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The government must set an example: data centers belong at the heart of the energy transition

The discussion about data centers is still too often conducted as if it were about separate buildings that use a lot of power. That is too limited. Data centers are not isolated boxes on the edge of a business park. They are part of a much larger chain: digital infrastructure, electricity grids, heat supply, water use, hardware production, raw materials, software efficiency, spatial planning and public accountability.

That is precisely why the government should not only make rules for data centers, but set an example itself. Not by simply putting stricter requirements on paper, but by showing how it can be done in its own digital infrastructure. The government is a major user of ICT, client, permit provider, purchaser, area director and policymaker. This gives it a unique position. Where market parties often optimize within their own contract, location or business case, only the government can bring parties together across the boundaries of organizations, sectors and interests.

The energy transition does not require more separate optimizations. It asks for chain solutions.

Transparency as a starting point, not an end point

The first condition is transparency. Without reliable data, every discussion about data centers gets stuck in image. The sector says it is efficient. Local residents see large buildings and many power connections. Governments talk about sustainability. But the question is: what does that show?

A modern data center should provide insight into the actual energy consumption, the ratio between IT consumption and building-related consumption, the efficiency of cooling, water consumption, the share of truly sustainable energy, the use of residual heat, the use of batteries and the lifespan of hardware. Not once a year in an abstract report, but structurally, verifiable and comparable.

In doing so, we need to look beyond PUE. PUE says something about the ratio between total energy and IT energy, but not whether the IT itself is used efficiently. A data center with a nice PUE can still run on poorly used servers, inefficient software, oversized infrastructure or hardware that is replaced far too early. Transparency must therefore also include workload efficiency, utilization rate, energy per digital service, energy per transaction, CO_2 impact per workload and the extent to which systems are actually switched off or down when they are not needed.

The government should set the bar in this. Not by demanding from others what it does not measure itself, but by making its own data centers, cloud contracts and ICT tenders fully measurable.

Accountability: from good intentions to provable achievements

Transparency only has value if it leads to accountability. This means that figures must be independently verifiable. The time of non-binding sustainability claims is over. Anyone who says that a data center is green, circular or energy-efficient must be able to demonstrate this.

This certainly applies to public digital infrastructure. Citizens and businesses must be able to trust that the government not only organises its digital systems securely and reliably, but also demonstrably sustainably. Government data, healthcare data, education data, mobility data and safety data all run on physical infrastructure somewhere. That infrastructure uses power, water, hardware, cooling and space. This includes public accountability.

The government should therefore require suppliers to report on uniform KPIs in all relevant ICT and data centre contracts. Think of energy efficiency, water use, CO_2 impact, circularity, residual heat utilization, renewable energy, battery use and hardware lifespan. More importantly, these KPIs must not only be provided by the supplier, but also verifiable.

Anyone who provides public digital services must accept public sustainability accountability.

Energy efficiency: not just cooling, but improving the entire chain

Energy efficiency in data centers is still too often narrowed down to cooling. Of course, cooling is important. Airflows, temperature regimes, liquid cooling, immersion cooling, heat recovery and smart monitoring can make a lot of difference. But real energy efficiency starts earlier in the chain.

The most important question is not only: how efficiently do we cool the servers? The question is also: do these servers have to be on at all? Is the hardware being used properly? Is the software written efficiently? Are workloads running in the right place and at the right time? Can non-time-critical calculations be shifted to times when a lot of renewable energy is available? Is old hardware replaced because it has to be, or because it suits you from an accounting or commercial point of view?

Data centers can play a role in the flexibility of the energy system, but only if the digital chain is designed accordingly. AI training, batch processing, simulations, and certain analysis processes are not always time-critical. In some cases, these can be planned at times when the electricity grid is less burdened or when sustainable generation is available locally. Critical systems, such as healthcare, payment transactions or security, obviously require a different approach. That is precisely why chain management is necessary: not everything can be done flexibly, but much more than is currently happening can be organized.

As a client, the government can make a difference in this. It may require suppliers to not only guarantee availability, but also demonstrate energy performance, workload efficiency, and flexibility.

Water use: not an afterthought in a changing climate

Water use should be an integral part of the data center discussion. Especially in periods of drought, salinization or regional water scarcity, it is not enough to look at electricity alone. Some cooling concepts use little water, others more. Some solutions shift the problem from energy to water. That must become visible.

It is important to distinguish between water extraction, water consumption, drinking water use, industrial water, surface water and indirect water use in the energy chain. One generic WUE figure is useful, but insufficient if the regional context is missing. A litre of water in a wetland area has a different impact than a litre of water in a pressurised region. Here too, measuring is necessary, but interpreting is at least as important.

The government should therefore require data centers and cloud providers to report water use in conjunction with location, cooling technology, season, source and availability. Certainly in the case of public contracts, water use must not disappear in technical annexes.

Refurbishment and circularity: sustainability is also in what you don't buy new

The energy transition is not just about electricity. She is also in charge of materials. Servers, racks, UPS systems, batteries, refrigeration systems, cabling, network equipment and storage media contain raw materials, metals and components that have been extracted, produced, transported and ultimately have to be processed again.

Yet in the data center world, the focus is still too often on new, faster and bigger. This is understandable from a performance and warranty point of view, but not always sustainable. Refurbishment, reuse, life extension and relocation of hardware must be taken much more seriously. Not every server is suitable for every workload, but a lot of hardware can be used longer or differently than is currently the case. Think of reuse for less critical workloads, test environments, education, edge applications or secondary processing capacity.

