



Making Liveable relations with AI and the Cloud

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## The two energy crises of the digital industries





# Crisis 1: Burning past planetary life for crunching data

2012

GREENPEACE

How Clean

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## AI's thirst for electricity risks slowing US coal phaseout

But analysts cautioned against equating reports of coal plant retirement delays to higher generation

X f in Save



## Crisis 2: An electricity crisis

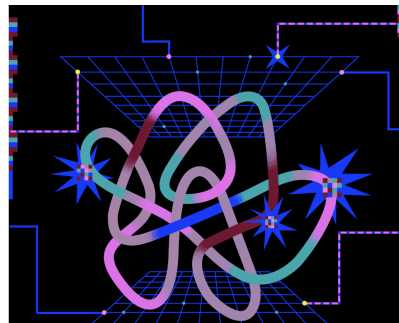


Turmoil at OpenAI | The Latest | What to Know | Inside Sam Altman's Ouster | Winners and Losers | Microsoft-OpenAI Relationship

### ***A.I. Could Soon Need as Much Electricity as an Entire Country***

Behind the scenes, the technology relies on thousands of specialized computer chips.

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### **Energy emergency? Critical power challenges takes center stage at DCD>Connect | London** [Preview the agenda topics for 2024](#)

Marc Ganzi, CEO of DigitalBridge, [dominated headlines last week](#) as he warned that data centers will run out of power in the next two years. But to many, this sentiment will come as no surprise: the hunger for more power has reached a new extreme w the explosion of AI.

That's why critical power will take center stage at [DCD>Connect | London](#), as power demands, grid instability, and sustainability pressures go head-to-head across Europe (and beyond).

Get up to speed on the conversation ahead of the event this September 17-18:

- [Meta's Mark Zuckerberg says energy constraints are holding back AI data center buildout](#)  
"We would probably build out bigger clusters than we currently can if we could get the energy to do it"
- [AWS restricts data center access in Ireland amid power concerns - report](#)  
But elsewhere in Ireland new developments continue
- [UK data center power demand to jump six-fold in ten years, National Grid CEO warns](#)  
Says AI and EVs will put intense strain on grid
- [Emissions reporting scheme for European data centers approved](#)  
Scheme is part of the European Energy Efficiency Directive (EEDD)

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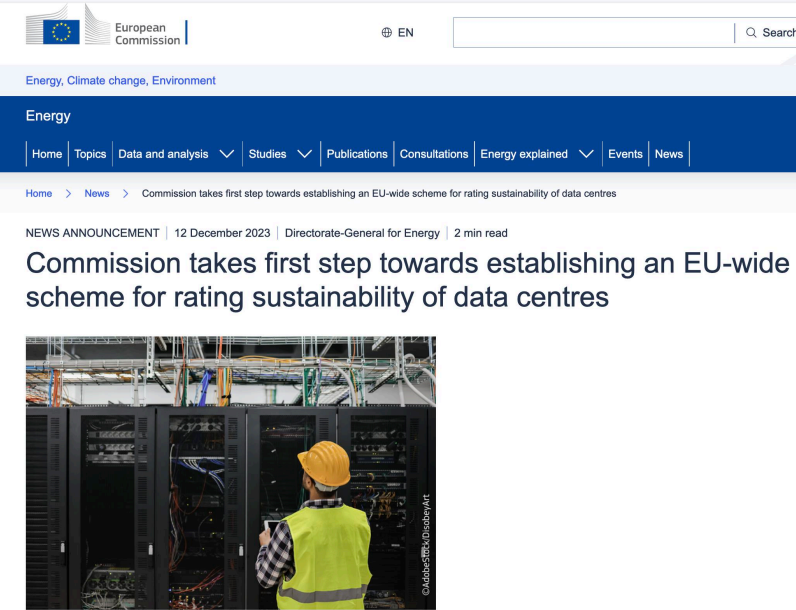
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### **Soaring demand for AI could see the technology consume enough energy to power a small country**



