

A photograph of the Aurora Borealis (Northern Lights) in a dark, starry sky. The aurora displays vibrant green and blue-green streaks and curtains. Below the sky, a dark, flat landscape is visible, possibly a tundra or coastal plain, with some snow patches. In the distance, snow-capped mountains or hills are silhouetted against the horizon.

Nordics as a DC location, an **American** point of view

Wayne Allen

October 11, 2023

who are we?

The leading pan Nordic operator of data center infrastructure

- 3 operational sites in Iceland
- 2 sites in Finland, 1 under construction
- 1 large enterprise facility in Stockholm
- Expansion options in all Nordic regions
- Operational since 2009
- Owned by Partners Group since 2022

More compute for a better world



Best use of HPC in
Financial Services



Tech Capital
Awards for Best
Location - Iceland



ICE01



ICE02



ICE03



SWE01



FIN01

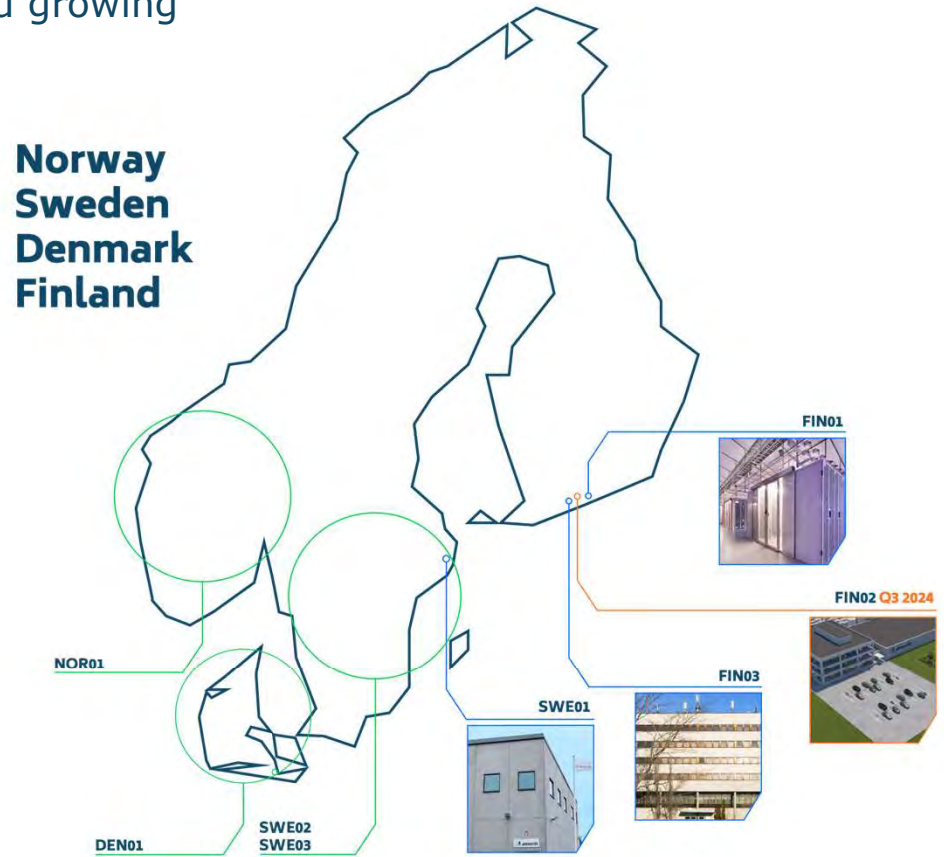
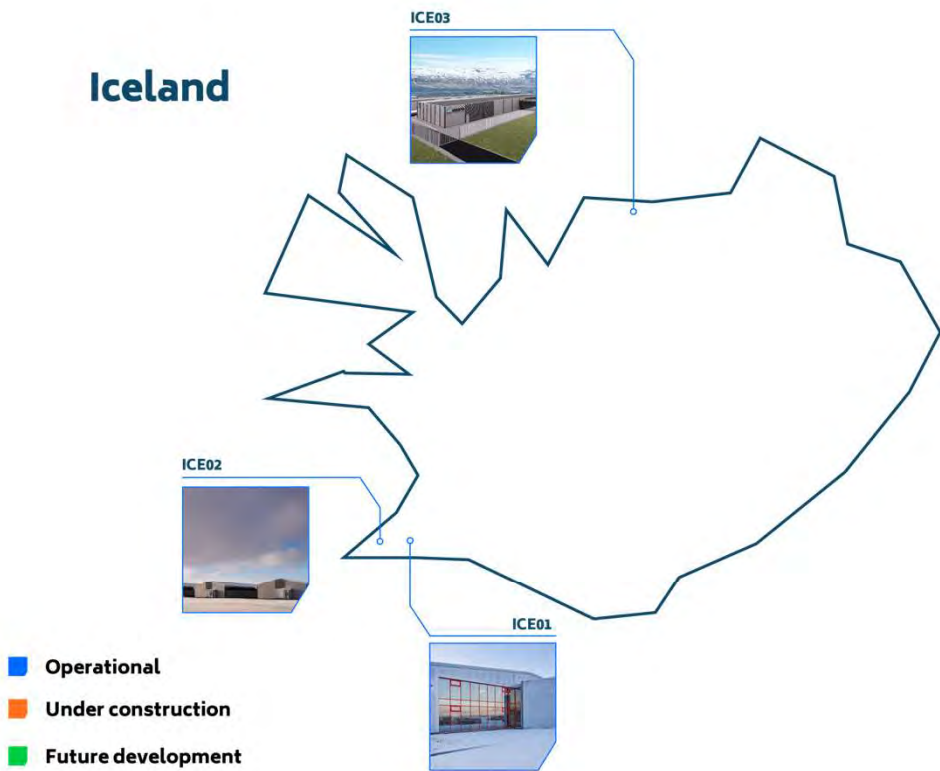