Infrastructure also deserves attention. Why should complete installations be replaced when parts can be modernized? Why not focus on modular infrastructure that is more adaptable, repairable and reusable? Why not require suppliers to demonstrate the material impact of their solution, including an end-of-life scenario, in tenders?

The government has direct leverage through purchasing power. If public tenders start to seriously value circularity, refurbishment and life extension, the market will follow suit.

Residual heat: from loss item to local value

A data center ultimately converts almost all the electricity used into heat. That heat is often still seen as a residual product. That is a missed opportunity. In a country where homes, offices, swimming pools, greenhouses and industry have to get rid of gas, data center heat can be part of local heat systems.

But residual heat does not work by itself. There must be a heat demand nearby. The temperature must be usable or upgraded with heat pumps. Pipelines, contracts, investments and long-term agreements are needed. A data center cannot organize this alone. Neither does a housing corporation. A municipality often does not do without partners either. A grid operator looks at things from a different perspective. It is precisely here that the government is indispensable as a chain director.

At new data center locations, residual heat should not be an optional option, but a spatial precondition. Not every project will be able to supply heat immediately, but every project should demonstrate how heat utilisation is made possible, which parties are needed and why it is or is not feasible.

The question should not be: can the data center get rid of its heat? The question should be: which local heat chain can we build around this infrastructure?

True green energy: more than certificates

Data centers often claim that they run on green electricity. But green energy is not always the same as additional, locally relevant and simultaneously available renewable energy. Certificates can be administratively correct, while the physical reality is more complex. At times without wind or sun, the system still runs on the mix that is available. That is why we need to take a closer look at what "green" means.

For data centers that have a large and constant demand for electricity, the bar should be higher. Not just annual greening on paper, but as much as possible linked to additional sustainable generation, long-term purchase contracts, local energy projects and, where possible, time-bound matching between consumption and generation. A data center that claims to be green must also show what it does at times when sustainable production is low and the grid load is high.

Here again lies a task for the government. Public cloud and data center contracts should not only ask about green electricity, but about the quality of that green energy: origin, additionality, time profile, location, contract type and contribution to new sustainable generation.

Battery storage: useful, but not an excuse

Batteries can play an important role. They can smooth out peaks, make better use of self-generation, support emergency power, enable congestion management and add flexibility. This is interesting for data centers, because reliability and energy security have always been central.

But battery storage is not a panacea. Poorly controlled batteries can actually exacerbate grid congestion. In addition, batteries themselves have a material impact. Lithium, cobalt and other critical raw materials require careful use, recycling, safety and transparency.

That is why batteries must be part of a broader energy system, not just the business case of one party. A battery at a data center can have value for the data center itself, but possibly also for a business park, charging plaza, solar park, heat supply or industrial neighbor. Then system value is created. That system value only arises if parties work together and share data.

Here too, the government must focus on chain value instead of individual optimization.

From data center to energy hub

The core of the solution is that we need to position data centers differently. Not as isolated large-scale consumers, but as nodes in local energy and digital ecosystems. A modern data center can be part of an energy hub in which electricity, heat, cooling, storage, emergency power, sustainable generation, digital workloads and local users are smartly coordinated.

This requires new coalitions. Data center operators, cloud providers, municipalities, provinces, network operators, heat companies, housing corporations, industry, water boards, hardware suppliers, software parties and financiers must sit down earlier and more structurally. Not only when the permit application is ready, but during the area development itself.
The government is the only party that can credibly organize this table. Not because the government has to do everything itself, but because it is the only one that can connect the public interest, spatial planning, energy infrastructure, licensing and purchasing power.

The government as a launching customer

The government can start tomorrow by organizing its own demand differently. Public cloud contracts, data center contracts and ICT tenders should aim for measurable sustainability. Not as an appendix, but as an award criterion. Not as an ambition, but as a performance requirement.
This means, among other things:

- mandatory reporting on energy, water, CO_2, residual heat, circularity and hardware lifespan;
- independent verification of sustainability data;
- valuation of refurbishment and modular infrastructure;
- requirements for real green energy and additional generation;
- assessment of battery storage by system value;
- mandatory research into residual heat utilisation;
- transparency on workload efficiency;
- cooperation with local energy and heat partners;
- and a clear link between digital sovereignty and sustainable infrastructure.

If the government sets these requirements for its own digital chain, a new market standard will be created. Then sustainability will not become a marketing claim, but a condition for being able to provide public digital infrastructure.

Conclusion: without chain management, sustainability will remain fragmented

The data center discussion deserves a more mature approach. It's not about for or against data centers. The digital society needs infrastructure. AI, healthcare, security, education, mobility, government and business cannot do without reliable computing power and data storage. But the question is under what conditions that infrastructure grows.
Data centers should no longer be judged solely on availability, scalability, and cost. They should be assessed on their contribution to the energy system, their water impact, their

use of materials, their transparency, their waste heat potential, their flexibility and their social value.

This requires chain thinking. And chain thinking does not arise automatically in a market that is set up for separate contracts, separate permits and individual business cases. The government must therefore set an example: as a client, as a buyer, as a permit provider, as an area director and as the manager of public digital infrastructure.

Not by slowing down the market, but by better organizing the market.

The energy transition requires data centers that not only perform digitally, but also demonstrably contribute to a smarter, cleaner and more reliable energy system. This requires transparency, accountability and cooperation. And that is exactly where the government should start: with itself.