## Some imagined solutions to these crises

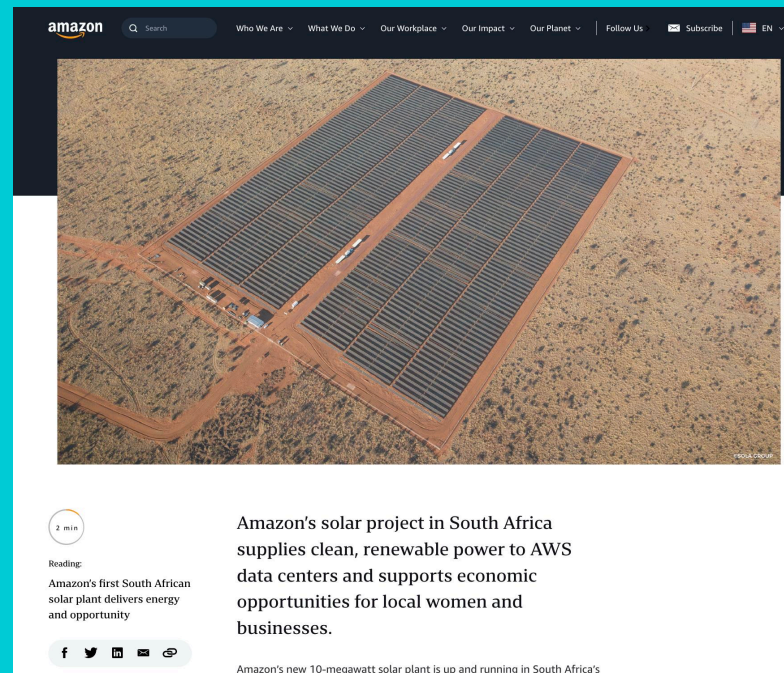
European database on  
data-centres



The screenshot shows the European Commission website. At the top, there is the European Commission logo and a search bar. Below the logo, the text "Energy, Climate change, Environment" is visible. A navigation menu includes "Energy", "Home", "Topics", "Data and analysis", "Studies", "Publications", "Consultations", "Energy explained", "Events", and "News". The main content area features a news announcement titled "Commission takes first step towards establishing an EU-wide scheme for rating sustainability of data centres". The announcement is dated "12 December 2023" and is from the "Directorate-General for Energy", with a "2 min read" indicator. Below the text is a photograph of a person in a yellow safety vest and hard hat working in a server room. The photo is credited to "© Adobe/Alamy/Art".

## Some imagined solutions to these crises

Data giants turning to renewables via building own power plants.



The screenshot shows the Amazon website's header with navigation links: Who We Are, What We Do, Our Workplace, Our Impact, Our Planet, Follow Us, and Subscribe. Below the header is an aerial photograph of a large solar farm in a dry, open landscape. The main headline reads: "Amazon's solar project in South Africa supplies clean, renewable power to AWS data centers and supports economic opportunities for local women and businesses." A sub-headline states: "Amazon's first South African solar plant delivers energy and opportunity." A "2 min" reading time indicator is present. At the bottom of the article preview, there are social media sharing icons for Facebook, Twitter, LinkedIn, Email, and Print. A small caption at the bottom right of the image reads: "Amazon's new 10-megawatt solar plant is up and running in South Africa's".

