

DATACENTER FORUM



NEW GENERATION OF DATA CENTER DEVELOPMENTS WITH CIRCULAR ECONOMY SOLUTIONS

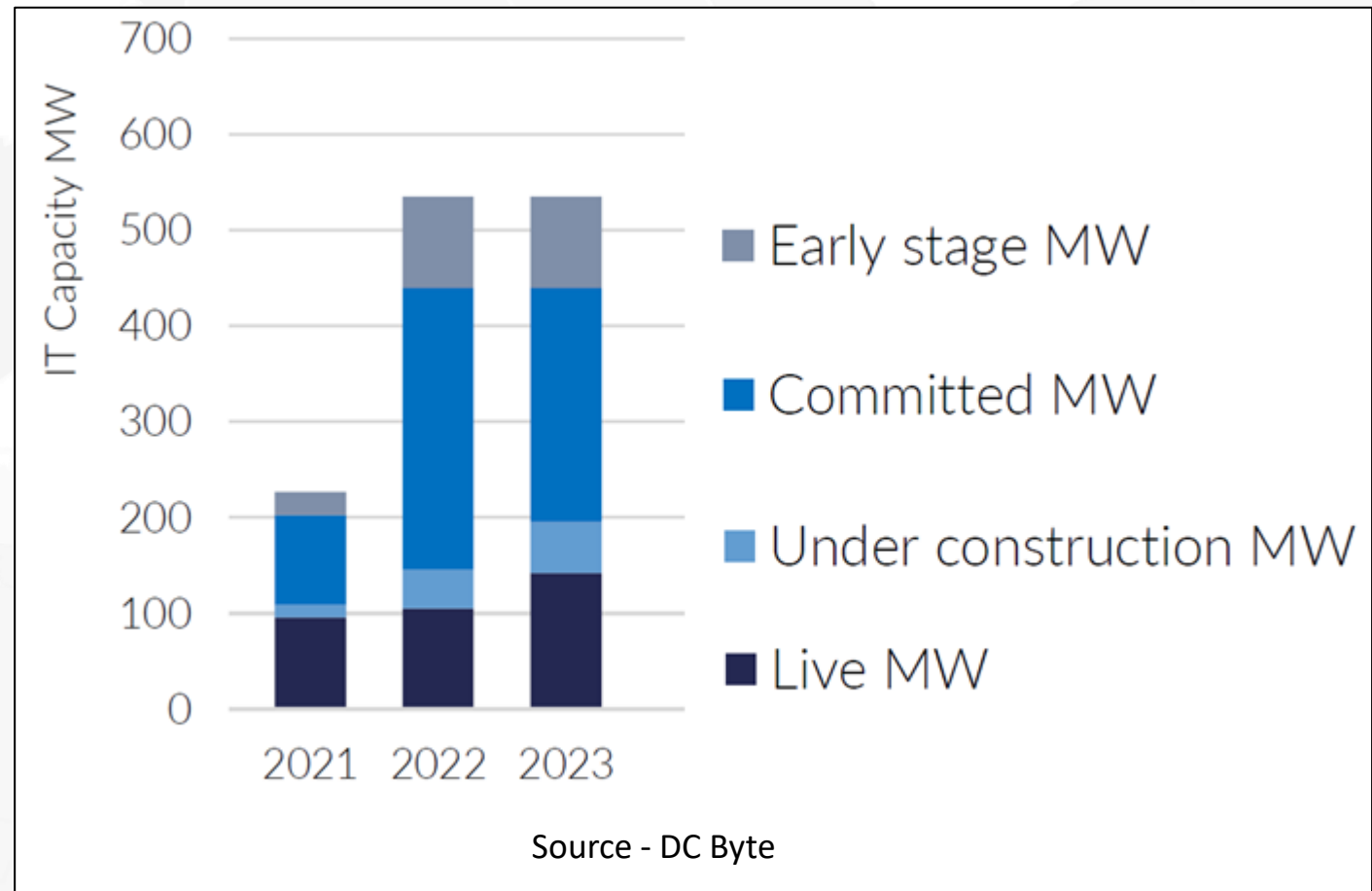
Filip Schelfhout
CEO

CTS Nordics Group of Companies

Norway as a Focus Area for Data Center Development

In recent years, **Norway** has put itself on the map in the **European Data Center Market**.

