

Impacts of Swiss Data Centres: How to Curb Their Expansion

Loris Gomez, Lucien Peguiron, Adam Chong, and Thierry Fong



Over the course of this semester, our research has highlighted the significant impact of data centres on Swiss territory. Although these facilities are often presented as neutral technical infrastructures, they are in reality massive energy consumers. Their growing electricity demand is reshaping remote landscapes to accommodate dams, wind farms, and alpine solar installations. Their presence is deeply entangled with economic and political interests, raising fundamental questions about land use, energy priorities, and the collective benefits of the digital services they sustain.

Against this backdrop, we explore the hidden energy systems made tangible by the Green Metro Campus in Dielsdorf, the experiences of local residents with these infrastructures, and the broader implications of the rapid acceleration in data centre development. These realities prompt questions about visibility, responsibility, and how such transformations can be guided before they become irreversible.

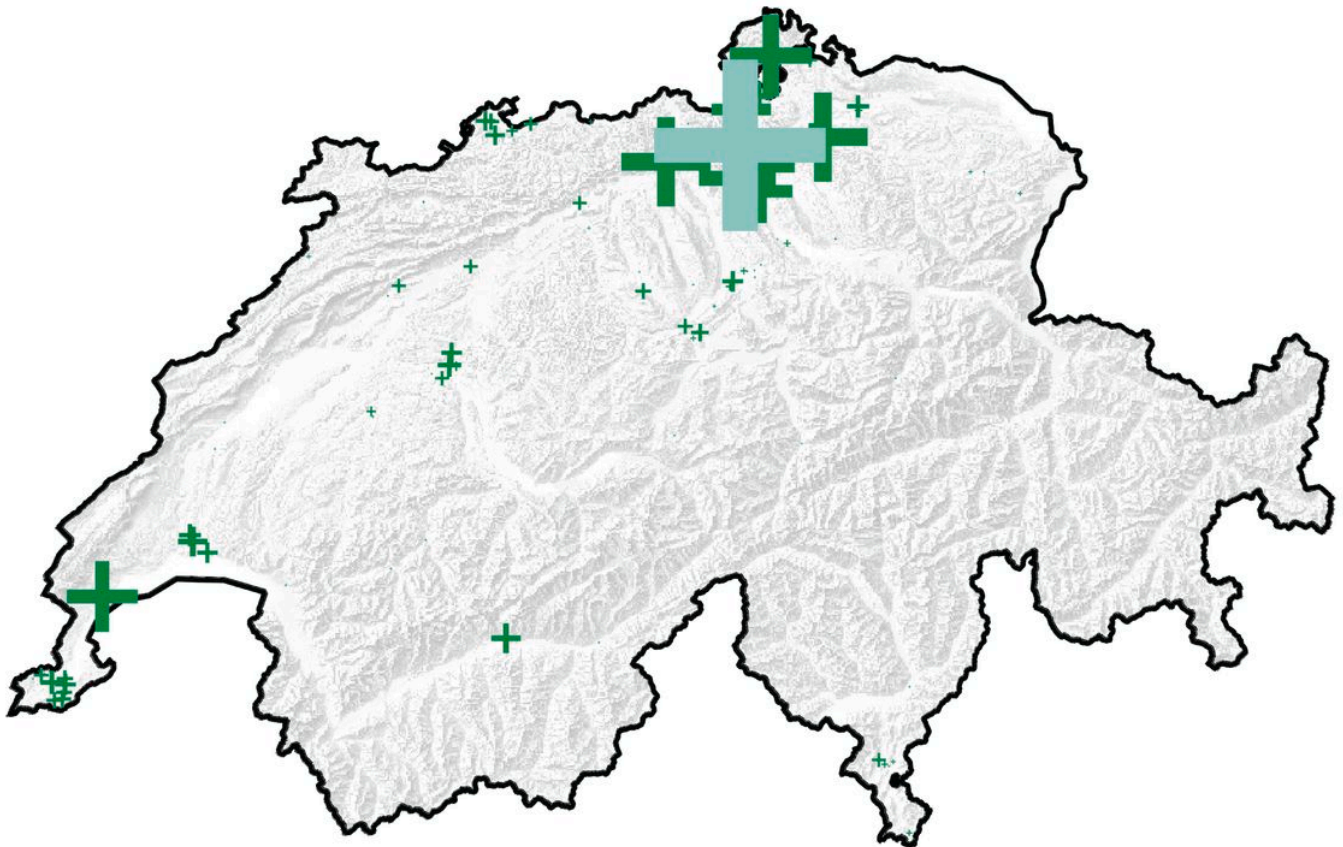
Vision of Future Territories—Inside the Swiss Data Centre Industry



Energy has become the silent foundation of everyday life. It powers communication, work, mobility and our participation in social and digital life. In Dielsdorf, the Green Metro Campus reveals the physical infrastructure that sustains digital services, quietly expanding behind their apparent immateriality.

Introducing the Green Metro Campus in Dielsdorf

Switzerland's largest data centres are concentrated around Zurich, the nation's financial and technological hub. Thanks to its reliable power, strong connectivity and political stability, this region attracts major investments.