Over 7 GW of renewable energy



● Wind ● Solar

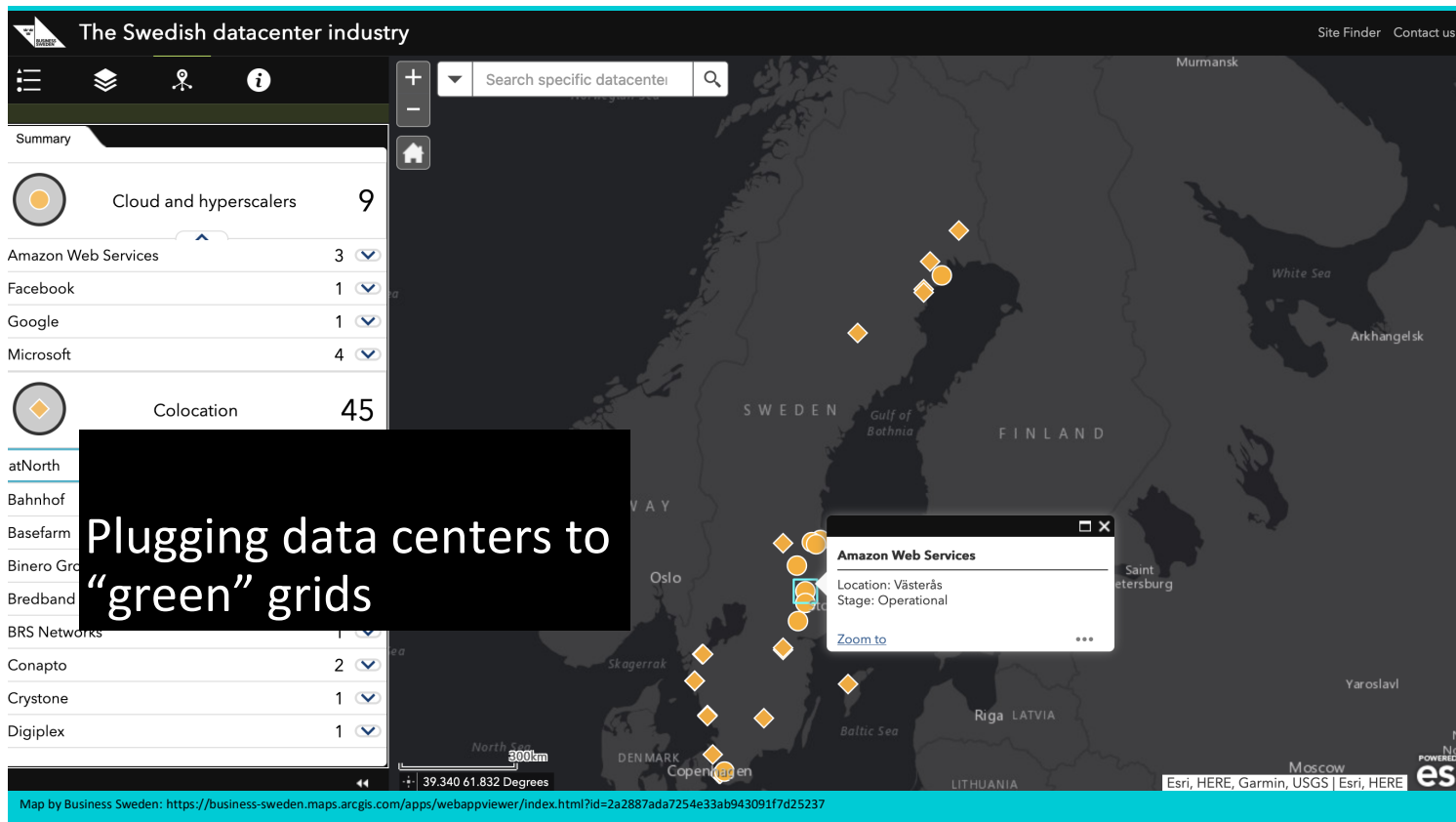


Google Goes Green

#GOOGLE CLOUD PARTNER #GOOGLE CLOUD PLATFORM #INNOVATION



Map by Google: <https://sustainability.google>



Plugging data centers to "green" grids



Using computer-generated  
heat for public heating



Photo: Pipes for data center district heating in Stockholm. Fair use.

edge?

QARNOT Q.RAD SMART HOME GREEN COMPUTING ABOUT US EN

# QARNOT

Discover the next generation of cloud computing

SEAL OF EXCELLENCE

## A disruptive innovation

Awarded with a Seal of Excellence by the European Commission for its disruptive innovation, Qarnot has been selected along with 30 European startups over 886 SMEs at the end of phase I from the SME Instrument of the Horizon 2020 program, within the 'Open Disruptive Innovation Scheme' (ICT-37-2014-1).

Qarnot computing has been granted financial support for its EeHPC project (Energy efficient High Performance Computing) under grant agreement N° 652200.

Qarnot is now preparing phase II.

DOWNLOAD

Do these imaginaries solve the crises?  
New logics, conflicts and inequalities



# Megabytes vs Megawatts

Understanding Infrastructural Frictions between Data Centers and Energy  
Grids for Sustainable Digitalization

Project team:

Julia Velkova

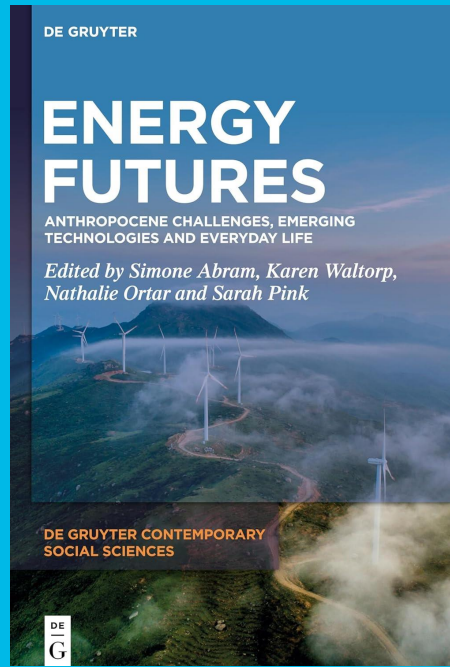
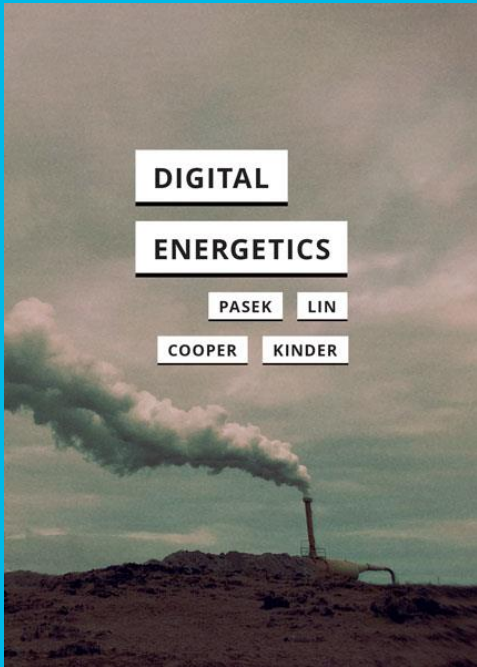
Flora Mary Bartlett