During the last year's Datacenter Forum, CTS Nordics informed about the **major opportunities** and **growth** of the Data Center industry in Norway.



TikTok : Partnership with Green Mountain

Through close collaboration during 2022, Green Mountain and CTS Nordics achieved great success in commercial development of a new Tik Tok data center campus at Hamar, Norway.

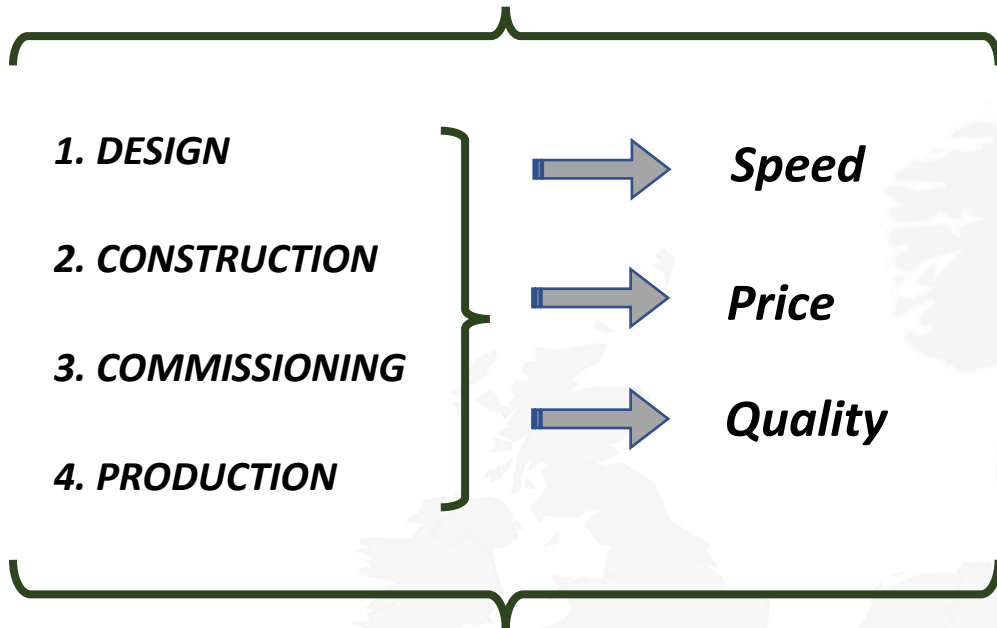
CTS Nordics would like to extend our gratitude towards the Green Mountain Management Team for this collaboration and partnership, in addition to their great success in positioning Norway in the Data Center development spotlight.

Later today, the CEO of Green Mountain, Svein Atle Hagaseth, will present the larger story on this partnership.



