

Sustainability

ENCODE, October 2022

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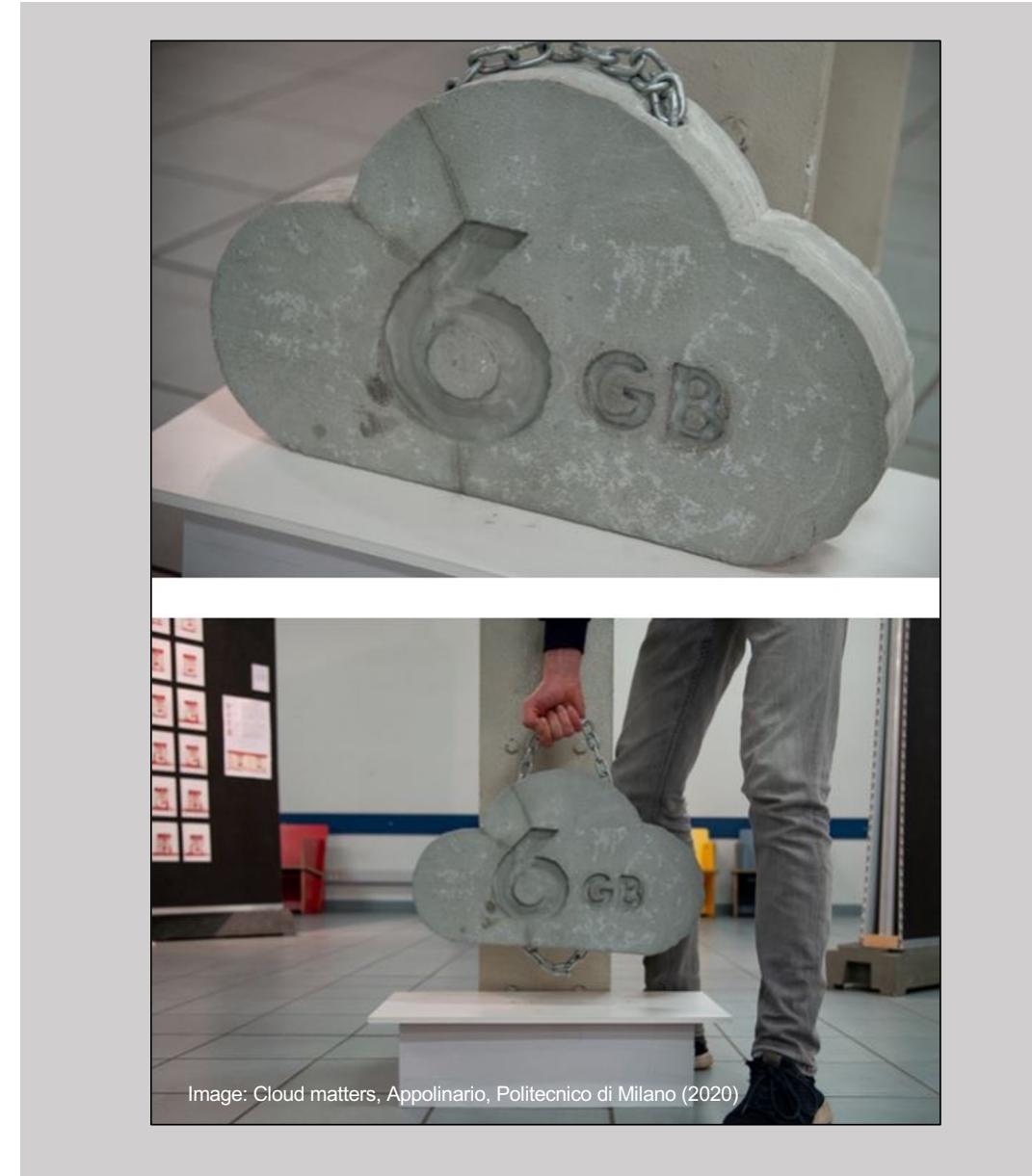