Laura Watts

Johanna Sefyrin

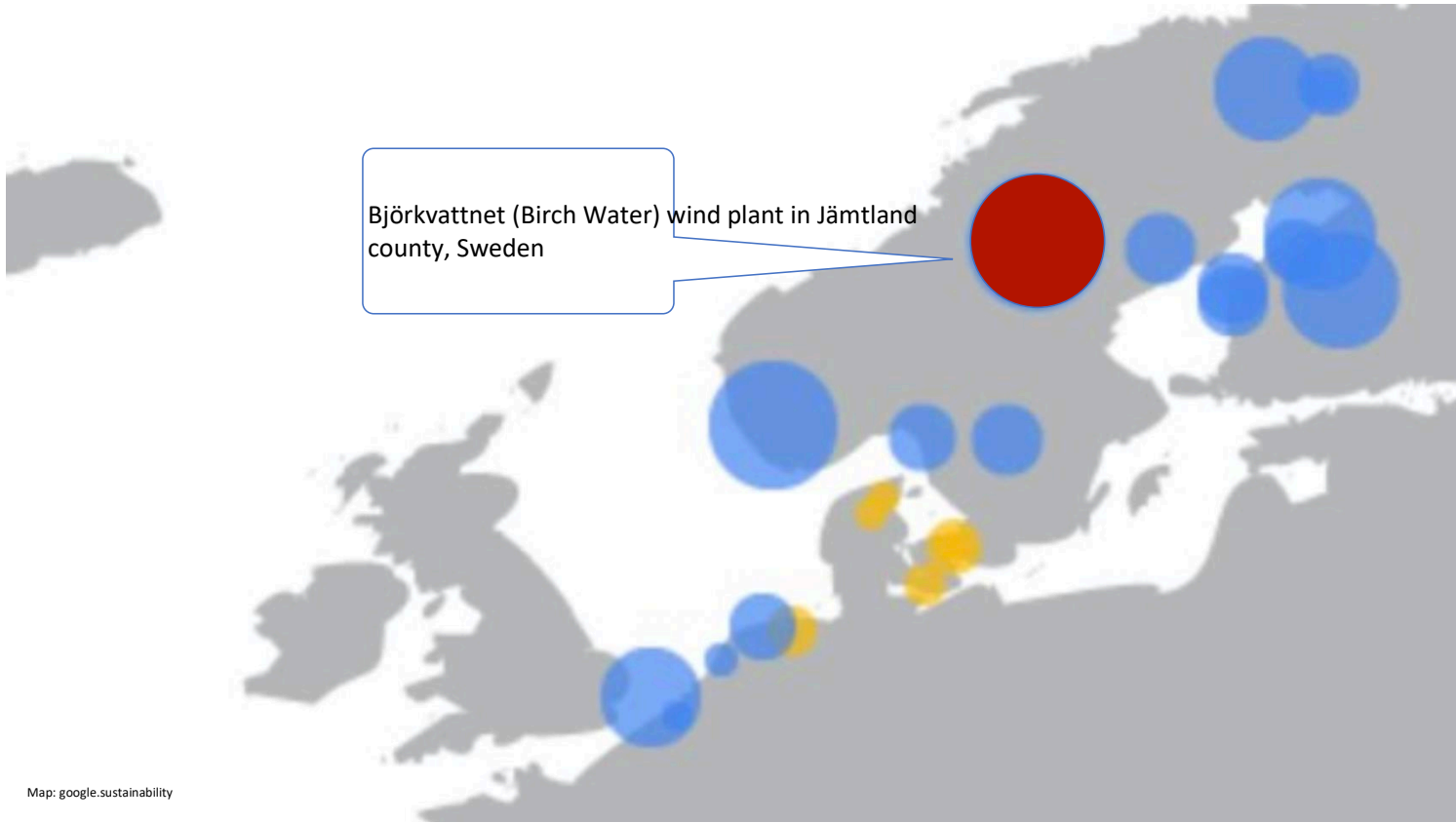
Harald Rohrer

Ulf Melin



# 1. Carbon (-free?) Coloniality

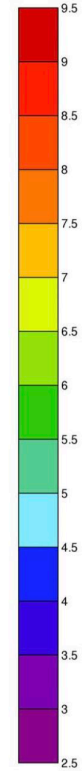
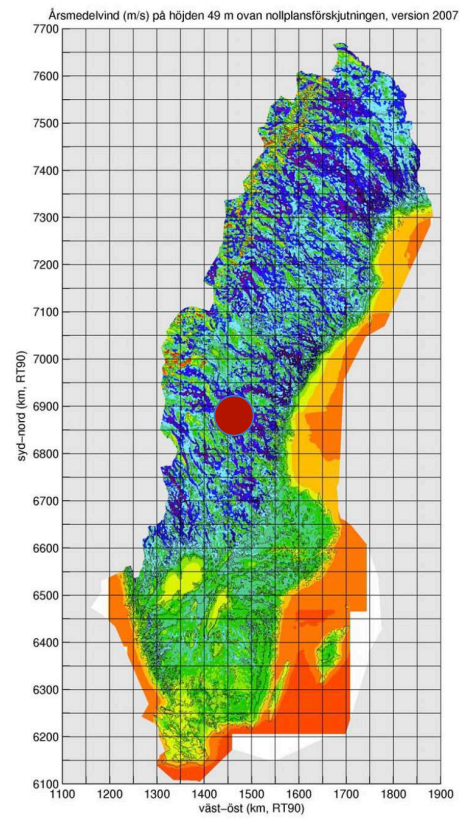




