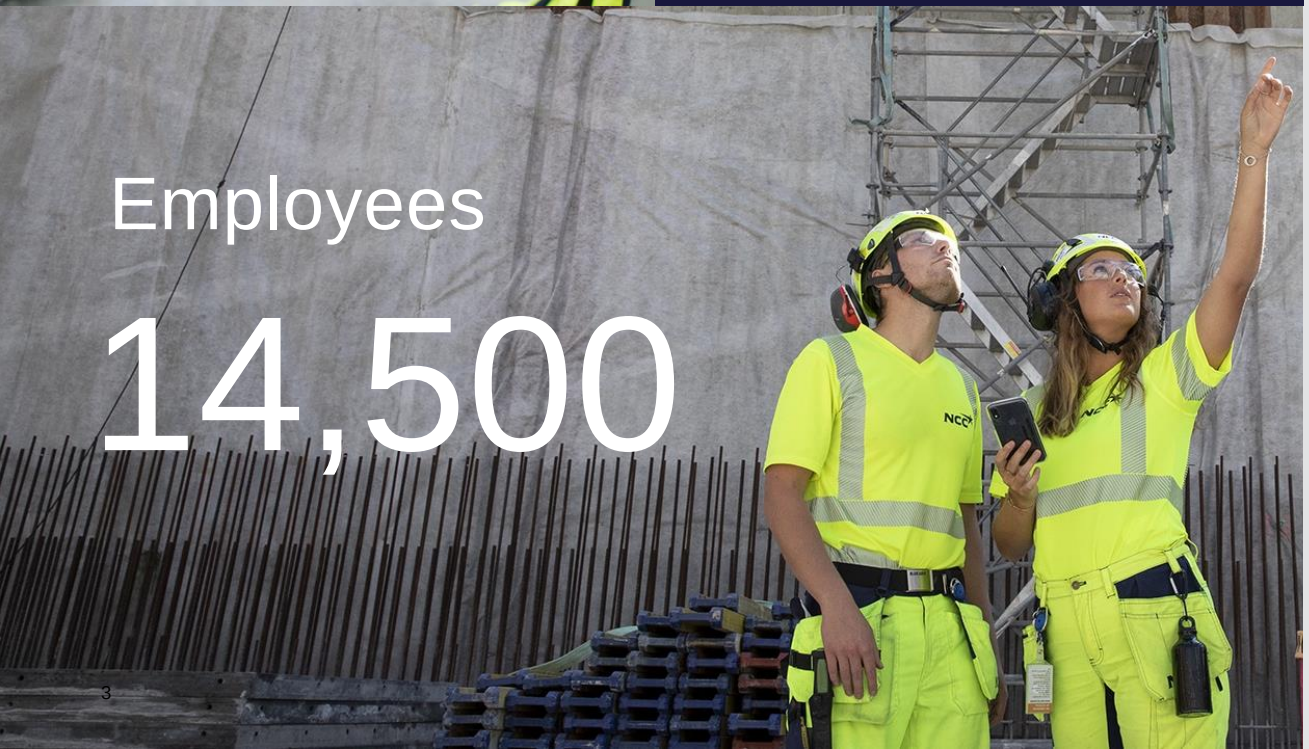
NCC for your Data Center in Finland

This is NCC

Sales EUR

5,1Mrd



Employees

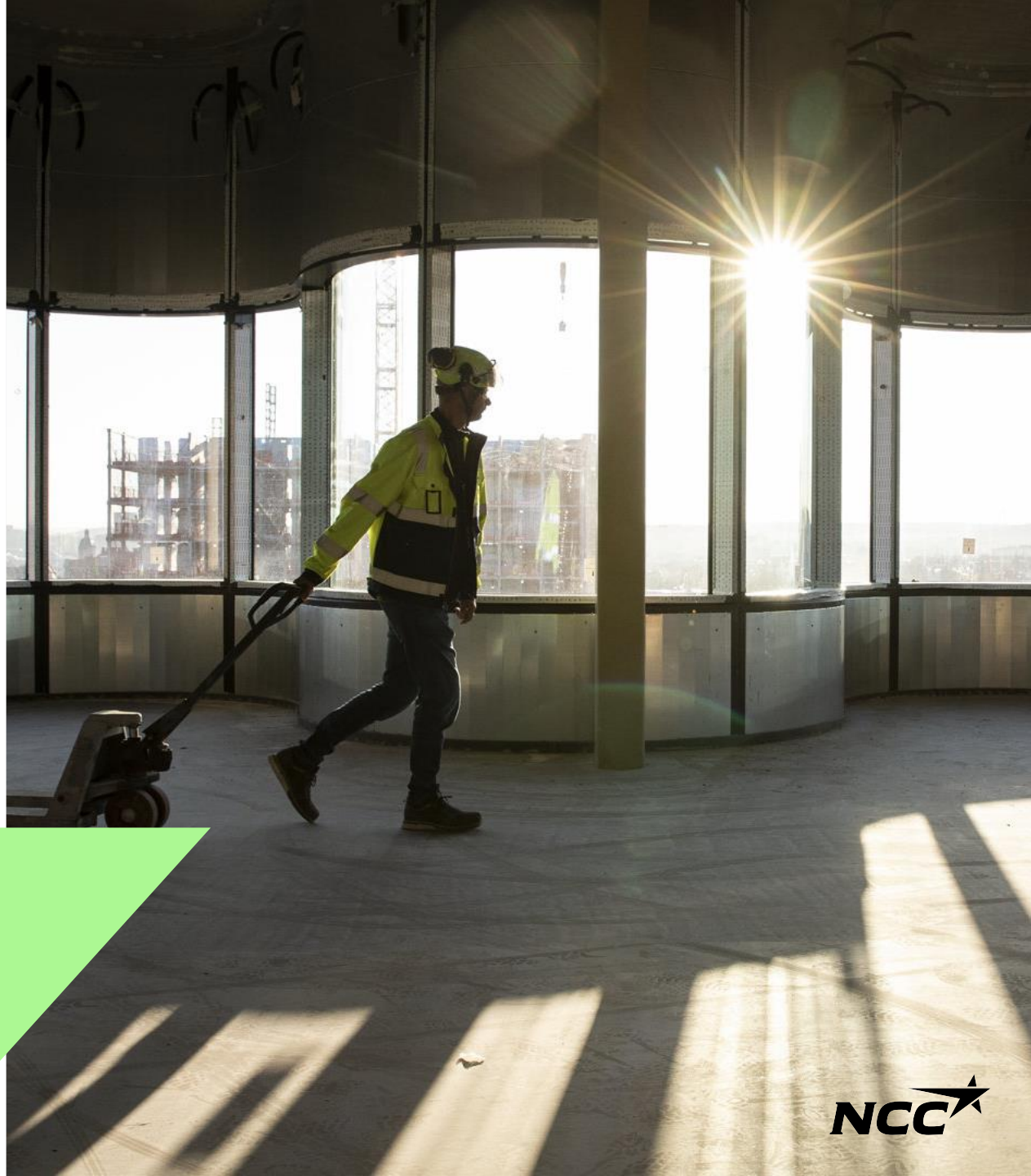
14,500

NCC projects

Infrastructure	Residential 	Offices	Industrial operation
Healthcare buildings	Schools	Leisure and sport facilities	Public buildings 

Our Purpose

Take the customer through the construction process to a positive end result for all stakeholders



Facebook`s first Data Center in Sweden

- Completed by NCC in 2013
- Data Center is 28,000 m^2
- Certified as LEED Gold level
- Construction time <1,5 year

Facebook´s Data Center, Sweden

Finland is a cool country

NCC x Business Finland

What Finland Can Offer

Excellent Reach of a Wide Market Space

- Integral part of digital Central Europe and a gateway to Asia
- The submarine cable from Finland to Germany interconnects Central Europe to Finland at below 20 ms (up to 144 Tbit/s capacity)
- The Arctic Connect through the North-East Passage will make Finland's location between Europe, Asia and North America strategic