LOCATION OF DATA CENTRES IN SWITZERLAND

The map shows the locations and relative sizes of data centres across the country, highlighting Zurich as the central hub. Centres outside Zurich are smaller and more dispersed. Drawing: the authors, 2025.

+ Green Metro Campus

Green is a Swiss provider of data centre, cloud, and connectivity services. It is developing the Metro Campus, one of Switzerland's largest data centre projects, which is expected to have a total capacity of 50 megawatt (MW) once all three buildings are completed. Located in the industrial zone of Dielsdorf, a municipality on the outskirts of Zurich, the campus covers nearly 6 km² and is home to around 6,700 people.



LOCATION OF THE COMMUNE OF DIELSDORF
Source: Google Earth, 2025.

When speaking with Gina Steuble, the Building Commissioner for the Municipality of Dielsdorf, she emphasised that she was most impressed by the speed and level of organisation with which the Green Metro Campus project was planned and delivered. During a site visit guided by Andrea Campomilla, Chief Operations Officer (COO) at Green Datacenter AG, the importance of timing as a key driver of profitability was repeatedly emphasised.

Construction began in the first quarter of 2021, and the first clients were able to move their servers in by December 2022. The data centre became fully operational in January 2023. The second data centre is currently under construction and is expected to become operational soon. If this pace continues, the entire campus could be completed by 2027.



GREEN METRO CAMPUS 2015
Source: Google Earth, 2025.



GREEN METRO CAMPUS 2019
Source: Google Earth, 2025.



GREEN METRO CAMPUS 2021
Source: Google Earth, 2025.



GREEN METRO CAMPUS 2023
Source: Google Earth, 2025.



GREEN METRO CAMPUS 2025
Source: Google Earth, 2025.

What does it take to build infrastructure like the Green Metro Campus? As well as construction speed and scale, such a project relies on a dense network of people and resources. To better understand the key stakeholders and the way they connect, six core concepts have been identified and are illustrated in the diagramme below.

A LARGE-SCALE PROPERTY

To build this data centre, Green acquired a 46,000 m² plot of land in Dielsdorf. What initially appeared to be a pristine agricultural field is actually part of the town's industrial zone. In the 1960s, Dielsdorf's president, Rudolf Holenstein, permitted agricultural land to be sold to industrial enterprises, thereby accelerating the town's economic growth. It is believed that the land purchased by Green may previously have belonged to Maag AG, a long-established company that supported the population and economic growth of Dielsdorf for many decades.

With the land secured, Green submitted their project to the municipality. Local authorities cannot reject a project without a legal reason; their role is merely to ensure compliance with zoning and building regulations. In this case, the data centre had to adhere to a maximum building height of twenty metres and a depth limit due to its location above a groundwater aquifer. The project's scale and significance did not go unnoticed. Dielsdorf's Mayor Andreas Denz proudly remarked: "Which mayor can say that they have three data centres in their area?", highlighting Dielsdorf's unique position in Switzerland's data centre landscape.

A BUSINESS PARK PROJECT

Green aims to move beyond the traditional "black box" model of data centres. The vision is to create a business park combining hyperscale-ready data centres with offices and workspaces for other companies. While some tenants, such as the district's Mobilier branch, are publicly known, the park also hosts major international hyperscalers and Swiss banks, whose identities remain confidential. This underscores the strategic importance of, and trust placed in, Green's infrastructure.

A 500 MILLION SWISS FRANCS INVESTMENT

InfraVia Capital Partners, a French equity fund, supported Green during the initial phases of the Metro Campus project. In 2018, they bought Green from Altice and sold it to IFM Investors, an Australian investment company, in October 2025. Green was originally founded in 1995 as "Agri" by the Swiss Farmers' Union to provide an internet connection in rural areas. It has had multiple owners over time, but the Green we know today was born after a management buyout in 2001, when "Agri" officially became "Green."

THE GOAL OF A 50 MEGAWATT CAPACITY

The Metro Campus is expected to reach a total capacity of 50 MW upon completion. As the cantonal electricity provider, EKZ is responsible for connecting Green to the grid. In order to meet this demand, EKZ has invested 14 million Swiss Francs in building a new substation directly on Green's land.

While EKZ guarantees that the supplied electricity is 100 % renewable, the company only produces a small fraction of it itself, buying the rest from Axpo AG or international sources. In order to ensure that this electricity can be claimed as renewable, the market relies on "guarantees of origin," which are certificates that verify the energy was produced from renewable sources.

However, the challenge is that these certificates are disconnected from the actual electrons flowing through the grid. In other words, when a data centre is powered with “green electricity,” the electricity it consumes may not be the same electricity produced by a renewable source. Guarantees of origin are a bookkeeping mechanism that enables suppliers to claim renewable energy, but the physical electricity mix on the grid still contains fossil and nuclear-generated power.

THE PROMISE OF EFFICIENCY

Green and the Municipality of Dielsdorf are committed to making use of the waste heat generated by the servers. As part of its goal to become Europe’s most efficient data centre, Green has partnered with Energie 360° to channel this heat into a district heating network serving Dielsdorf and five surrounding municipalities. This supports both a circular economy and the energy transition.