Björkvattnet (Birch Water) wind plant in Jämtland county, Sweden

Locating wind  
for Google (in a  
place where it  
does not blow)

Map: model of wind speed in Sweden; Institute for Geosciences, Uppsala University



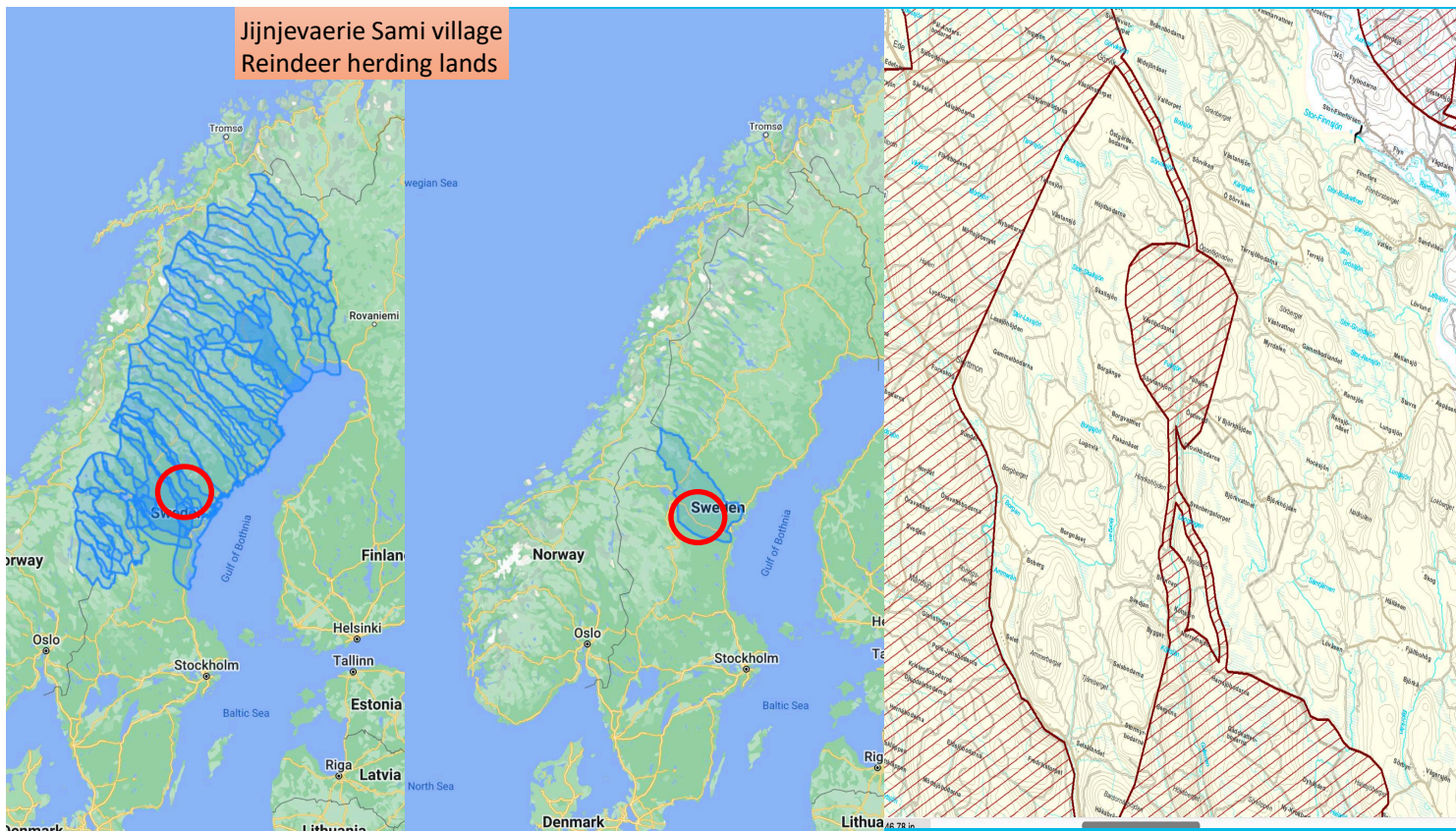


# Vertical energy politics

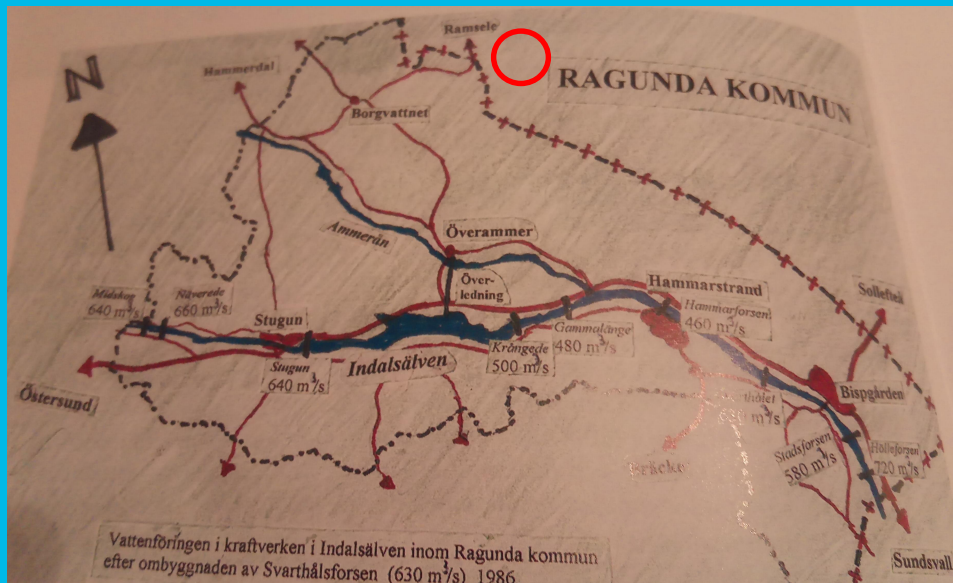


Photos: 220m tall wind turbine producing electricity for Google in Ragunda municipality, Sweden and a map of the wind park. Author: Julia Velkova