FIN03



locations

6 operational data centers – 1 under construction.... and growing



Dia 3

TP0

ICE03 is now blue

Tracey Pewtner; 2023-08-04T07:46:36.617

three locations in Finland



FIN01

FIN02

FIN03

Facility Location

Helsinki

Espoo

Espoo

Power capacity

1.6 MW

11-35 MW

1.6 MW

Gross Space / Ownership

938 sqm

2-23.000 sqm

864 sqm

Employees & Contractors

6+

6+



6+



Best digital infrastructure in the world



atNorth in Numbers

operational data centers	7 	% renewable energy sources*	100 	total employees	100+ 
New sites under construction	2 	target PUE	sub 1.15 	%female/male	26 
MW power capacity	120+ 	customer satisfaction	4.5/5 	nationalities	15 
SQM data center space	47,000 	employee satisfaction	7.8/10 	customers	100+ 

* our facilities have access to these resources



our values

empowering

We **enable** our customers to create efficient and sustainable solutions

We **encourage** our people to seek knowledge and embrace productivity

We **ask questions** and challenge the status quo!

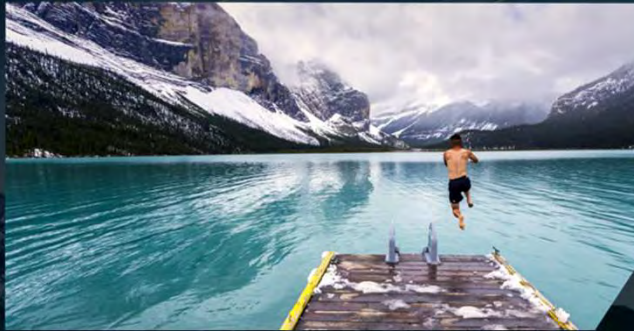


dependable

We are **honest** and **trustworthy** with our customers and each other

We **care** about our environment, co-workers and customers

We are **proactive** and **agile** in new or unforeseen situations



flexible

We stay **open** and **transparent** in all our communication and adapt to customer needs

We are experts that **push** the limits through curiosity

We **innovate** and are solution oriented



How do United States' firms view the Nordics as a datacenter location?



US conditions leading to Nordic attractiveness

- New Workloads-generative AI, Chip service bureaus
- Almost no existing available built wholesale datacenter capacity-supply chain issues and insatiable demand
- Dev ops workloads, -customized resiliency, blockchain restarts possible, less latency sensitive
- ESG requirements-sensitivity, corporate carbon goals
- Efficiency and power availability, pricing
- Water shortages



why the Nordics?

