

ERSTE SCHRITTE RICHTUNG GREENWEB



GREENWEB SUCCESS STORIES

Entwickeln

GreenWeb Optimierung

Datentransfer (MB) pro Aufruf von
www.wienit.at

74% weniger Emissionen
bei gleicher Leistung

3,4 MB

0,9 MB

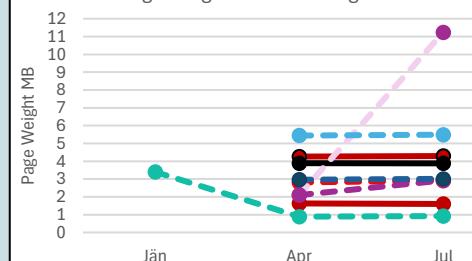
22.01.2025

09.04.2025

Messen

CO2 Benchmarking

Ausgewählte WSTW-Webauftritte
Page Weight MB nach Ecograder



Kommunizieren

Badges



0.3g of CO₂/view Website Carbon
Cleaner than 99% of pages tested

SUCCESS STORY 1 – CMS OPTIMIERUNG

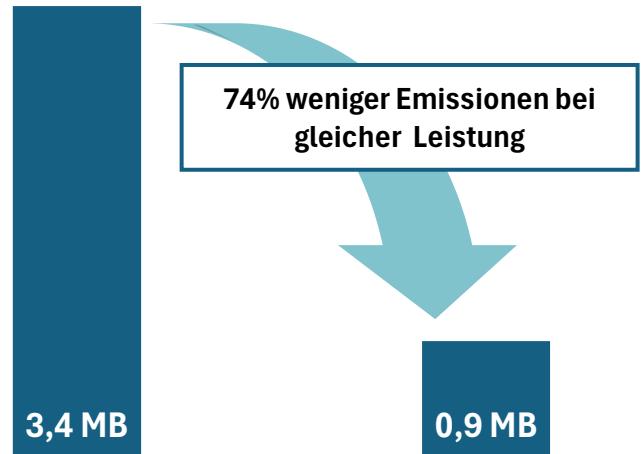


<denis yashin>

„Ein wesentlicher Part war die Entwicklung eines neuen Rendering-Mechanismus, der alle Bilder serverseitig in das WebP-Format umwandelt. Dadurch konnten wir das Datenvolumen pro Seite deutlich reduzieren. Schlankere Seiten laden schneller und verbrauchen weniger Energie – das ist nicht nur effizient, sondern auch nachhaltiger.“



Datentransfer (MB) pro Aufruf von
www.wienit.at



22.01.2025

09.04.2025

PHASE 2 TOOLBOX ENTWICKLUNG

STRATEGISCH RICHTUNG GREENWEB



GREENWEB ZIELGRUPPEN



Ich will auf meine Arbeit stolz sein und will zum Klimaschutz beitragen!

Ella
Dev Web-Team, Early Adopter



Ich will eine geile Website, die unsere Kund*innen abholt.

Carl
CMS-Redakteur



Wir positionieren uns als Nachhaltigkeitskonzern! Und das will ich meinen Kund*innen zeigen.

Lisa
Kommunikation Lead

Wir arbeiten zusammen auf einen KPI hin: Datentransfer (MB)

- GreenWeb Blueprint
- CO₂ Benchmarking

Mitarbeiter*innen-Identifikation

In der Wiener Stadtwerke-Gruppe schaffen wir gemeinsam die Klimawende!