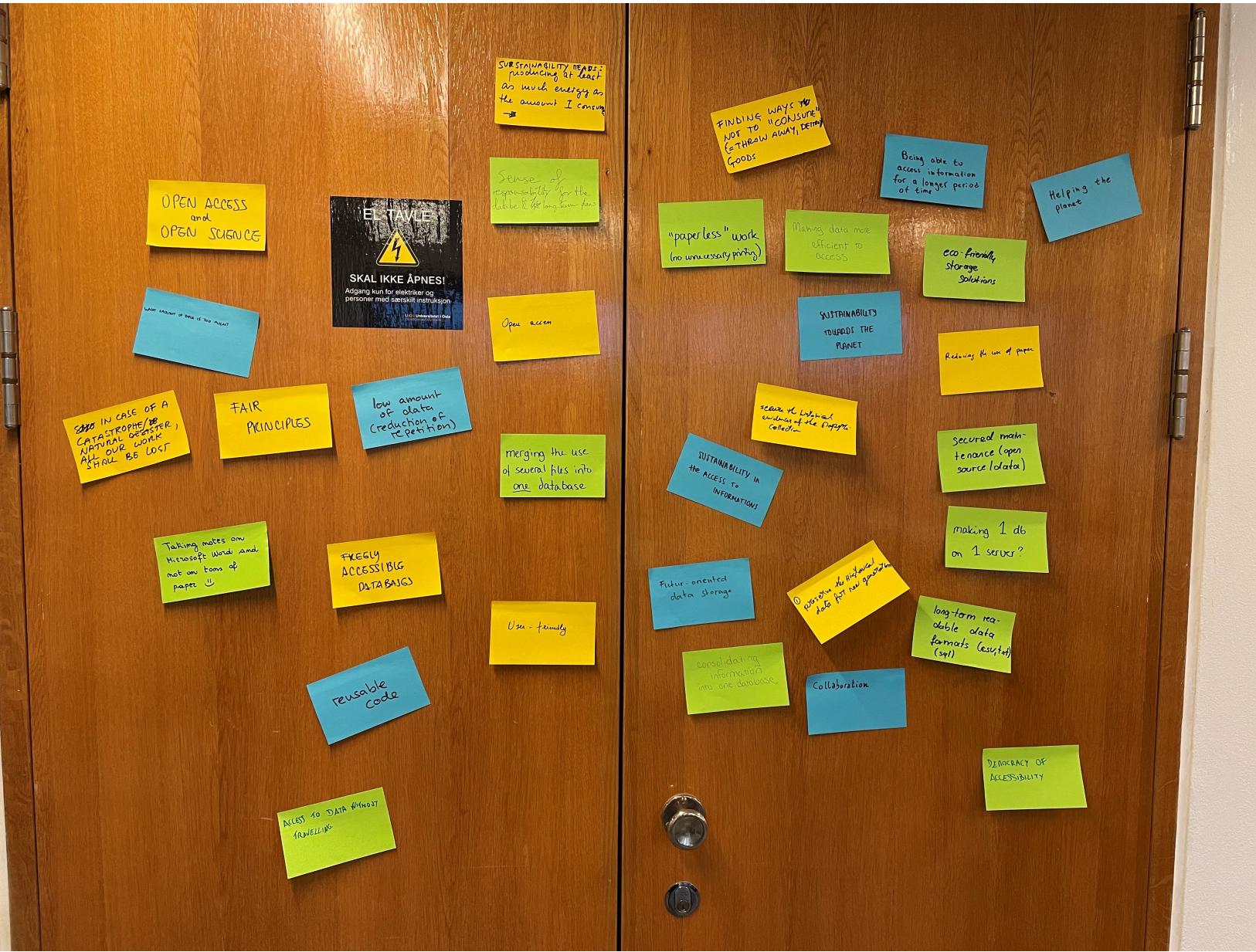
Image: Cloud matters, Appolinario, Politecnico di Milano (2020)

A warm-up task

Write 3-4 post-it,
on each of them, write one word/one sentence
connecting **your** view on sustainability and
the work **you** have done during these days.

When done, put them on this door □







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Sustainable Digital Scholarship

Keeping Oxford's research alive

About ▾ What the SDS Service offers ▾ Why Digital Sustainability matters FAQs Terms of Use

Academic research projects face particular challenges to their digital sustainability.

Funding ends, technologies change or become obsolete, and researchers move on to new projects, **leaving behind research** that spans many disciplines in Oxford, across the University's academic divisions and its gardens, libraries and museums. **Research continues** to be used, added to, and adapted long after the initial project has ended. This "life's work" provides a vital resource for academic communities around the world, and also contributes to future research projects.

- It is important that research data and assets be:
- **Live**, ready to be continuously updated. Scholars continue to make new findings, which they want to make available and enable collaboration with other researchers.
- **Open**, available to access by researchers from institutions outside Oxford and across the world. In many cases, these are also important cultural heritage collections, used by broad communities with audiences that go well beyond the research environment.
- **Discoverable**, and ready to be queried in many ways. This provides the catalyst for future research projects and opens up new opportunities for collaboration.

Digital sustainability con.