- 1. Cost efficiency** – A mild climate minimizes the need for refrigeration-based cooling
- 2. Europe's lowest energy price** – Offering consistently low energy prices thanks in part to the surplus of renewable power generated in the region
- 3. Connectivity** – An expanding network of more than 25 high speed, sub-sea fiber optic routes connected to major European & north American markets
- 4. Sustainable energy** – The region produces a surplus of energy, made available to global data center operators as a green alternative to carbon-producing sources.
- 5. Towards carbon neutrality** – Two thirds of electricity produced in the region comes from renewable sources, and the sector is on track to become fully carbon neutral by 2050





why the Nordics?

6. Using recovered heat – e.g. at North Swedish campus SWE01 is part of the city's Open District Heating program – repurposing waste heat to warm homes.

7. Highly scalable facilities – Government support for the Nordic data center industry has led to the creation of large campuses with additional land available for development

8. Ease of doing business – Governments of Nordic countries have put in place legislation and initiatives designed to assist global organisations

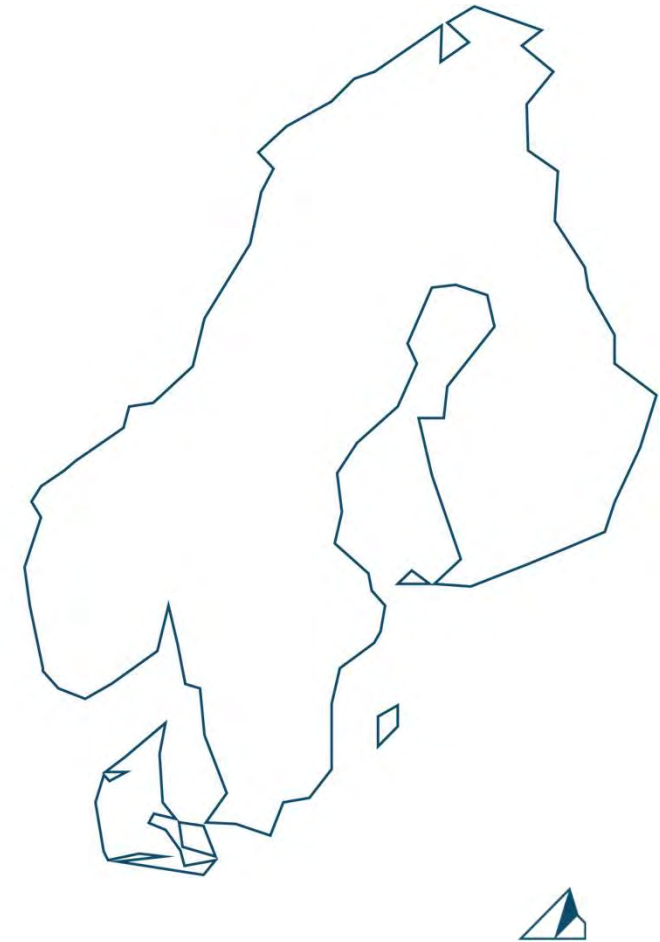
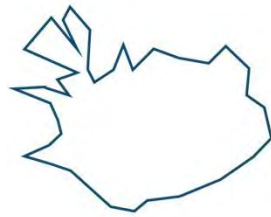
9. Experienced workforce – The region offers an abundance of professional IT personnel

10. Ease of access – Most of our facilities are located on the outskirts of metropolitan areas



why US companies ❤️ the Nordics

- Energy from **renewable** sources
- Ample **connectivity**
- **Sustainable** initiatives
- Circular economy principles
- Europe's **lowest energy prices**
- Ideal climate for free **natural cooling**
- Ease of doing business
- Low risk region
- Solid power **grid**
- Stable political economies
- District Heating









Carbon

- Decarbonizing platform
- Nordics lower than FLAPD (traditional European markets)
- Frankfurt 391 grams/kwh,
Amsterdam 378 grams/kwh,
London 275 grams/kwh,
Dublin 321 grams/kwh
- Iceland 10.5 grams/kwh