Employer Branding

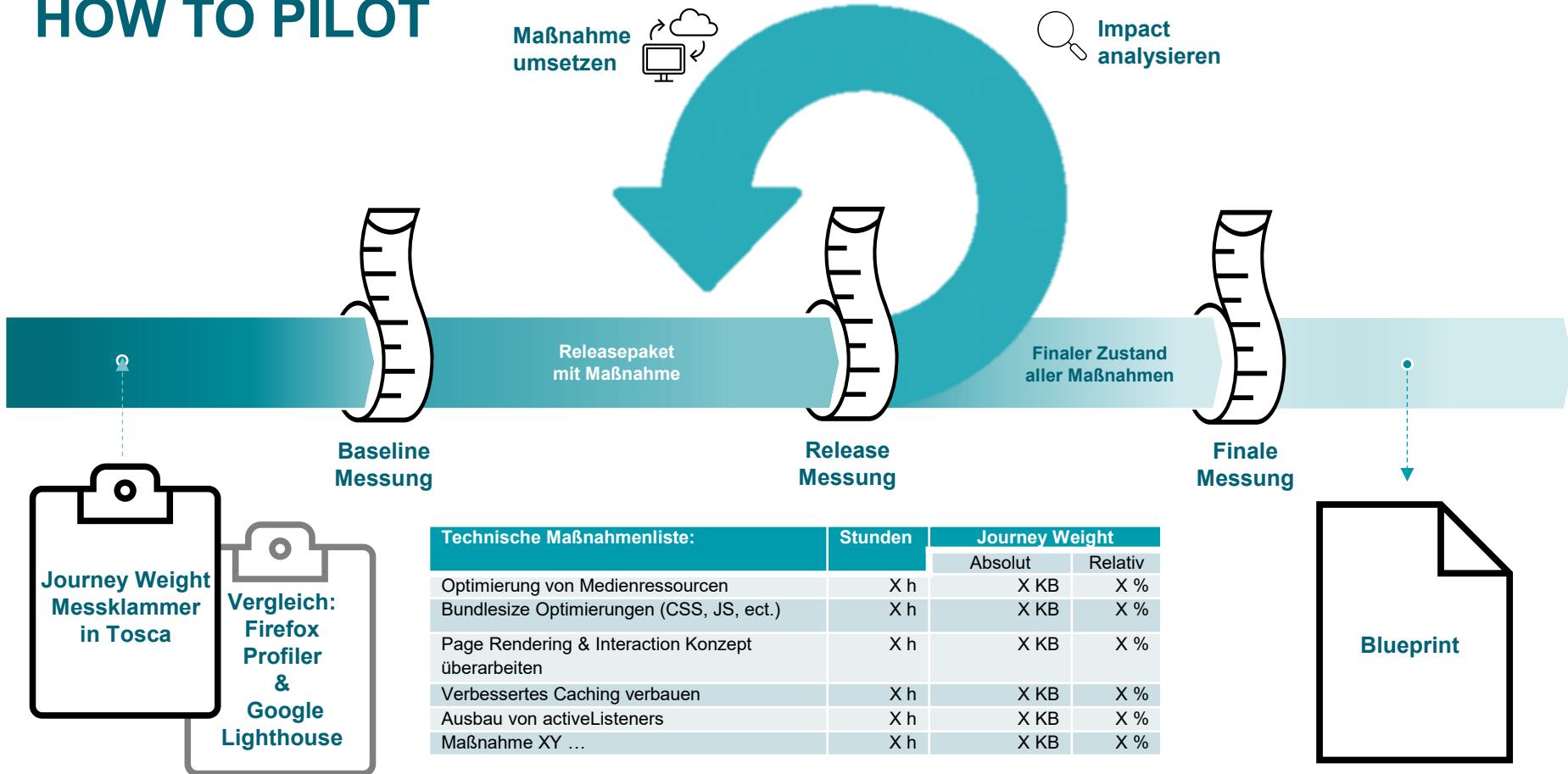
- CO₂ Benchmark Web Reporting
- Website Carbon Badge

GREENWEB OPTIMIERUNG WIENMOBIL WEB-APP

PILOTIERUNG & BLUEPRINT

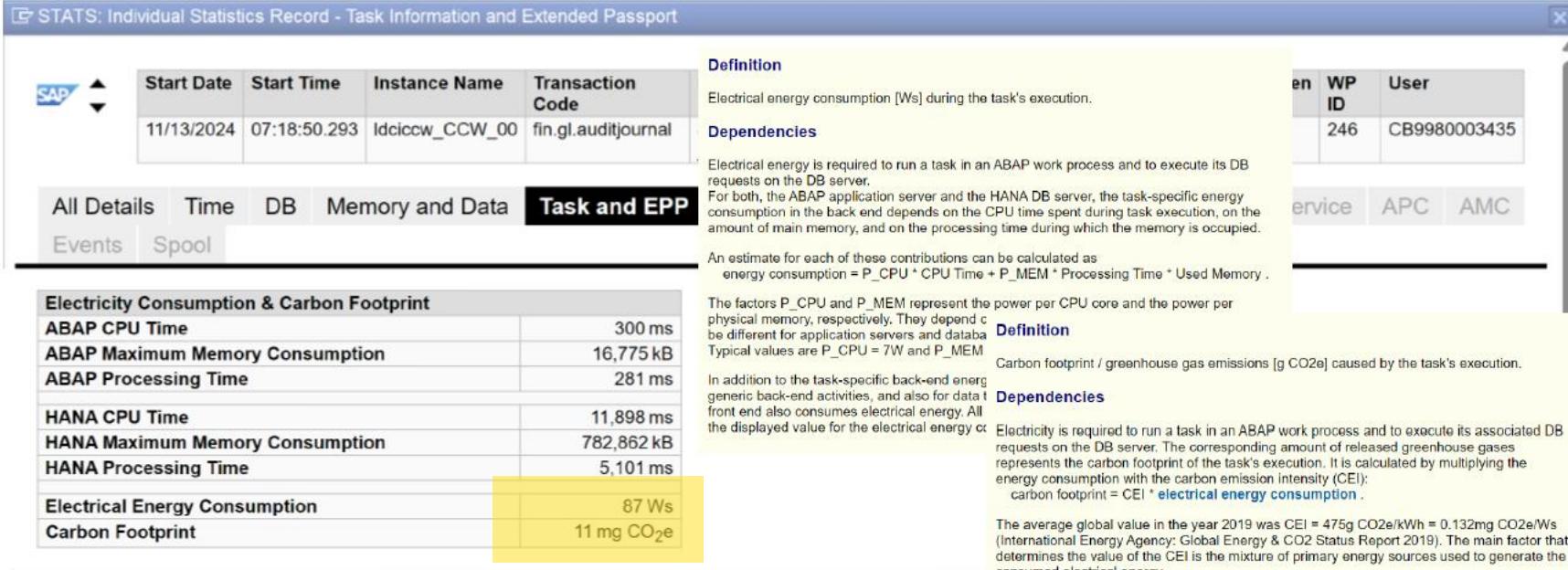


HOW TO PILOT



SHOWCASE FÜR ANDERE TECHNOLOGIEN

Details of statistics records in **STATS** show electrical energy consumption and carbon footprint