*[there is a] tension between different temporalities at stake: between the long-term needs of data preservation and maintenance on the one side, and the paradoxically **short life cycles of the data formats, platforms and infrastructures** on the other side*

(Barats et al., 2020, 7)

Barats, C., Schafer, V., & Fickers, A. (2020). Fading Away... The challenge of sustainability in digital studies. *Digital Humanities Quarterly*, 014(3).
<http://digitalhumanities.org:8081/dhq/vol/14/3/000484/000484.html>

Sustainability – CALL DHNB 2023

The 7th Digital Humanities in the Nordic and Baltic Countries Conference (DHNB2023)

<https://dhnb.eu/conferences/dhnb2023/call-for-submissions/>

It is online! Deadline x an abstract is 21.10

What responsibilities do we have as the world around us burns, dries, drowns, and changes before our eyes, as species go extinct and ways of life come to an end? How do **DH projects** and **practices** depend on unsustainable systems and mindsets?



What about **environmental** sustainability of digital resources?

Sustainability



SUSTAINABILITY LAB

home about projects people musings events

Circular Energy

Circular Energy for a Sustainable Circular Economy is a thematic research group (2021 - 2023) funded by [UiO:Energy](#). It aims to contribute to new knowledge about social and legal aspects of sustainable energy solutions in relation to the expanding role of digital products and services in our economy. The research group will explore digitalisation in the context of the shift to Circular Economy (CE), with a particular focus on design, maintenance, and repair as energy conservation strategies and the regulation of products for sustainability.

Rebound effects

Self-driving cars: sharing, security, elderly, people with disabilities

Children send to school, send the car home, or let it drive around the city until the workday is over, work during a ride = more use of cars and electricity/gasoline

App for power spot price:

Information about the price increase the usage of power and not LESS

Coroama, J. C., & Mattern, F. (2019). Digital Rebound—Why Digitalization Will not Redeem us our Environmental Sins. *Proceedings of the 6th International Conference on ICT for Sustainability (ICT4S 2019)*, 2382, 31. <https://www.research-collection.ethz.ch/handle/20.500.11850/387584>

