



GDPR & Sustainability

Privacy and Data Protection for
Environmental Sustainability

Importance of Data

- Data represents the most valuable assets for companies
 - Machine Learning and Prediction (Business Intelligence)
 - Intellectual property
 - Patents
 - Sensible Data
- As asset, data must be protected
 - GDPR (EU)
 - PCI-DSS (Digital Payment)



Importance of Data

- Data Processing and Storage
 - Data center
 - Replication (Business continuity)
- Power Consumption
 - Coal Derived Power
 - Data center consumes 20/50 **MEGA Watt** in a year
 - Same energy amount is used to power **37000 buildings** in the same period
- Study case
 - Italian Supercomputer Leonardo (Bologna, Italy)
 - estimated power consumption = **180000 people**



EU GDPR

- General Data Protection Regulation
 - Protect sensible information of user
 - Privacy protection
- Sensitive Data (art. 9 comma 1)
 - “Processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person’s sex life or sexual orientation shall be prohibited.”



EU GDPR

- Main Principles
 - Data Retention (art. 5)
 - User's awareness (art. 12, art. 13)
 - Data control (art.15, art.16, art. 17)
 - User's data and privacy must be protected (art. 32, art. 33)



COLLECT ONLY DATA
THAT
ARE REALLY NEEDED



Data Sustainability

- COLLECT ONLY DATA THAT ARE REALLY NEEDED (from GDPR)
 - Optimize data storage
 - Minimize data collected
 - Minimize power usage
 - Respect environment
 - Respect user's privacy
 - Improve performance
 - Better user experience



Data Sustainability

- Study case
 - Compliance website for GDPR's countries
 - US version: **5.2 MB**
 - EU version: **500 KB**
 - Effective: - 90% of data
 - Better response and user experience





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Speaking as a user — THIS 500 KB site is the web I want.

Speaking as an architect of the web — I keep thinking that we've built a platform that serves, in this example: 9% content, 91% ads and tracking.

1/6

([@w3ctag](#))



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Because of #GDPR, USA Today decided to run a separate version of their website for EU users, which has all the tracking scripts and ads removed. The site seemed very fast, so I did a performance audit. How fast the internet could be without all the junk! 😞

5.2MB → 500KB

Data Sustainability

- Final Considerations
 - Better under user and environmental point of view
 - “For a site like USA Today, it looks like running the ‘GDPR-lite’ version as the default would represent CO2 emissions savings equivalent to an entire European person’s annual carbon footprint, each month.”
 - EU Compliance

References

- <https://gdpr-info.eu/>
- <https://www.mightybytes.com/blog/is-gdpr-good-for-the-environment/>
- <https://www.hpc.cineca.it/hardware/leonardo>
- <https://www.oracle.com/it/big-data/what-is-big-data/>



Thank you for the attention