Heat recovery is a by-product of Green’s operations, not the primary service provided by the data centre. However, while Green’s heavy investment in efficiency is commendable, it raises the question of how efficiency gains and energy reuse should be weighed against the massive energy consumption.

Community Impact— A Worrying Nonchalance



How is the presence of a data centre perceived by local inhabitants? Discussions with residents reveal unclear perceptions and limited understanding of the impacts. Are the energy efficiency measures actually sustainable?

On-Site Reportage

The following video reportage is based on street interviews conducted in Dielsdorf and brings together local perspectives on the arrival of the data centre, public awareness of the project, and its implications for the local environment.



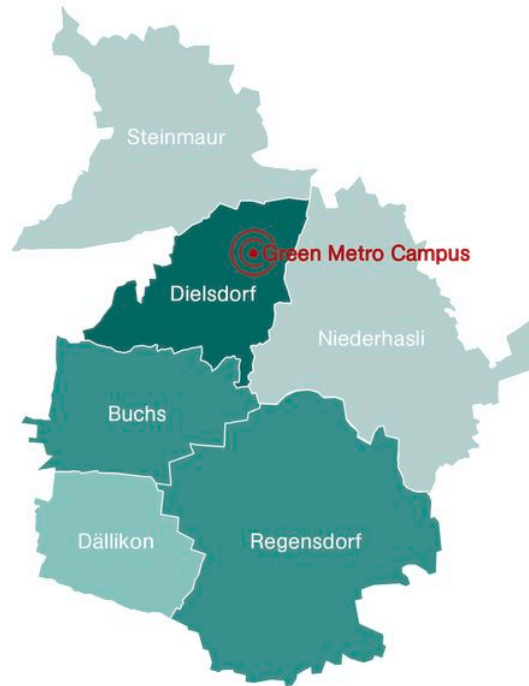
Echoes from the Community, the authors, 2025.

<https://www.youtube.com/watch?v=zUtresZKdLI>

Through interviews with a wide range of local people, a common pattern emerges: many residents do not perceive any clear benefit from the data centre, while its impacts are considered to be limited or even negative. This situation highlights a lack of public awareness and the opaque nature of political decision-making in the data centre industry. This is particularly concerning given that the rapid expansion of data centres is largely driven by consumer demand for digital services, data storage and AI tools, yet the social, environmental and territorial consequences of this growing infrastructure are poorly understood.

The Promise of Waste Heat and Its Limits

Green and Energie 360° have initiated a district heating project in Dielsdorf, promoting it as a sustainable and efficient solution. By capturing and reusing the waste heat generated by its data centre operations, the company is positioning the system as a means of contributing to local carbon reduction and improving energy efficiency. Plans are in place to expand the network beyond Dielsdorf in the coming years, with the aim of supplying nearby municipalities such as Regensdorf, Steinmaur, Buchs, Dällikon, and Niederhasli. This will further reinforce the company's image as a regional energy initiative.



DISTRICT HEATING AREAS SUPPLIED BY GREEN METRO CAMPUS
Drawing: the authors, 2025.

- Network operation starting in 2025
- Network operation starting in 2026
- Ongoing operational feasibility study

Although the district heating network is presented as a regional solution offering long-term benefits, its impact is most keenly felt at the household level. Beyond infrastructure maps and expansion plans, the key question is how this system translates into tangible costs, choices, and risks for individual residents.