Your NetZero Partners combines decarbonization and great TCO

	Germany	UK	Ireland	France	Iceland	Sweden
PUE average	1.75	1.75	1.5	1.8	1.2	1.2
Total Power including Cooling	175	175	150	180	120	120
Annual GWh	1.533	1.533	1.314	1.5768	1.0512	1.0512
Power cost €/Kwh	0.21 €	0.40 €	0.29 €	0.23 €	0.07 €*	0.12 €
Annual Power Cost	321,930.00 €	613,200.00 €	381,060.00 €	362,664.00 €	73,584.00 €	126,144.00 €
cO2 grams per kWh	274	253	433	79	10.5	28
Annual Carbon Footprint (Tons)	420.042	387.849	568.962	124.5672	11.0376	29.4336
Type Energy	Mixed	Mixed	Fossil	Nuclear/Mixed	Renewable	Renewable
 Iceland Power Cost Savings	-77.1%	-88.0%	-80.7%	-79.7%		
 Iceland Energy Used	-31.4%	-31.4%	-20.0%	-33.3%		
 Iceland Carbon Reduction	-97.4%	-97.2%	-98.1%	-91.1%		
 Sweden Power Cost Savings	-60.8%	-79.4%	-66.9%	-65.2%		
 Sweden Energy Used	-31.4%	-31.4%	-20.0%	-33.3%		
 Sweden Carbon Reduction	-93.0%	-92.4%	-94.8%	-76.4%		















*Power cost for Iceland is indicative based on prices from Eurostat



sustainability policy

goals & objectives

Based on our company values, atNorth have outlined the following goals to guide the company’s sustainability agenda for the next five years. We will continually report against these targets and seek to align our measures with global standards including the United Nations Sustainable Development Goals (UN SDGs).

Goals	Objectives	Target	UN SDGs
Climate	1 Reduce our climate impact Measure and report greenhouse gas emissions to cover scope 1, 2 and 3 ISO14001: Environmental Management System certification for all sites Identify key opportunities to reduce GHGs, and a roadmap to implement	by 2023 2024 2023	
	2 Maximize energy efficiency Optimize PUE at all sites Obtain certified status of ISO 50001: 2018 Energy Management Systems Measure and report on renewable energy ratio used in our operations in compliance with ISO 30134	ongoing by 2028 2024	 
Circularity	3 Circularity in our operations Ensure all facilities have effective recycling systems to meet our 100% recycling goal for IT equipment and 90% for other waste Consider more sustainable alternatives for all materials used Assess every atNorth facility for heat reuse suitability. Where deemed suitable, integrate into the heat reuse scheme Assess building and operational processes/materials to minimize the total lifecycle environmental impact of our facilities	2025 by 2028 by 2028 ongoing	 
Community	4 Safe workplace and employee welfare Obtain certified status of ISO 45001: Management Systems of Occupational Health and Safety (OH&S) Strive to improve diversity mix in all departments Maintain Equal Pay Conformity within 1% differential Promote health improving activities/opportunities for employees Enhance training and development opportunities to increase skills and industry knowledge and provide a pathway for employee progression	2024 ongoing ongoing annually ongoing	  
	5 Empowering the community Offer internships to students in local communities Strengthen our charitable donation policy with a focus on local communities Include local companies in work opportunities within our facilities	2025 annually annually	  
Integrity	6 Strong Risk Management framework Maintain ISO 27001 certification and integrate into all new facilities Define the sustainability risk factors and create appropriate action plan Implement a climate risk assessment in risk analysis Sustainability data and framework certified by a third party	ongoing 2023 2025 annually	 
	7 High ethical standards and anticorruption procedures Ensure a strong Code of Conduct policy is in place Improve the frequency and subject matter of supplier evaluations to ensure compatibility to our values	2023 2025	



BNP Paribas

“By using only renewable energy sources and decreasing our carbon footprint 85%, BNP Paribas is realizing its dual mission to reduce its environmental impact and better serve our customers.

Ricardo Jantarada

Head of Telecom & Datacenter
at BNP Paribas



Business results

- Reduced energy usage by 50%
- Decreased CO2 (carbon dioxide) output by 85%
- Transitioned to 100% renewable energy
- Increased power efficiency at higher compute density
- Lowered TCO (total cost of ownership)
- Adopted “future-proof,” environmentally responsible HPC



Green means cost-efficiency:

- 50% less energy
- The financial services industry is transforming rapidly as HPC ushers in novel capabilities.
- HPC is a tool that can analyze massive amounts of data to extract insights, expand services for customers, and mitigate security threats.