Low Cost of Operation

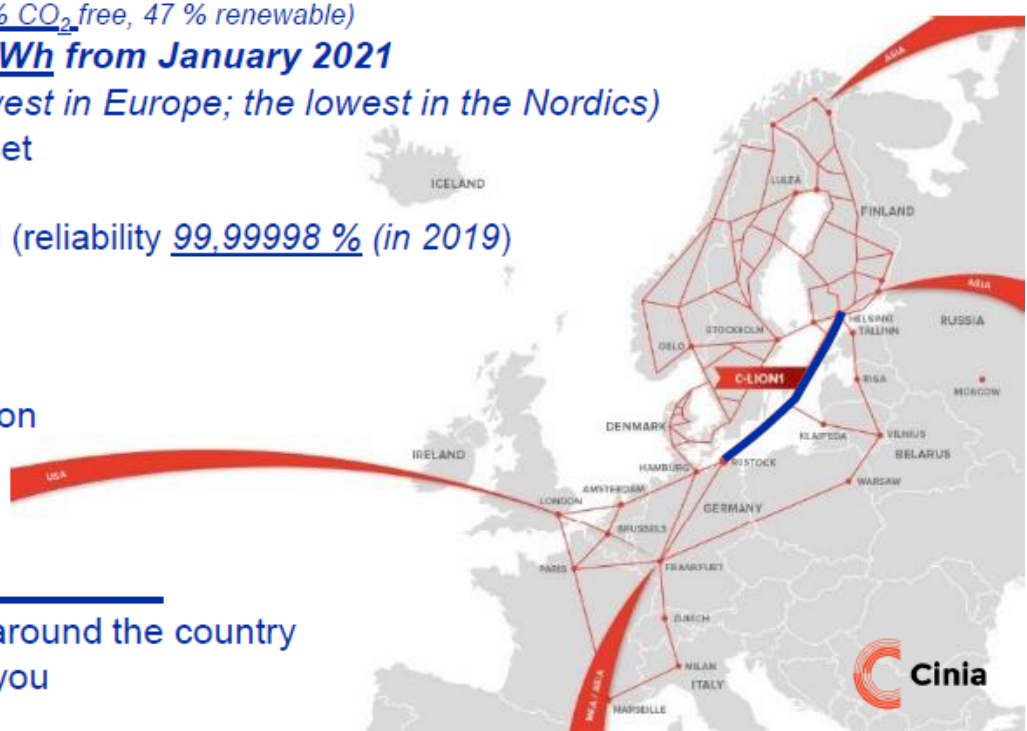
- Very low and stable cost of electricity
  - Lowest total cost of electricity in the Nordics and second lowest in the EU
  - Good availability of green energy *(60 % CO_2 free, 47 % renewable)*
- **Electricity tax reduced to the *0.5 € / MWh* from January 2021**
- Corporate tax rate 20 % *(one of the lowest in Europe; the lowest in the Nordics)*
- Recovered (waste) heat is a sellable asset
- Good availability of land at very low cost
- Extremely reliable nationwide power grid (reliability *99,99998 %* *(in 2019)*

Leader in Data Privacy

- Stable and transparent legislation
- Constitution guarantees the right of privacy for all forms of information
- Strong cyber security cluster (up to 100 companies)

Speed to Market

- Dozens of construction ready sites all-around the country
- Teams of skilled experts ready to help you



BUSINESS FINLAND

Cinia

Finland as a Member of the Global Digital Services Ecosystem

Google

2009 Google purchased the Summa Paper Mill in Hamina and converted that into a state-of-the-art data center. With further extensions between 2013-2016 the total capacity estimate reaches beyond 100 MW. In 2019 Google disclosed that they will invest 1,2 bn € to expansion, which will double the capacity.

Yandex

Russian search engine company Yandex released its decision to locate their first international data center in Mäntsälä in the spring of 2013. The first 10 MW phase became operational in 2014 with total capacity of 40 MW in the near future. In 2020 Yandex completed the second phase bringing total capacity to 20 MW.

Hetzner Online

In 2015 German based Hetzner Online released its investment into C-Lion (Baltic subsea cable), and started building a new data center in Tuusula in the spring of 2016. Estimated total capacity is 20 MW. In 2019 Hetzner had finalized three data centers and started to build three more.