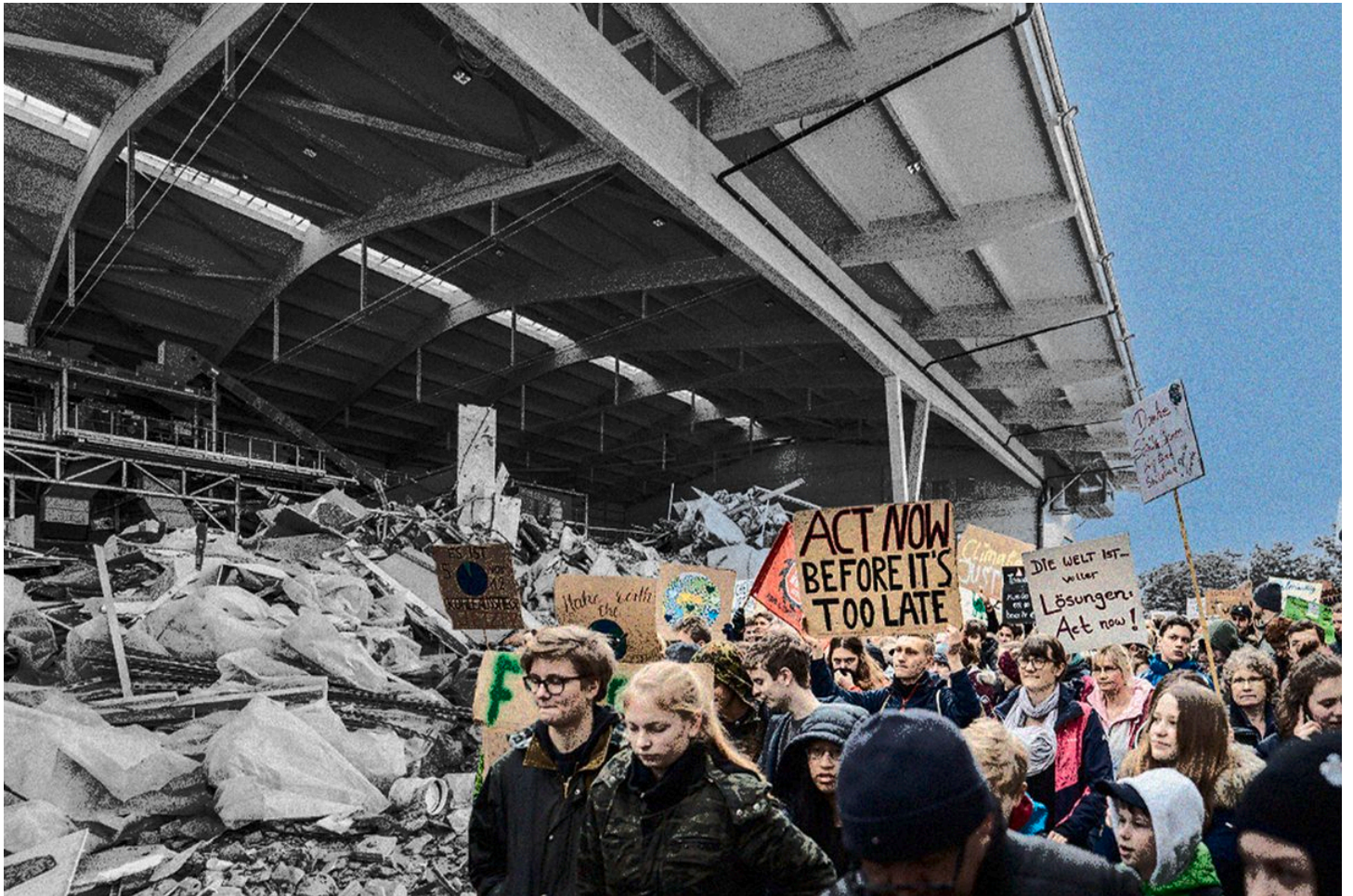
Fernwärme Öko	
Sie erhalten Fernwärme aus nachhaltiger Energie.	
Einmalige Kosten exkl. MWST	9'319
Anschlussbeitrag	9'319
Jährliche Kosten exkl. MWST	2'611
Grundpreis	2'363
Energiepreis	248
Alle Preise sind in CHF und am aktuellen Index für Teuerung und Energie angepasst.	

DISTRICT HEATING PRICES FOR DIELSDORF
Source: Energie 360°.

The calculations are based on a household of three to four people with an annual electricity consumption of 3,000 kWh. Although the operating costs of 2,611 CHF for the district heating system are considered competitive and stable, residents are required to make a substantial upfront investment of 9,319 CHF to connect to the network. This initial cost can pose a significant financial challenge, particularly for households whose existing heating systems have a considerable remaining lifespan.

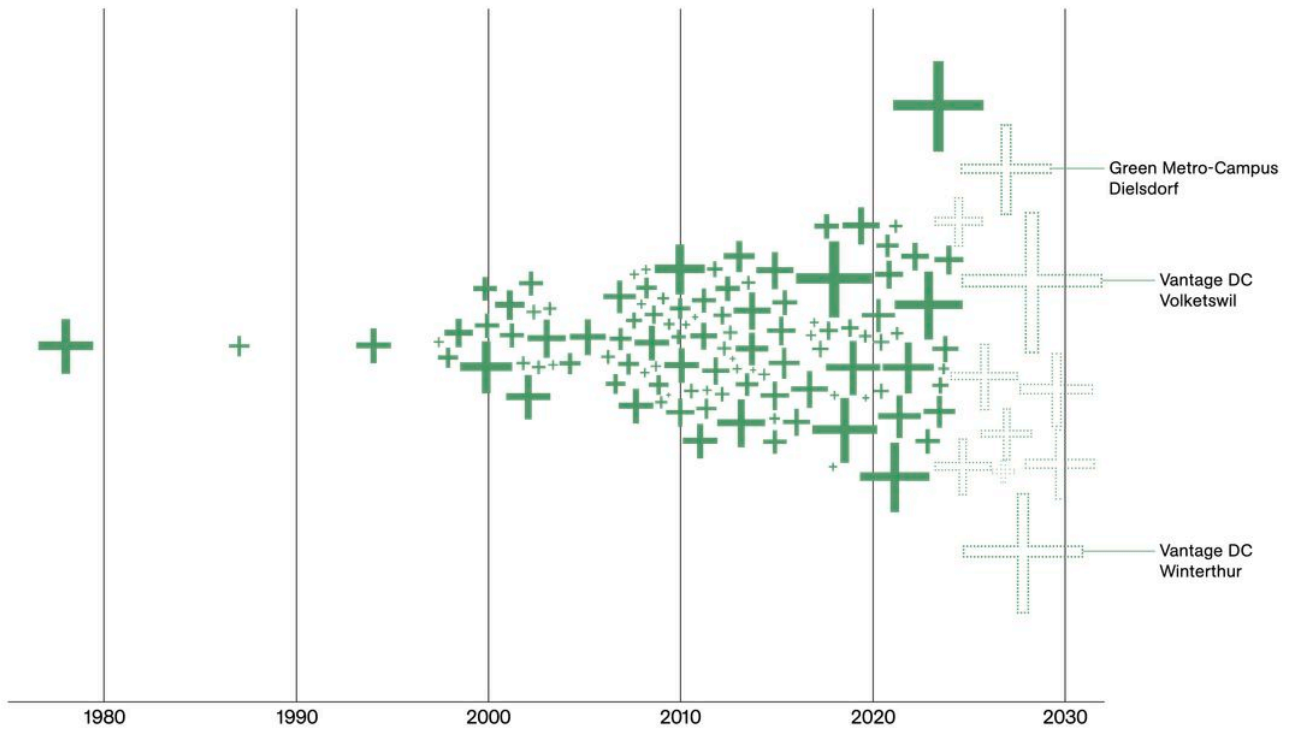
Furthermore, although district heating infrastructures are generally designed to last several decades, data centres have much shorter lifespans due to rapid technological change and evolving demand. This creates a timing issue: residents would be tied to a system that might not provide heat for as long as expected.