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Images: tripadvisor



Image: tesla / Fortum

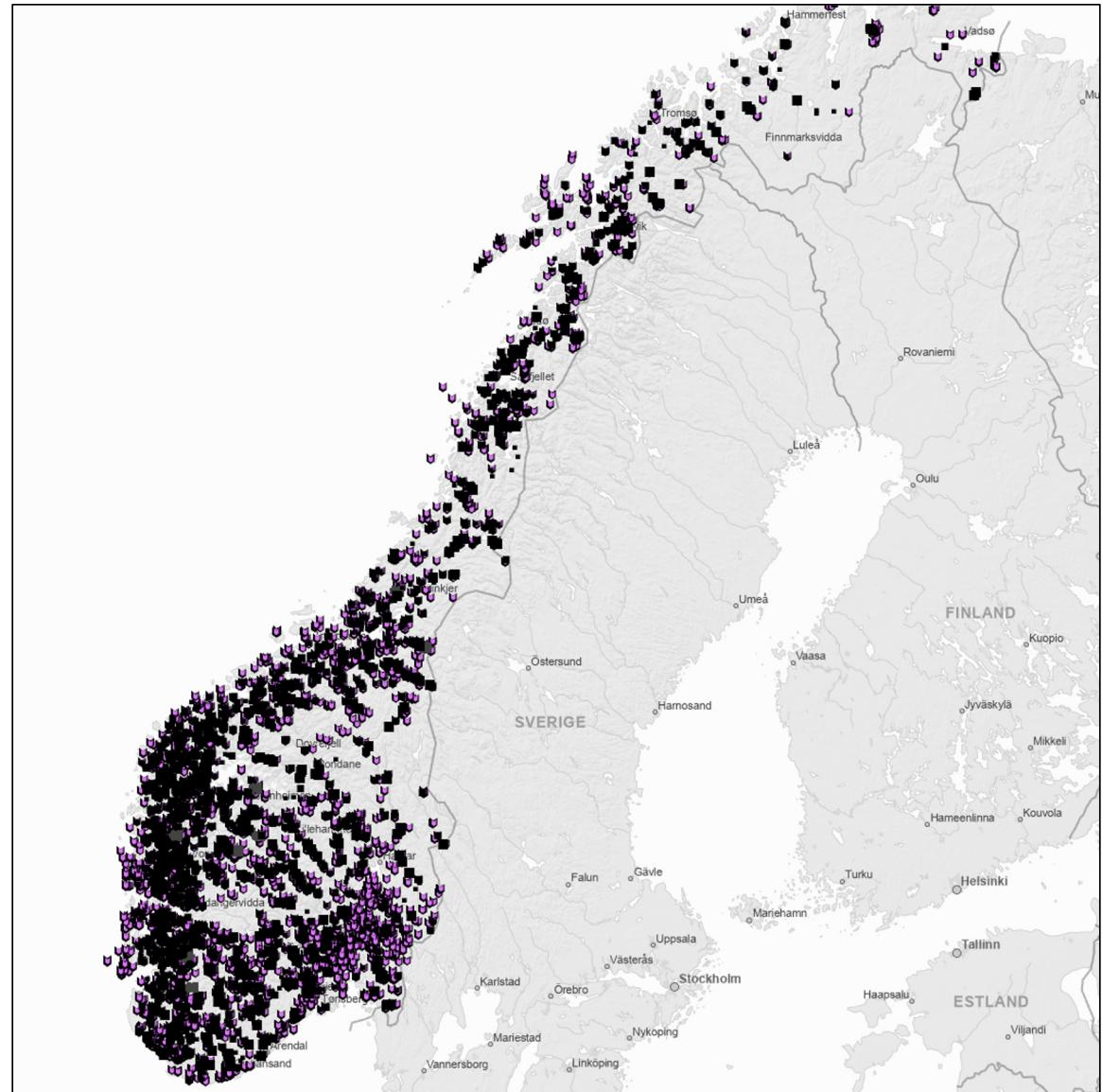


Atlas.nve.no

Map of hydropowers in Norway

but

- large data centers in Norway require power
- And what about moving and saving images?



Websites and images

Traffic flows have indeed risen massively from 100 GB per second in 2002 to 26,600 GB per second in 2016!

(Morley et al. 2018)

Low-tech Web Design



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Fascine Mattresses: Basketry Gone Wild

Around the 17th century, the Dutch started reinforcing their dykes and harbours with sturdy mats the size of football pitches – hand-woven from thousands of twigs grown on nearby coppice plantations. These “fascine mattresses” were weighted with rocks and sunk into canals, estuaries, and rivers.

November 2021

How to Build a Low-tech Solar Panel?

George Cove, a forgotten solar power pioneer, may have built a highly efficient photovoltaic panel 40 years before Bell Labs engineers invented silicon cells. If proven to work, his design could lead to less complex and more sustainable solar panels.

October 2021

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How Sustainable is High-tech Health Care?

<https://solar.lowtechmagazine.com/2018/09/how-to-build-a-lowtech-website.html>

Vertical Farming Does not Save Space

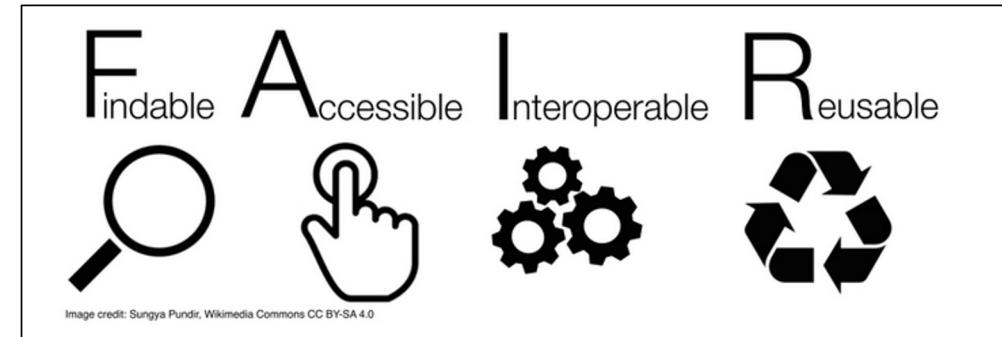
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Morley, J., Widdicks, K., & Hazas, M. (2018). Digitalisation, energy and data demand: The impact of Internet traffic on overall and peak electricity consumption. *Energy Research & Social Science*, 38, 128–137

What about sustainability for databases and interfaces?

Guidelines / Best practices part I

- Reuse of data (create a DMP)
- Public and easy access for researchers (Open Science)
- Use linked Open data
- Link to images, not copy them!
- UX – so your data is user-friendly, and new knowledge is created and stored in the interface!!
- UD – Universal Design



- Principle 1: Equitable Use
- Principle 2: Flexibility in Use
- Principle 3: Simple and Intuitive Use
- Principle 4: Perceptible Information
- Principle 5: Tolerance for Error
- Principle 6: Low Physical Effort
- Principle 7: Size and Space for Approach and Use

What about sustainability for databases and interfaces?

Guidelines / Best practices – part II

- Decrease power usage by using Raspberrypi (<https://www.raspberrypi.org/>) for web servers
- How to “store” databases? (this is an unsolved problem! Ideas? Send an abstract to DHNB2023!!)
- We all need to work for acceptance of the scientific value of creating an open-access database!

Questions?

Mille grazie!