Telia Company

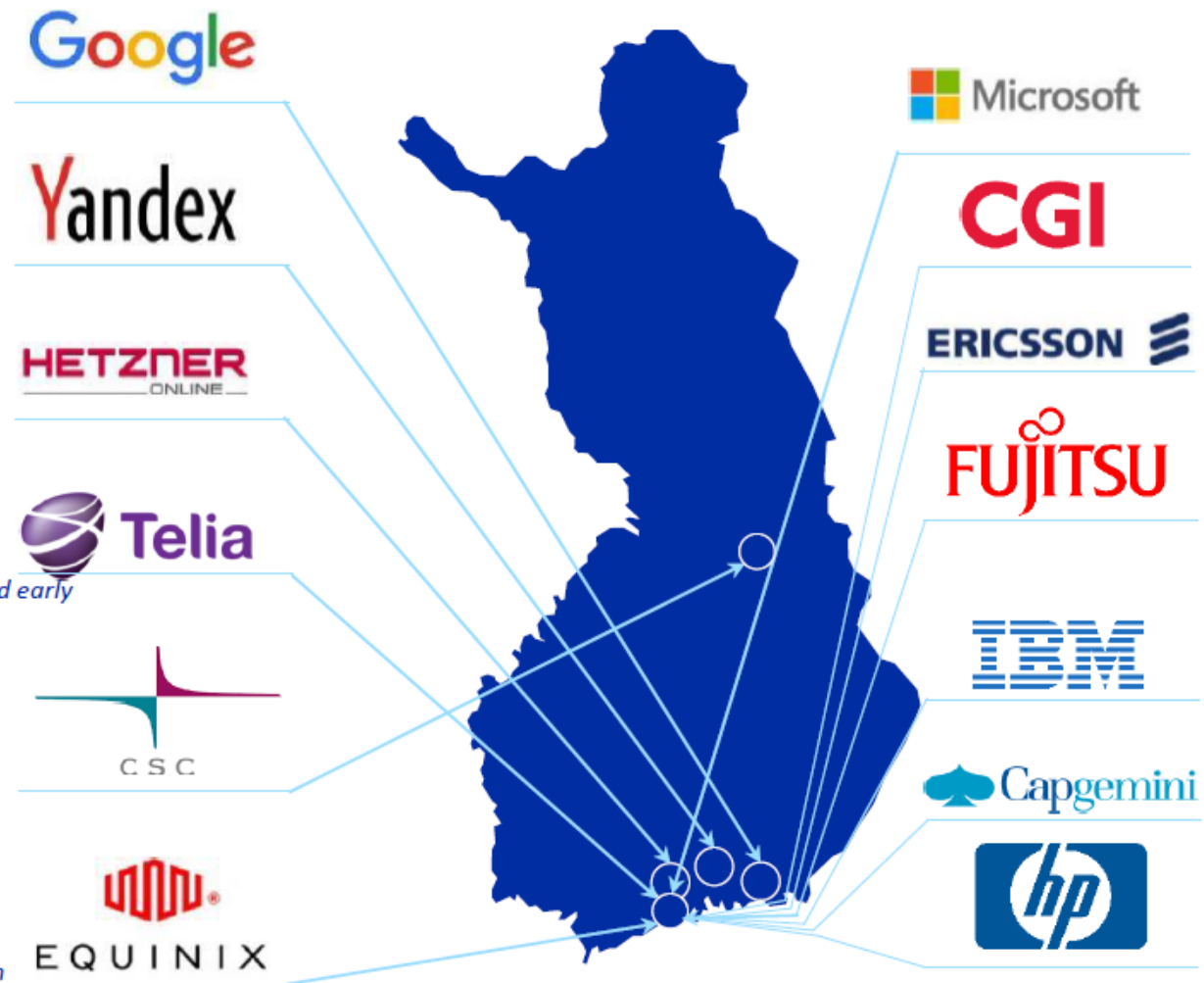
In 2015 Telia released plans to establish a multitenant data center in Helsinki. Construction works started early 2016 and the first phase was operational in 2018. Total estimated capacity is 30 MW.

CSC – EuroHPC

In June 2019 The EuroHPC Joint Undertaking supported by The EU decided to place the EuroHPC pre-exascale supercomputer to Finland. Total value of the investment is 207 M€. The countries involved are Finland, Belgium, Czech Republic, Denmark, Norway, Poland, Sweden and Switzerland. Discussions with Estonia and the Netherlands.

Equinix

Equinix continues to expand data center capacity in Finland. Booming domestic and international demand, and the dynamic ecosystem are driving the growth, ever since the company entered the Finnish market in 2012. Estimated total capacity of their six datacenters is about 20 MW. In 2019 Equinix opened its seventh datacenter and steady expansion continues ever since.