Jijnjevaerie Sami village  
Reindeer herding lands



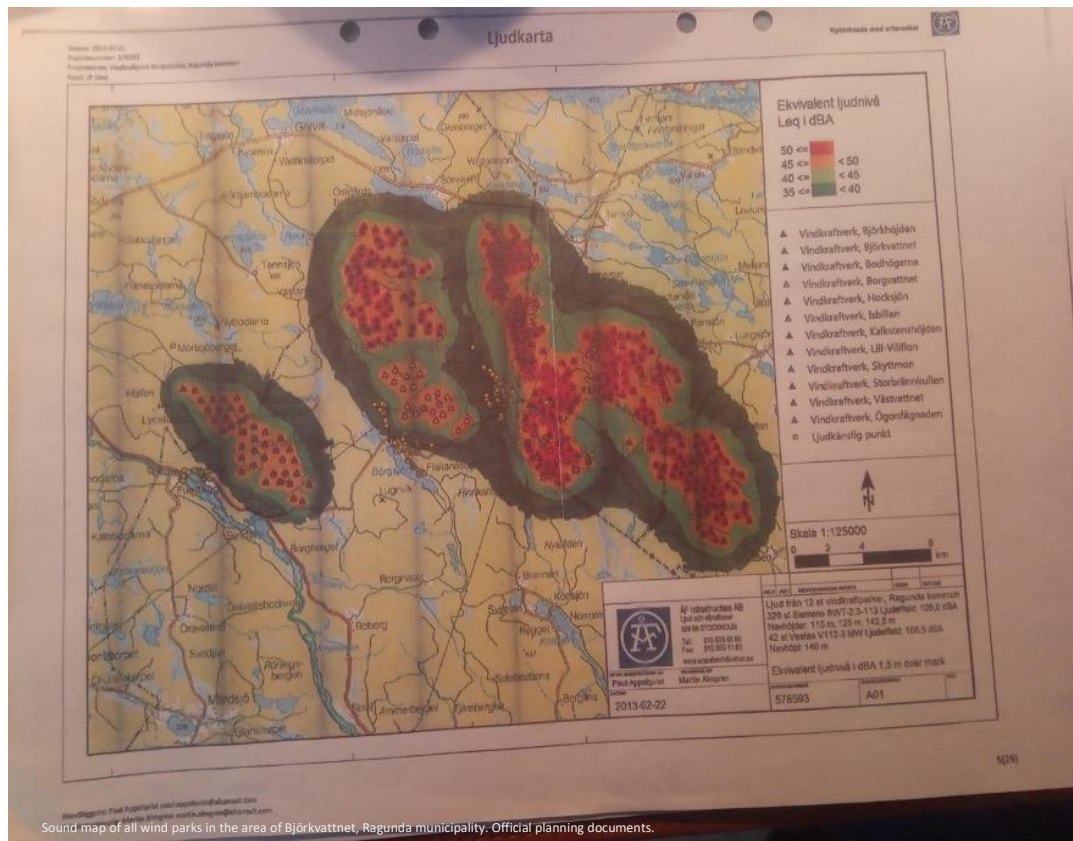
“We are too a native population here”.



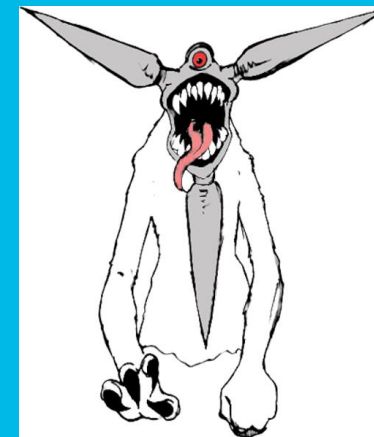
Map: hydropower in Ragunda municipality from the book "Kampen om Ammerån" (The fight for Ammer-river), Inga-Maj Granquist, Britt-Elise Ohlsson Fair use.

“The group deciding the area of the wind park were guys with cardigans. I have not clue who they were.