Recap Datacenter Forum 2022 - How to Successfully build data centers in Norway

Green / Sustainability



Sardine box with a lot of power and cooling

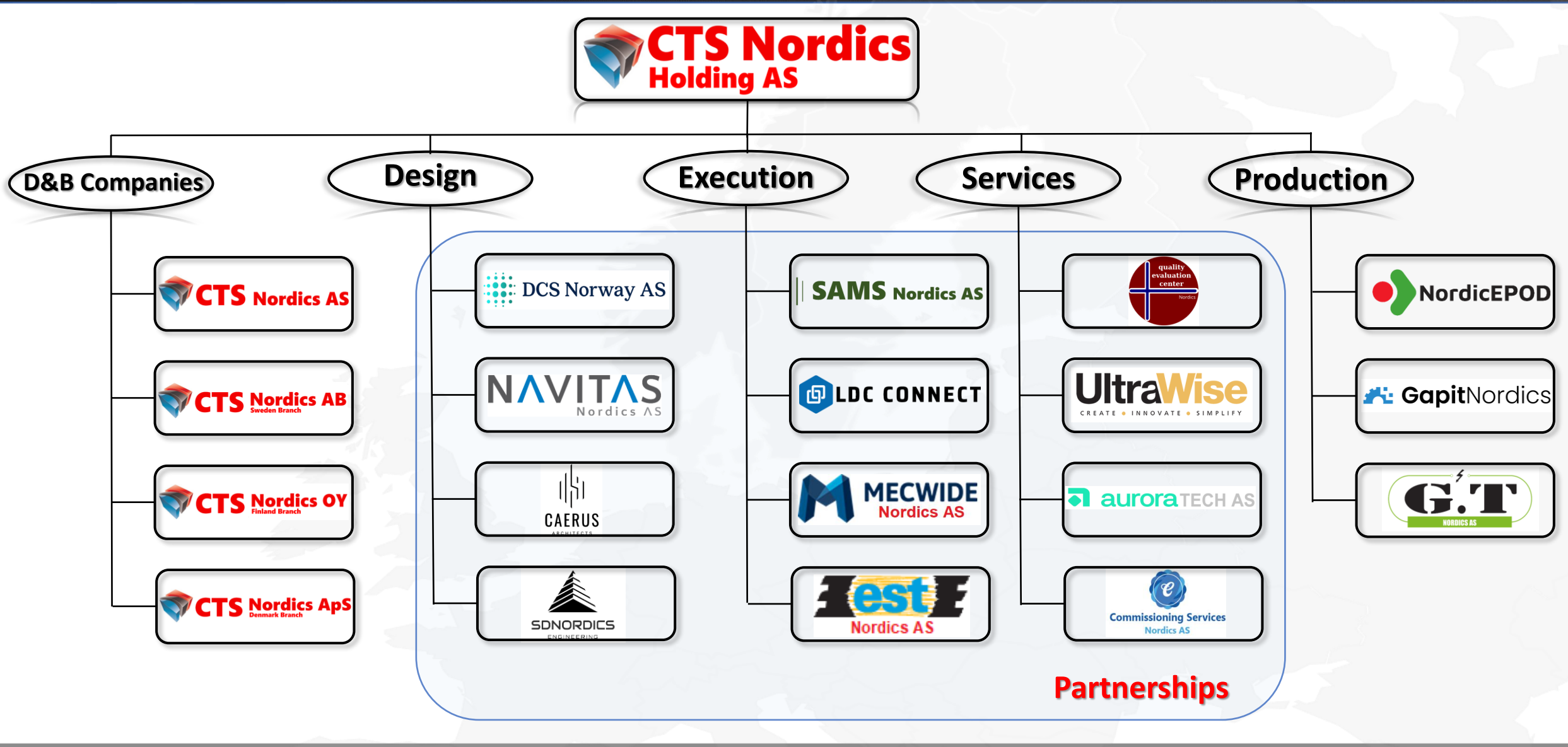
PARTNERSHIPS – Specialized companies

MANAGEMENT – Local and International Professionals

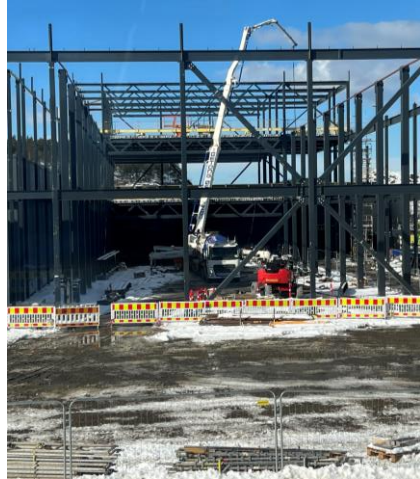
MANAGEMENT TOOLS – In-house software and QMS