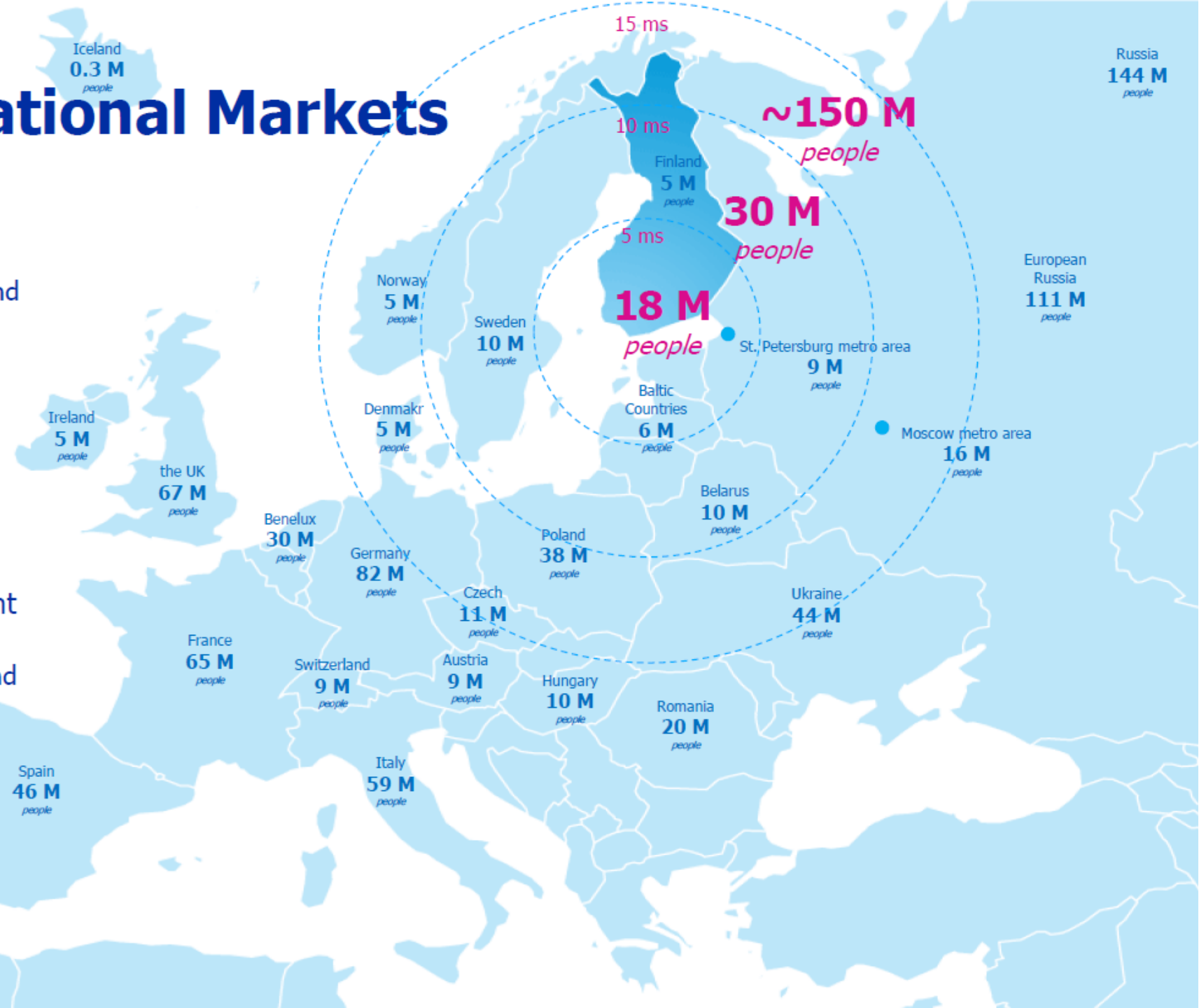


BUSINESS FINLAND

Reach of International Markets

- Excellent reach of international markets:
  - All 30+ million people in the Nordic and Baltic countries
  - Well over 200 million people of Northeastern Europe easily reachable
  - Population of about 165 million in Central Europe in just 20 ms of RTD away

- Today **80 %** of data traffic between east and west of the Eurasian continent goes through Finland
  - Finland's location between the east and west is **strategic**