The screenshot shows the SAP Task and EPP interface for a specific task. The task details include:

- Start Date:** 11/13/2024
- Start Time:** 07:18:50.293
- Instance Name:** ldciccw_CCW_00
- Transaction Code:** fin.gl.auditjournal

Definition: Electrical energy consumption [Ws] during the task's execution.

Dependencies: Electrical energy is required to run a task in an ABAP work process and to execute its DB requests on the DB server. For both, the ABAP application server and the HANA DB server, the task-specific energy consumption in the back end depends on the CPU time spent during task execution, on the amount of main memory, and on the processing time during which the memory is occupied.

An estimate for each of these contributions can be calculated as $\text{energy consumption} = P_{\text{CPU}} * \text{CPU Time} + P_{\text{MEM}} * \text{Processing Time} + \text{Used Memory}$.

Electricity Consumption & Carbon Footprint:

ABAP CPU Time	300 ms
ABAP Maximum Memory Consumption	16,775 kB
ABAP Processing Time	281 ms
HANA CPU Time	11,898 ms
HANA Maximum Memory Consumption	782,862 kB
HANA Processing Time	5,101 ms
Electrical Energy Consumption	87 Ws
Carbon Footprint	11 mg CO ₂ e

Definition: The factors P_{CPU} and P_{MEM} represent the power per CPU core and the power per physical memory, respectively. They depend on the hardware configuration of the system. Typical values are $P_{\text{CPU}} = 7\text{W}$ and $P_{\text{MEM}} = 0.01\text{W/kB}$.

In addition to the task-specific back-end energy consumption, generic back-end activities, and also for data transfers across the network, the front end also consumes electrical energy. All these additional contributions are not included in the displayed value for the electrical energy consumption.

Dependencies: Electricity is required to run a task in an ABAP work process and to execute its associated DB requests on the DB server. The corresponding amount of released greenhouse gases represents the carbon footprint of the task's execution. It is calculated by multiplying the energy consumption with the carbon emission intensity (CEI): $\text{carbon footprint} = \text{CEI} * \text{electrical energy consumption}$.

The average global value in the year 2019 was CEI = 475g CO₂e/kWh = 0.132mg CO₂e/Ws (International Energy Agency: Global Energy & CO₂ Status Report 2019). The main factor that determines the value of the CEI is the mixture of primary energy sources used to generate the consumed electrical energy.

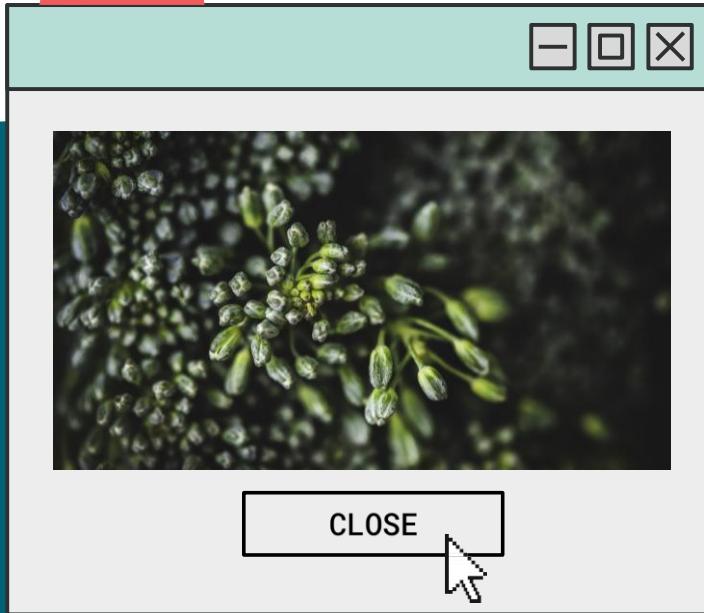
In addition to the task-specific back-end energy consumption further energy is required for generic back-end activities, and also for data transfers across the network. Processing on the front end also consumes electrical energy. All these additional contributions are not included in the displayed value for the electrical energy consumption. They may significantly increase a task's carbon footprint.

Manfred Mensch, Detlef Thoms

<https://open.hpi.de/courses/cleanitsap2025>



**LET'S MAKE IT GREEN!
LET'S WORK ON PROJECTS TOGETHER!**



VIELEN DANK!