SUSTAINABILITY – Integration in design and build phases

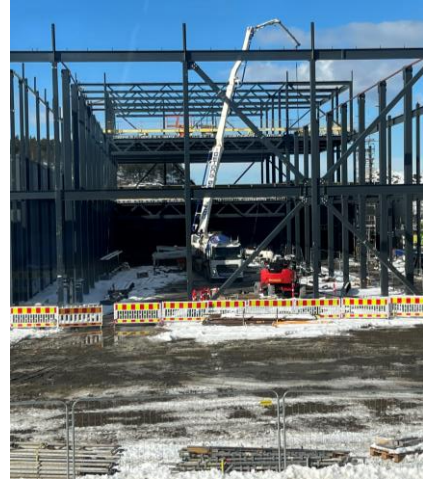
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Design & Build Projects



Design & Build Projects



CTS Nordics is currently executing build projects for 203 MW in Norway

Development Pipeline

CTS Nordics has an additional development pipeline providing design engineering services for **485MW** of projects in four countries.



CTS Norway Branch
Nordics AS



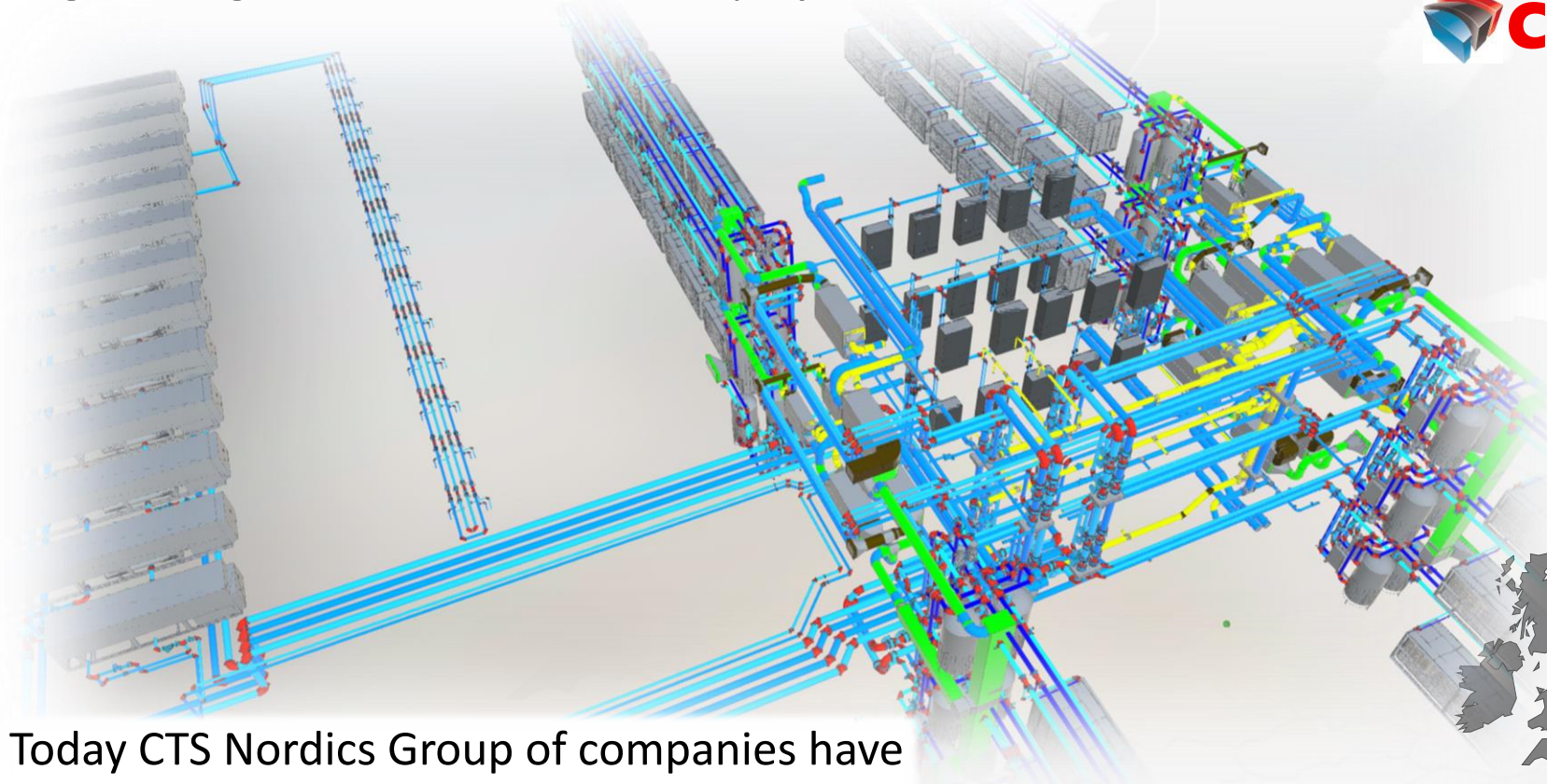