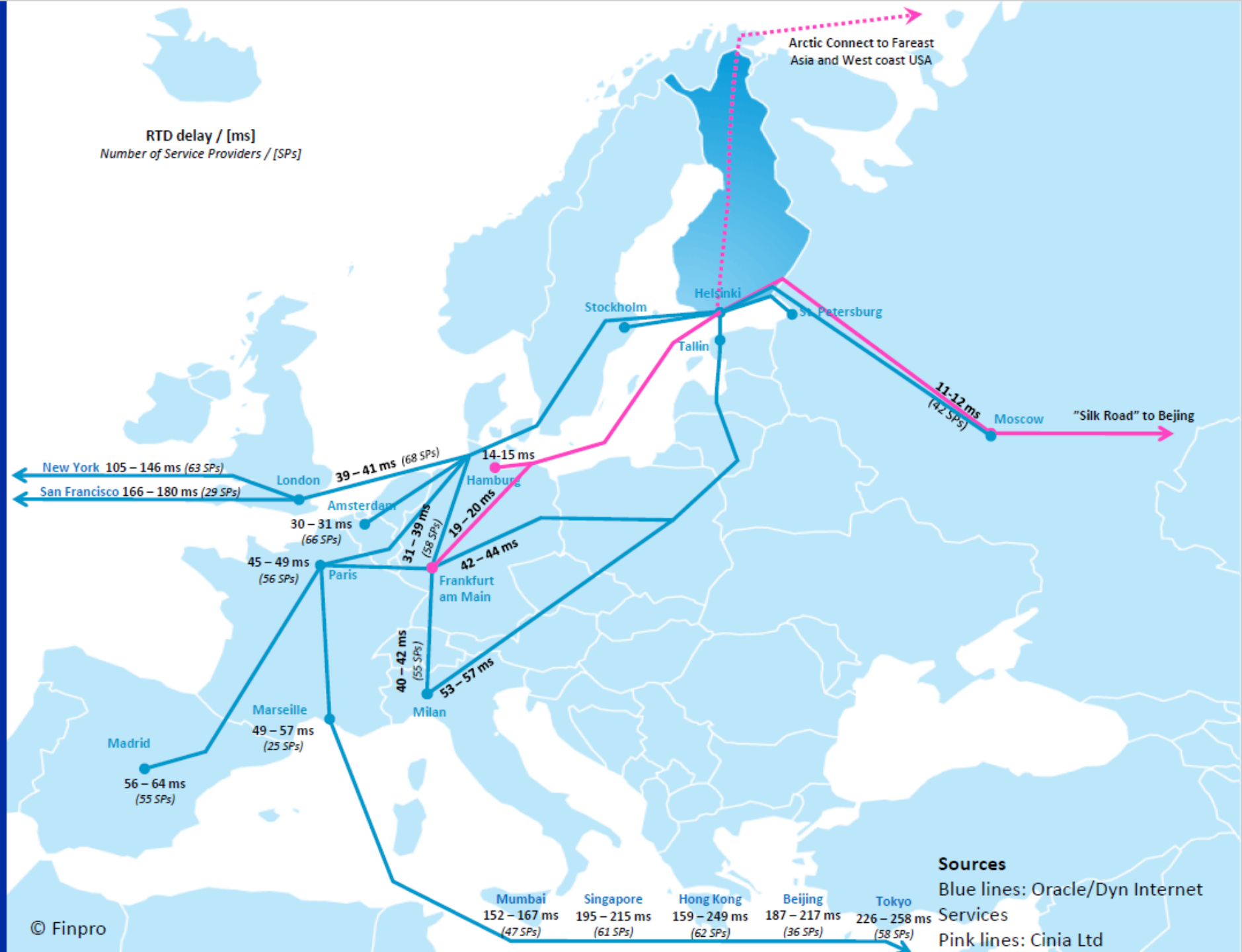
BUSINESS FINLAND

C-Lion subsea cable

Cinia

- 8 fiber-pairs provide the total capacity of **144 Tbit/s**
  - Record breaking capacity of *18 Tbit/s* per fiber pair
- From Helsinki, Finland to Rostock, Germany with backhaul to Frankfurt am Main and Hamburg
- RTD from Helsinki to
  - *Hamburg: 14.2 ms*
  - *Frankfurt: 19.7 ms*
  - *Amsterdam: 19.0 ms*
  - *London: 23.9 ms*
- Potential further connections: the Baltics, the UK, Benelux and France, Eastern Europe, Russia