Mitigation Opportunities— Potential Solutions to Adopt



The growth of data centres has accelerated in recent years and the expansion is unfolding in real time. How can this growth be guided thoughtfully? What lessons can we learn from other places, and how can we raise public awareness before it's too late?

Until a few years ago, data centres in Switzerland were developing at a relatively predictable pace. They were mostly limited to smaller facilities supporting cloud services, banking and telecommunications. However, the rapid growth of artificial intelligence, large-scale data processing, and digital services has led to increased demand for computing power, triggering a new wave of much larger data centre projects.



THE CONSTRUCTION AND PLANNING OF DATA CENTRES AND THEIR SIZES IN SWITZERLAND BETWEEN 1980 AND 2030
Drawing: the authors, 2025. Source: SRF Data, 2025.

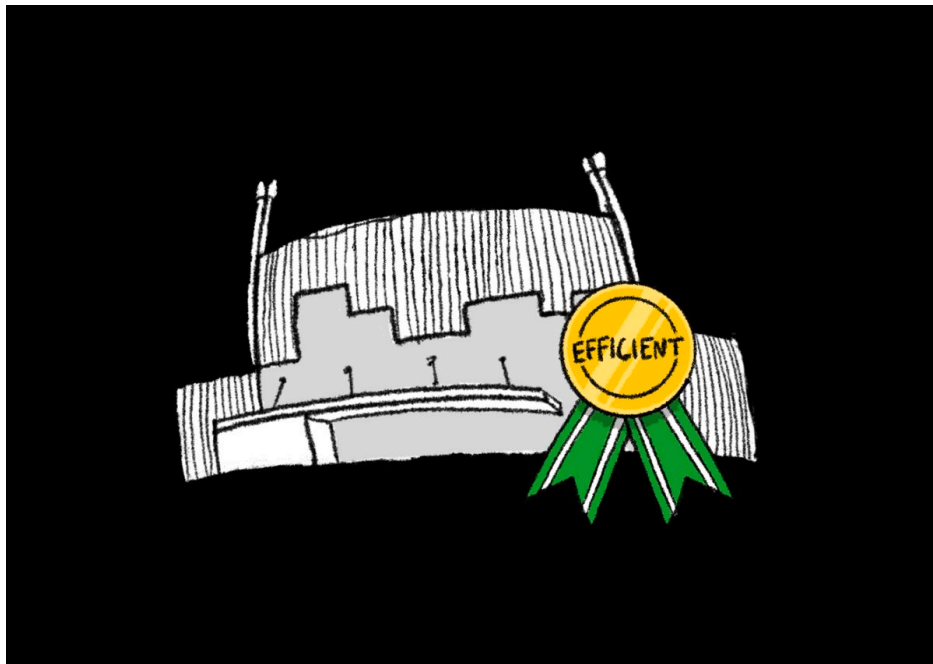
+ Built

+ Planned

The scale and speed of today's expansion clearly marks a break from the past. New facilities are significantly larger and more energy-intensive. This growth is raising concerns among residents, local authorities and energy providers such as EKZ, who must ensure that electricity grids can keep pace with rising demand. As data centres become a central pillar of the digital economy, questions about limits, planning and long-term sustainability are becoming increasingly difficult to ignore.

Is the Grass Greener on Other Sides of the Fence?

Currently, Switzerland has no restrictive policies regulating data centres. Although a proposal to make heat recovery mandatory was discussed, the Federal Council recommended rejecting it. Nevertheless, the Swiss Datacenter Efficiency Association (SDEA) has launched a national energy efficiency label for data centres, supported by the federal government. This label assesses actual energy consumption, CO₂ emissions, and the use of renewable energies.



Many countries entered the “data centre race” much earlier than Switzerland. Can we learn from the mistakes made and the regulations established? Is it possible to develop a scenario in which the data centre industry is curbed?



