On our way to be carbon neutral in 2030

NorthC aims to operate completely carbon neutral by 2030. We do this through our sustainable pillars:

- ✓ **Green hydrogen**
- ✓ **100% green energy**
- ✓ **Modular construction**
- ✓ **Optimal use of waste heat**
- ✓ **Artificial Intelligence (A.I.)**

OUR INITIATIVES →

Our goal for 2030: To be the most sustainable data center

- **Mainly hydrogen** backup
- **PUE** < 1.2
- **Carbon neutral**

In addition, by 2030 we will use

- ✓ **100%** green energy
- ✓ **A.I.-optimalisation** in all of our data halls
- ✓ **Residual heat** exchange in all our locations

Our starting point in 2019

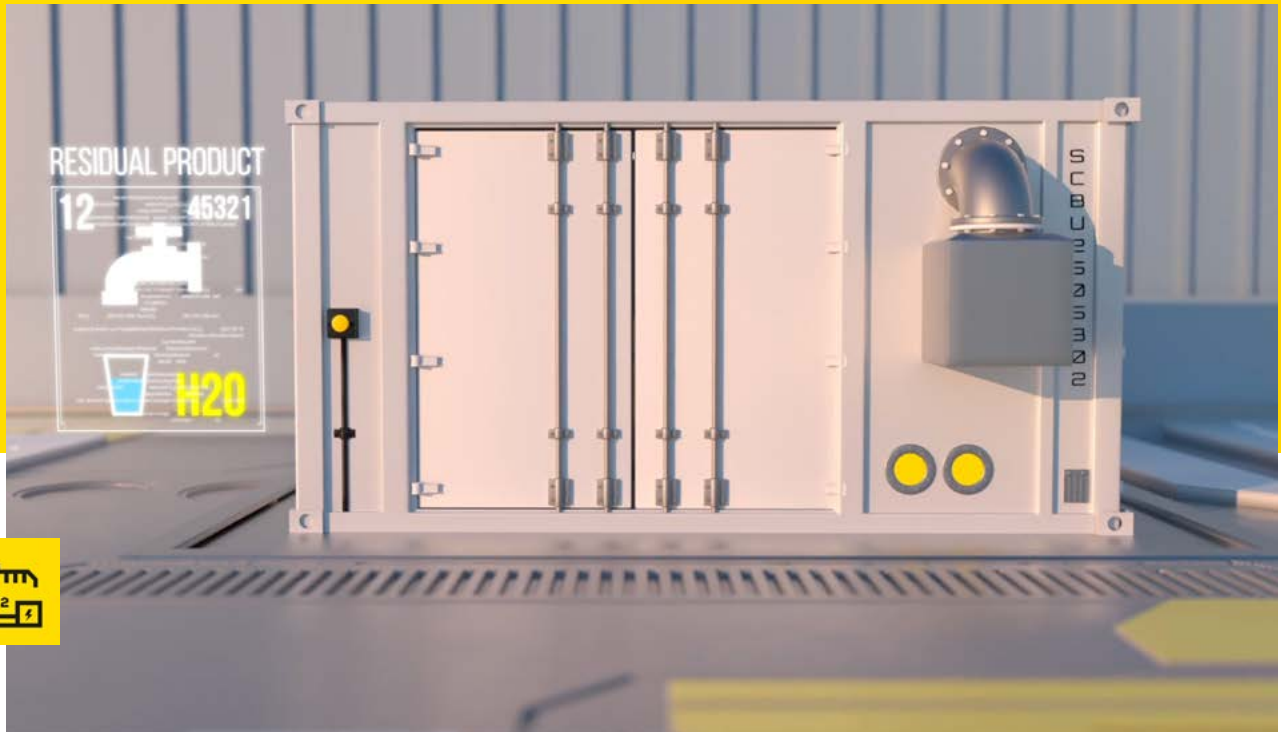
- **100% diesel** backup
- **PUE** of 1.54
- Regular **carbon emission**

In addition, in 2019 we already used

- ✓ 85% green energy
- ✓ Blind plates in our racks
- ✓ Warm and cold corridors

GREEN HYDROGEN

Europe's first data center with a backup system powered by green hydrogen.



Increasingly independent in our power supply

Our data center in Groningen is one of the first data centers in the world to have its emergency power supply completely carbon neutral by using green hydrogen. Data centers generally use diesel to power the emergency power supply. NorthC has the ambition to set up all its emergency power facilities as carbon neutral as possible in the coming years. This can be done, for example, through a mix of green energy, green hydrogen, wind and solar. It doesn't stop there. We are also looking into whether we will eventually be able to produce our own green hydrogen thanks to smart use of our own generated solar and wind energy. Then we will no longer be dependent on other parties for our primary and emergency power supply.

WATCH THE VIDEO →

100% GREEN ENERGY

We source power generated 100% by solar, water and wind.

Sustainably generated and futureproof

We already use 100% green energy to run our data centers. In the coming years, we want to focus even more on self-sufficient facilities and we are therefore also investing in generating our own renewable energy.

Minimal loss of energy in our green chain

We are exploring the possibilities that wind, solar and green hydrogen have to offer, so that in the future we will need less power from the grid and be able to generate more power ourselves. If we can generate our own power in the future, this will give us the space to produce our own green hydrogen, which we can use to power our new emergency power facilities. This ensures a green chain, where not a bit of energy goes to waste and all resources are used as efficiently as possible.

MODULAR CONSTRUCTION

Modular construction

Activation when required

All of our newly built data centers will be modular. This means that we make assets operational only when they are needed. This ensures much less energy consumption. Things like cooling, power and monitoring only become active when they are really needed. The modularity is also reflected in the construction of the racks.

Empty spaces are filled with blind plates. This ensures that cold air does not flow away unnecessarily.
We also consider sensors that activate lighting only when necessary, the continuous monitoring of possible areas for improvement and the replacement of assets for more efficient ones to be part of our duty.

OPTIMAL USE OF RESIDUAL HEAT

Residual heat

Beneficial use of every residual energy

Any residual energy that remains we try to reuse in a beneficial way. In Eindhoven, for example, we are connected to the heat network of the High Tech Campus and exchange cold and heat with other companies on the campus grounds.

In Aalsmeer, our residual heat heats a nursery, and a swimming pool. In Switzerland, we use the residual heat from our data centers in an office complex and for heating rooms in the data center itself.

Our data centers are prepared for residual heat sharing by default

The largest residual heat project we have participated in to date is Rotterdam Schiebroek. In the coming years, up to more than 10,000 households there will be partly heated by the residual heat we supply from our data center in Rotterdam Zestienhoven. All our new data centers are prepared for heat sharing by default. As soon as a local initiative arises, we are ready to share our residual heat.

ARTIFICIAL INTELLIGENCE (A.I.)

Optimizing our systems with A.I.

The most important aspect where A.I. could soon start making a difference is the energy efficiency of data centers. Consider cooling, airflow and power supply, for example.
The computing, storage and networking equipment in a data center generates a lot of heat, which must be dissipated to prevent the temperature from getting too high. A.I. is able to analyze the data from temperature and humidity sensors in the data center and, from that, optimize the operations of cooling systems. This way we can further reduce the energy consumption of a data center.

We have been running a pilot in our data center in Aalsmeer since 2022 where we have already achieved more than a 4 percent gain. This was in an already optimized environment. The gains we can achieve in less efficiently designed environments are therefore many times greater.

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