Those who wanted to build came - people in suits, in a truck. It will be a great development, they said. He stands and speaks, and people listen and say, aaaaah, ooooh. "



New landscapes:  
acoustic, terrestrial,  
human-plant-animal  
relations, mediated  
by Google wind farm



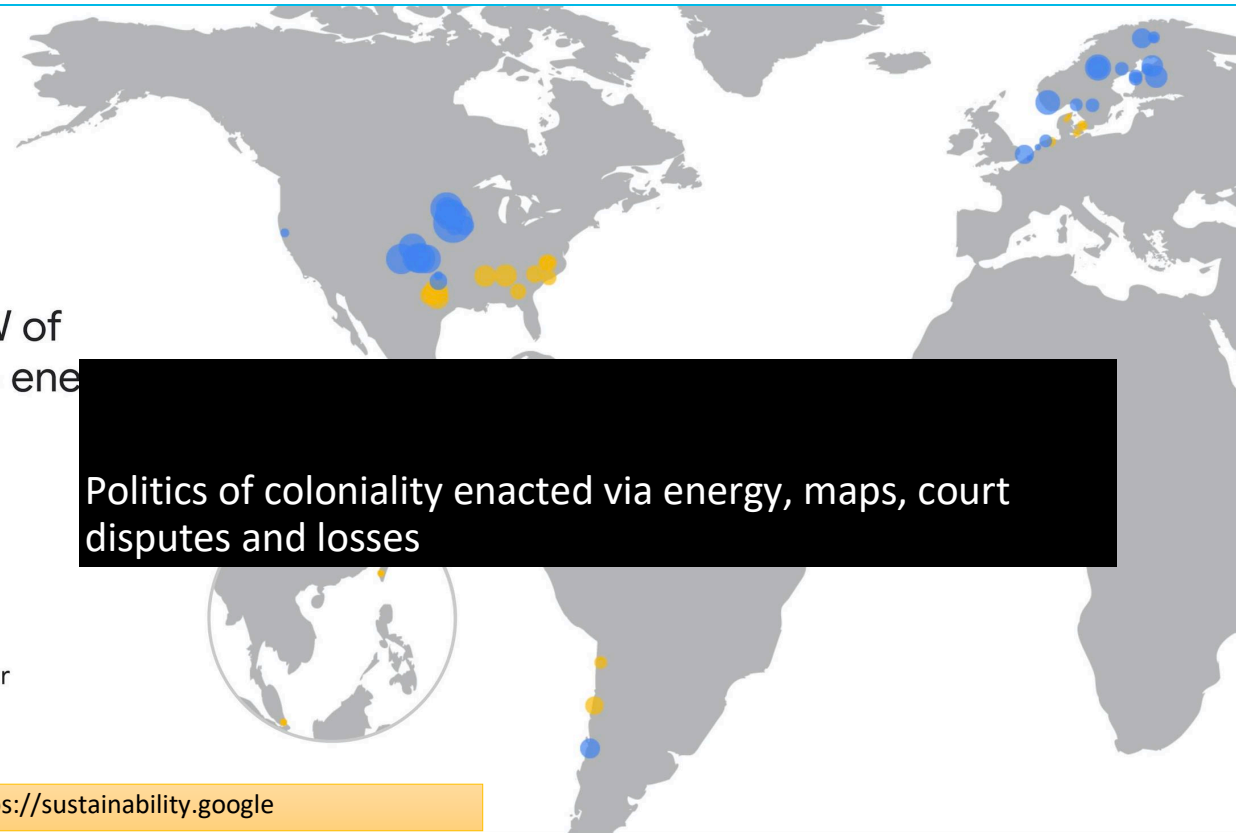
Drawing of a local activist

Over 7 GW of  
renewable ene



Politics of coloniality enacted via energy, maps, court  
disputes and losses

Map by Google: <https://sustainability.google>



## 2. Infrastructural gentrification

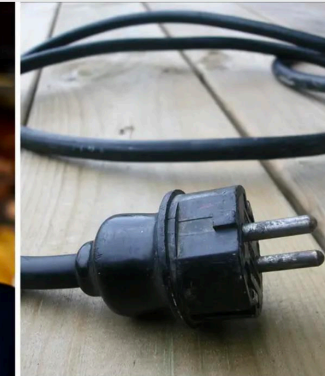
## Microsoft opens its sustainable datacenter region in Sweden, creating new opportunities for a cloud-first Sweden

16/11/2021



**STOCKHOLM, Nov. 16, 2021** – Today, Microsoft Corp. announced the launch of its newest sustainable datacenter region in Sweden, with presence in Gävle, Sandviken and Staffanörp. Microsoft's new world-class datacenters in Sweden are open for business with Microsoft Azure and Microsoft 365 available today, delivering advanced data security, privacy and the ability to store data in the country. The new datacenter region brings the best of Microsoft's sustainability investments, powering the datacenter with 100% carbon-free energy and supporting zero-waste operations, underscoring Microsoft's ongoing investment to help create new long-term opportunities across both commercial and public sectors in