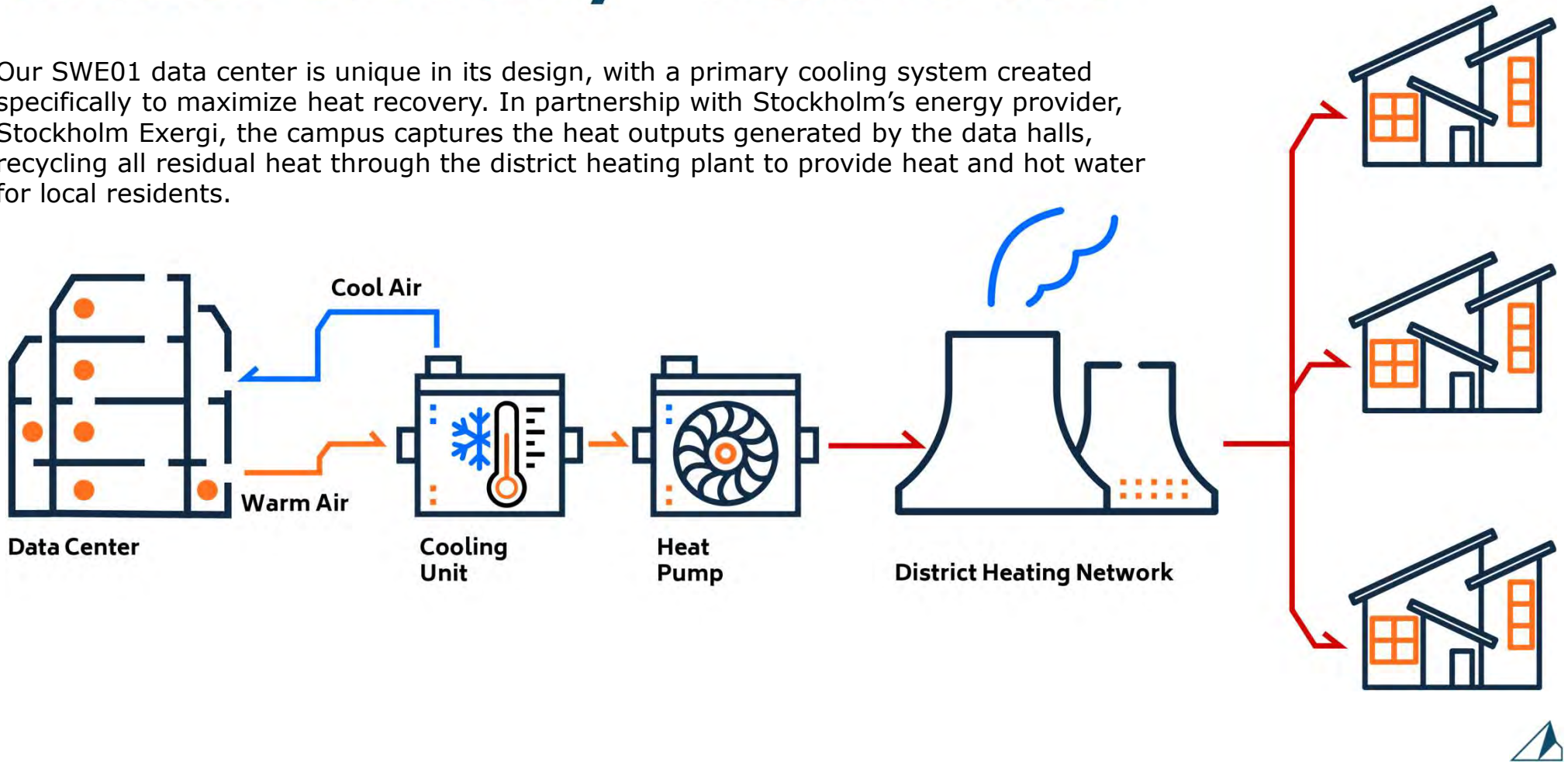


our solutions



circular economy - heat re-use

Our SWE01 data center is unique in its design, with a primary cooling system created specifically to maximize heat recovery. In partnership with Stockholm's energy provider, Stockholm Exergi, the campus captures the heat outputs generated by the data halls, recycling all residual heat through the district heating plant to provide heat and hot water for local residents.



advanced cooling technology

Our sites are ready for **Direct Liquid Cooling**, which cools the IT load more efficiently and yields:-

- ✓ higher rack density
- ✓ greater control over the heat reuse process
- ✓ reduced power usage
- ✓ advanced performance

CoolIT Systems technology uses the thermal conductivity of liquid to provide dense, concentrated cooling to targeted areas. Our customers achieve improved rack densities without having to pay for space they do not need.





why the Nordics?
It's cool!