Other carrier neutral, cloud neutral and system integrator neutral interconnection services and private connections available

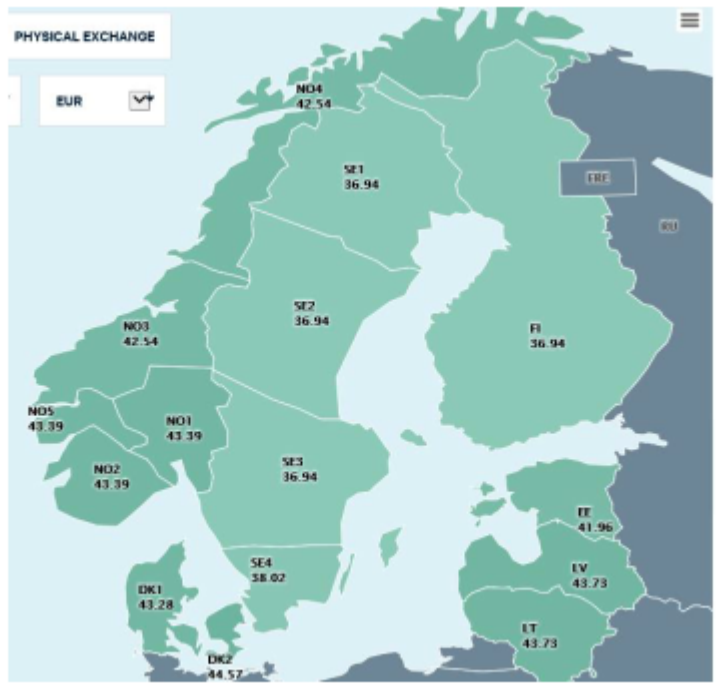


Formation of the Total Cost of Electricity

- The price of electricity is determined *hourly* based on the balance of demand and supply in the common Nordic and Baltic wholesale electricity market – the **Nord Pool**.
- The system price is the hourly calculated average price for whole Nord Pool area, and can be used for trading in all different areas. Area price can be different, due to differences in supply and demand, and periodic congestion of power flows between different areas.
  - Good to know: Finland is a ***single price area*** while Denmark, Norway and Sweden have multiple price areas. ***Price fluctuations*** are higher in Norway and Sweden due to their heavy reliance on hydro power while in Finland the wider mix of power production types is more balanced and evenly distributed over the country.
- In Finland data centers can connect directly to the national grid and, thus, the local grid fee can be omitted
- **Data centers above 5 MW have reduced electricity tax of 0,5 € / MWh, the minimum allowed by EU legislation in 2021.**

Breakdown of Energy Cost

Cost item	€ / MWh	
Nord pool Spot	33 *	* *linear* average of *hourly* prices
National grid fee	4,5	
Local grid fee	2 – 4 **	**can be omitted
Electricity tax	0,5	
Total	40 – 42 € / MWh *when in local grid*	
Total	**38 € / MWh** *when in national grid*	