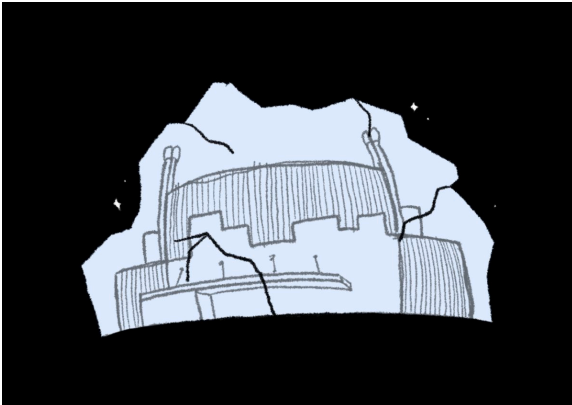
US

The US have no federal restrictions, rather a philosophy of growth. Actions relay on each state. Some temporary moratoriums had to be imposed to study zoning plans and territorial impact to prevent water and electricity shortages. More than 200 environmental groups demand to impose a moratorium on data centers until regulations are put in place.



CHILE

In Chile, local protests and lawsuits have delayed or reshaped hyperscale projects. This revealed a visible dilemma with no clear winner, as rejecting data centers risks technological marginalization, while approving them fuels social backlash. The National Data Centers Plan emerged In 2024 as a response to this "no-win" situation, aiming to manage conflict and provide regulatory coherence while still pursuing foreign investment.



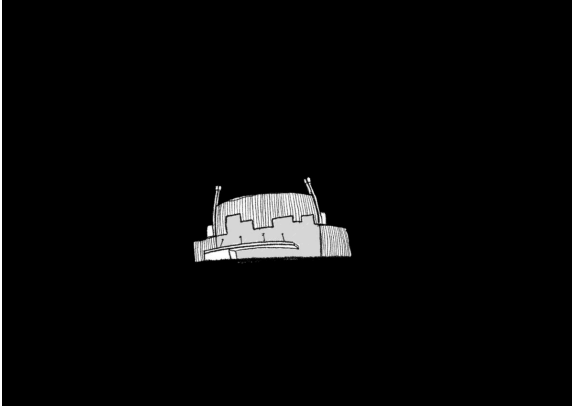
IRELAND

Ireland imposed a data center moratorium because the rapid growth of data centers was creating unsustainable demand on the electricity grid. New grid connections were paused to ensure that energy infrastructure could be upgraded. The moratorium was lifted through a new CRU policy that states that 80% of the used energy has to be renewable.



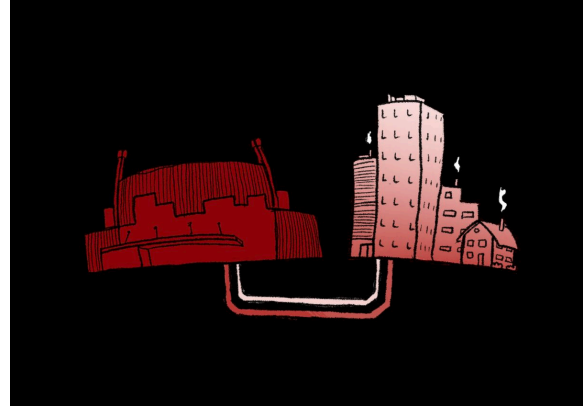
SINGAPORE

Singapore, like Ireland, froze the construction of new data centers in 2019 due to severe constraints on energy, water and space. Since 2022, the country has lifted this moratorium but the government acts as a gatekeeper explicitly reviewing the new projects before allocating land and power for data centers.



THE NETHERLANDS

The Netherlands' government changed the rules in January 2024, new hyperscale data centres can only be built in specific locations. Amsterdam went further, capping new developments above 670 MW unless they serve local needs without adding grid pressure. Amsterdam risks losing its position as a major data center hub in Europe.



DENMARK

In Denmark, there was previously a price cap on surplus heat sold into district heating, limiting how much companies could charge the consumers. That cap made it hard for projects that reuse data center waste heat to get a return on investment and be financially viable. In early 2025, the Danish Parliament agreed to abolish this price cap. Removing it is expected to unlock more heat reuse projects.

Countries that neglect the environmental impact of data centres often end up having to limit or pause their development, which has consequences for investment and technological growth. Although governments play a pivotal role in establishing regulatory frameworks, these are most effective when the public is well-informed and able to engage with the issue.

In several countries, civic mobilisation has already influenced data centre policies. In Switzerland, however, public awareness of the environmental, social and territorial implications remains limited. This raises the question of how these issues can be communicated more effectively to enable informed discussion and collective responses.

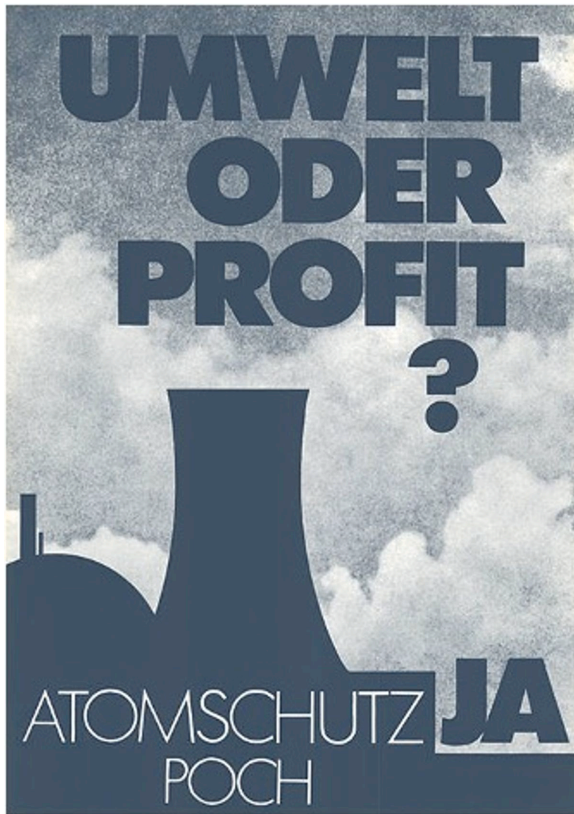
Awaken, Understand, Act: Building Peaceful Civil Resistance