### / SKÅNE



Elbristen gör att brödtillverkaren Pågen överväger att flytta verksamheten. Det uppger vd:n Anders Carlsson Jerndal. Foto: Pågen/CC Commons/TT/Hasse Holmberg

## Brist på el gör att skånska företag flyttar investeringar

UPPDATERAD 4 JUNI 2019 PUBLICERAD 4 JUNI 2019

Skånska företag kan inte växa på grund av brister i elnätet. Brödtillverkaren Pågen och ventilationsföretaget Indah är två av de



**li.u** LINKÖPING  
UNIVERSITY

Image above: Julia Velkova; image to the right: Flora Mary Bartlett



# Infrastructure gentrification

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## EirGrid says no new applications for data centers in Dublin until 2028 - report

No national moratorium, but a de facto one in Dublin?

January 11, 2022 By: Dan Swinhoe Comment



Ireland's state-owned electric power transmission operator EirGrid has said it will no longer accept applications for new data centers in Dublin.

Irish press including [RTE](#) and the [Business Post](#) are reporting that EirGrid has confirmed that it will not connect new data centers in Dublin for 'the foreseeable future' and possibly until 2028. Data center applications already in the pipeline will be progressed.

It said the greater Dublin area is constrained and any new data center applications will only be considered for other parts of the country on a 'case-by-case basis'.

New connections to the grid will be evaluated using the assessment criteria set out by the Commission for Regulation of Utilities (CRU) and available capacity.

Data centers in Ireland have come under close scrutiny in recent months as politicians and environmental groups question their energy demand with the country's environmental goals. RTE noted that EirGrid has issued seven amber alerts in a recent 12-month period warning of issues with energy supply.



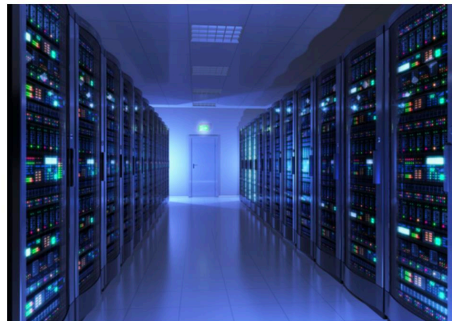
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## Dutch call a halt to new massive data centres, while rules are worked out

Business Tech & Media February 17, 2022



The interior of a server farm. Photo: Depositphotos.com

The Dutch government has imposed a **nine-month moratorium** on the building of new

Malmö, Eskilstuna, Gävle



# Crack(s)

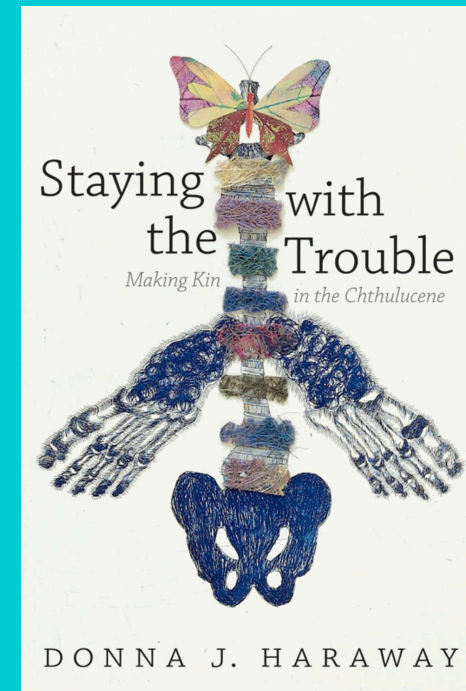
“Cracks are material events that emerge as the result of force contradictions...They progress along paths of least resistance, exploiting and tearing through different material substances where the cohesive forces of aggregate matter are at their weakest. Cracks can move slowly, linger for years in a state of potentiality, or accelerate and tear a building apart when force contradictions can no longer be absorbed” (Eyal Weizman 2019, *Forensic Architecture*, p. 53)

Where are we heading with “Sustainable”  
ICT? What are we actually sustaining? And  
what is being destroyed? Who is being  
displaced?

Big Tech actors and the data center industry  
create UNLIVEABLE FUTURES, DISMANTLING  
PUBLIC VALUES — all through sustainability  
projects.



# Towards Liveable futures with the digital industries



## HOW to make liveable relations with digital infrastructure

- What would a digital future that sets as a goal to proliferate and sustain reindeer herding and indigenous people lifestyles unchanged look like?
- What would a digital future that begins with care for public, shared, equitable infrastructure look like?
- The digital in the 1990s was built around the today utopian idea of serving the common good. How can the idea of commons be rehabilitated? We need to sustain infrastructure commons, land commons, energy commons from the insatiable appetite of the digital industry.



## 3 principles for regulation/policy

1. Priorities - develop rigorous and equitable principles regarding how much public infrastructure capacity can be allocated to different actors in society. And question the need to datafy and digitalise so intensely.
2. Values and Principles of Publicness
3. Data centers should be regulated as infrastructure to introduce obligations.

Not against digitalisation but what form digitalisation can take.