BUSINESS FINLAND

NCC Data Center concept

Energy efficient, flexible and reliable

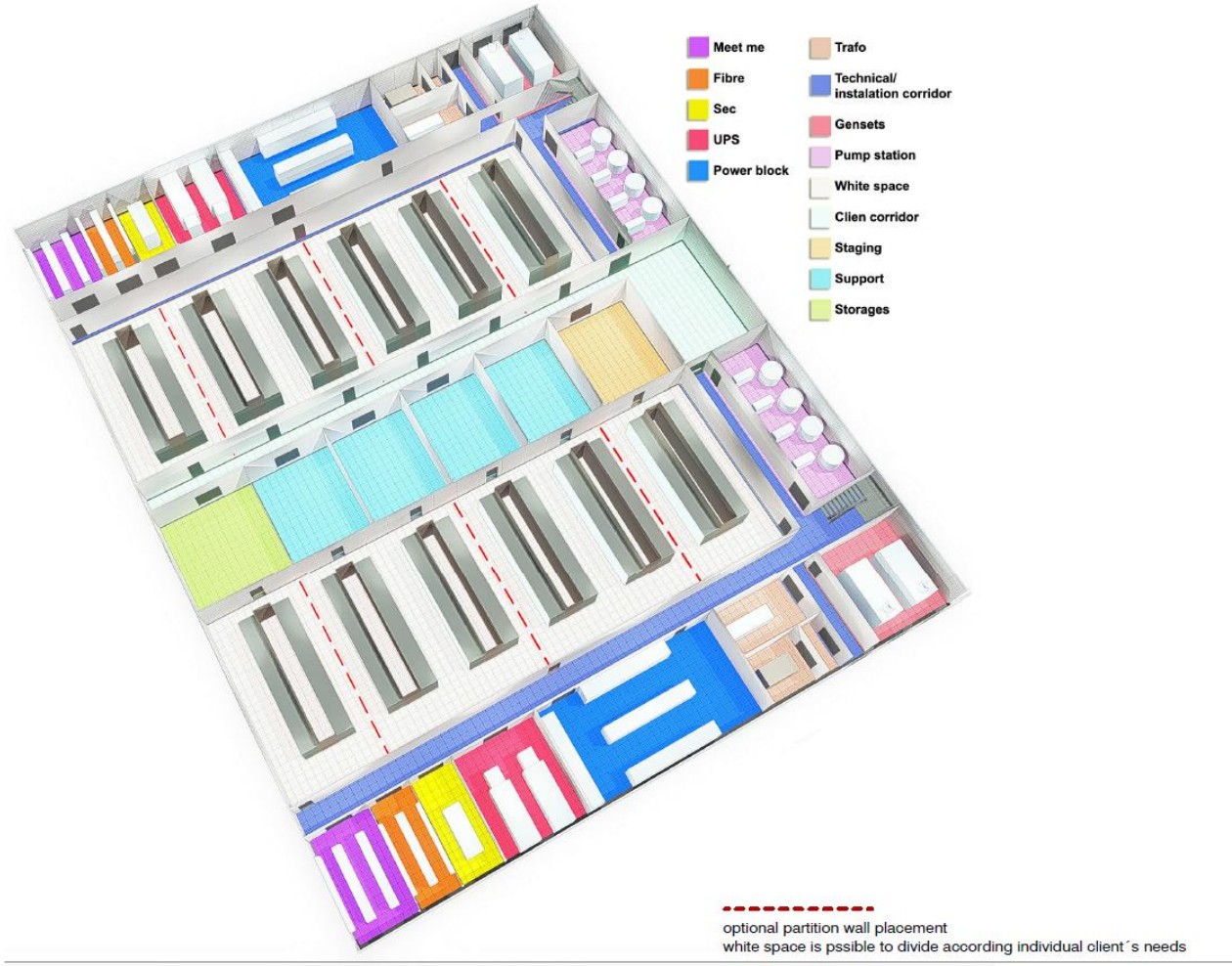
We are ready to go!
Project team and partners

NCC Data Center concept

- Ready-to-go sites and team
- Tailored design and architecture solutions
- Capacity of 20MW and more (110kV grid)
- PUE level <1,15
- 10-month construction time
- Excess heat recovery system
- Ready Tier 3 engineering design
- VDC Virtual design & construction
- Environmental certification

Sustainable engineering solutions

- PUE level <1,15
- Electricity
  - Capacity of 20 MW and more (110 kV line)
  - Construction of electrical connections on municipal land without redemption
  - Renewable sources of energy - natural gas, wind power, solar panels
- Cooling system
  - IT Cooling System based on direct free air-cooling system with redundancy of N+1
  - Support rooms cooling based on close control units and centralized chiller with redundancy of N+1
- Excess heat recovery system
  - Based on water heat pumps and heat recovery coils
  - Possibility to sell excess heat to the district heating system
- Environmental certification
- Life cycle maintenance services



Digitalized construction

VDC – Virtual Design & Construction

- Information models and BIM+ use 4D, 5D Quality
- Co-operation - Project studios, Organization, Decision-making
- Process - Design, R&D, Support, Training
- Business Metrics - Documentation, Monitoring, Analytics, Comparison

We have ready DC sites in Helsinki and around Finland

Let’s be in touch in English or Finnish

and get your next project rolling!


NCC