Even before the Green Metro Campus has reached full capacity, a larger data centre developed by the international firm Vantage is already taking shape in Volketswil.

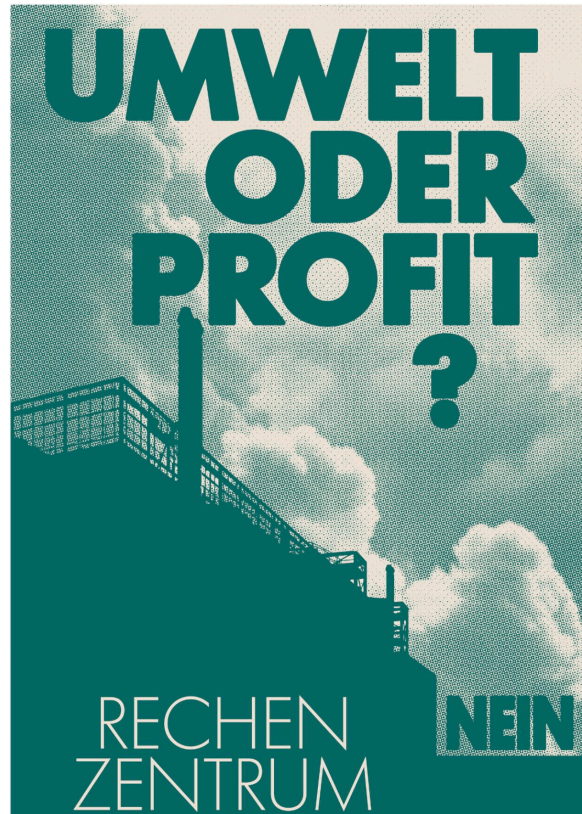
The situation feels familiar: a greenfield site in an industrial area, accompanied by promises of sustainability through district heating—as if this could offset the project's environmental impact.

So far, this rapid expansion has attracted little attention from environmental groups and has faced no significant opposition. This mirrors the early stages of the Swiss anti-nuclear movement, when major projects advanced with limited public debate. However, growing awareness later sparked protests and civic mobilisation that influenced energy policy.

Inspired by historical anti-nuclear movements and vintage Swiss advertising, we have developed a series of posters based on Swiss popular initiative posters:



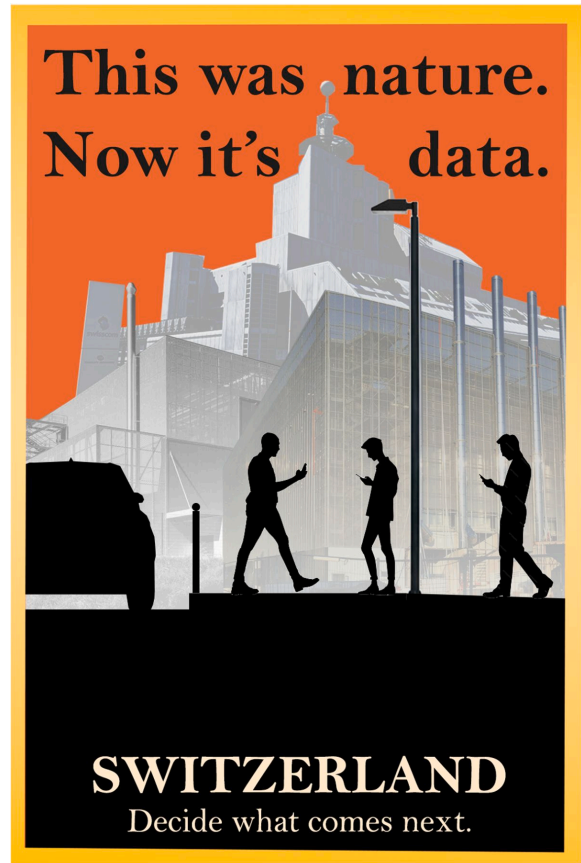
NUCLEAR PROTECTION INITIATIVE POSTER
Source: swissvotes.ch, 1979.



DATA CENTRE PROTECTION INITIATIVE POSTER
Source: swissvotes.ch, 1979. Image edit: the authors, 2025.



SWITZERLAND TRAVEL POSTER
Source: Redbubble, 2025.



DATA CENTRES TAKING OVER
THE SWISS LANDSCAPE
Source: Redbubble, 2025. Image edit: the authors,
2025

While posters aim to stimulate curiosity and encourage reflection, they also suggest ways of engaging that extend beyond visual communication. In other contexts, growing awareness has manifested as a physical presence, with citizens occupying construction sites to demonstrate their opposition and interrupt the progress of major infrastructure projects. The following image captures such a moment, when public concern is expressed through direct, peaceful action.



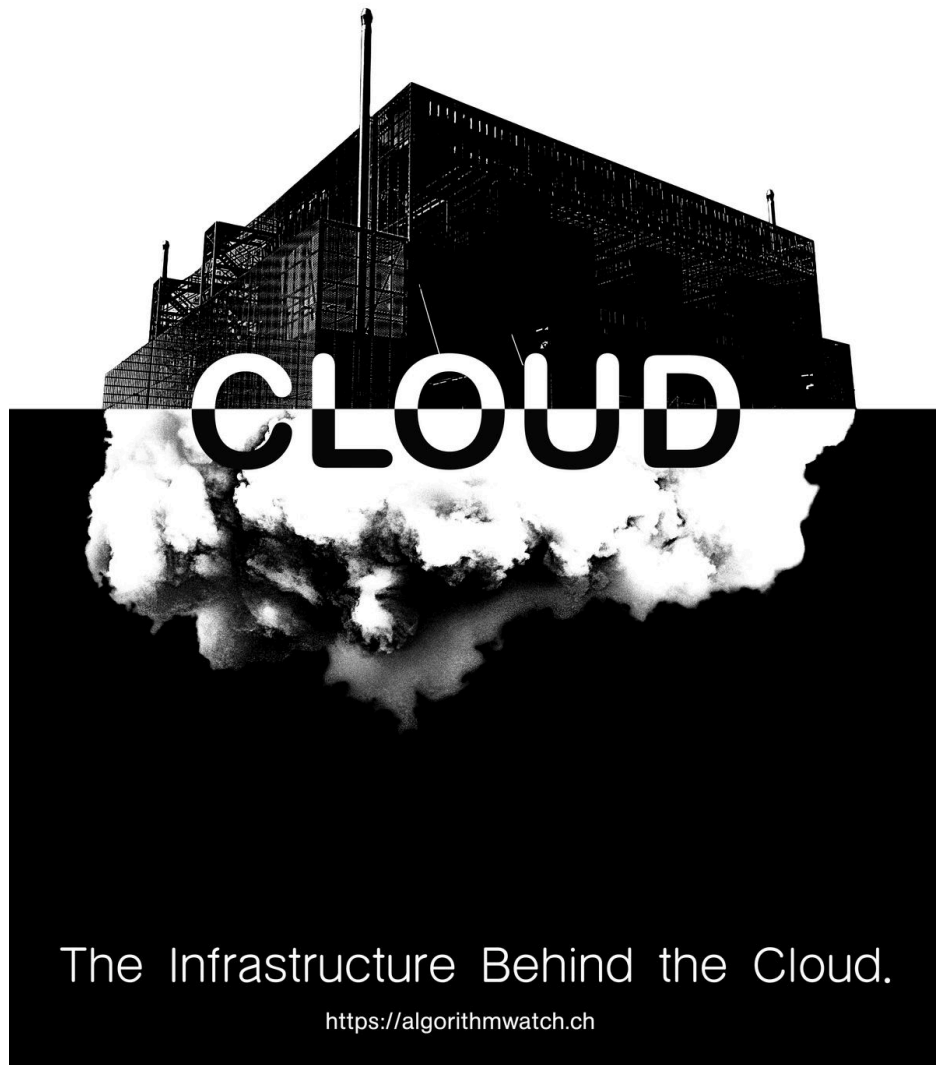
PROTEST BANNER UNFURLING IN VOLKETSWIL
Photograph: n'H, 2021. Collage: the authors, 2025.

Who are the people willing to step into these spaces and voice their concerns? While they are not defined by a single profile, they are brought together by shared concerns about technological acceleration and environmental limits. In recent years, some of these concerns have begun to converge within organised groups that focus specifically on the societal and ecological impacts of AI and data centre infrastructure.

From Research to Public Engagement

In conclusion, our research aimed to contribute to the disclosure of data centre realities in a concrete way. As discussed earlier, this industry is putting increasing pressure on Switzerland's energy demand, but it is actually responding to the needs of our digital society. Most people rely on data storage, cloud services, and AI tools yet remain unaware of where their data is stored—as if it floated in the sky!

Bearing this in mind, we contacted AlgorithmWatch, a non-profit organisation based in Berlin and Zurich that researches data centre policies, transparency, and AI-driven technologies. They provided valuable input into the design of a poster intended to raise public awareness and encourage reflection on the implications of hosting data centres in Switzerland.



THE INFRASTRUCTURE BEHIND THE CLOUD
Photograph: MBA management, 2023. Collage: the authors, 2025.

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Architecture of Territory
Professor Milica Topalović

TEACHING TEAM

Martin Kohlberger
Jakob Walter
Jan Westerheide

Prof. Milica Topalović
ETH Zurich
ONA G41
Neunbrunnenstrasse 50
8093 Zurich
Switzerland
+41 (0)44 633 86 88
www.topalovic.arch.ethz.ch