CTS Sweden Branch
Nordics AB



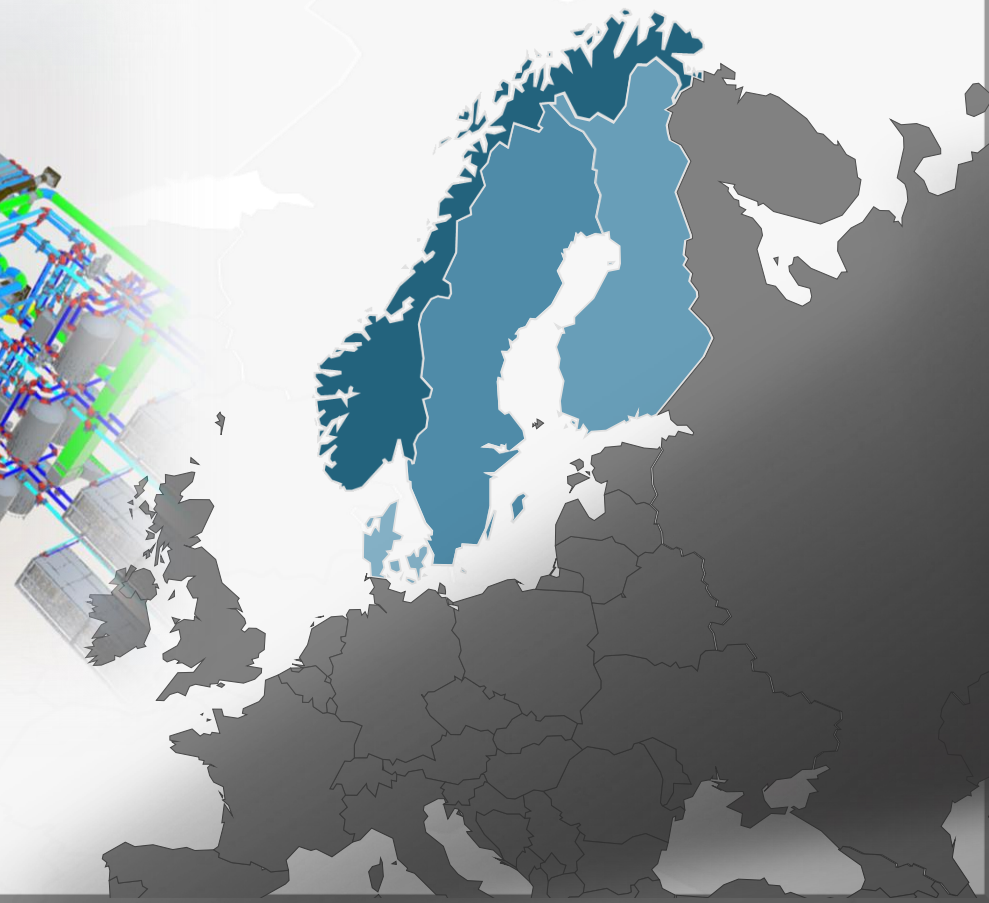
CTS Finland Branch
Nordics OY



CTS Denmark Branch
Nordics ApS



Today CTS Nordics Group of companies have **235 employees**. In the coming year, we are growing further up-to **± 370 employees**.



Design – Execution – Service Partners

From 2021, CTS Nordics has developed a Nordic network of specialized partnerships from international companies.

Design Partners



DCS Norway AS

NAVITAS
Nordics AS



❖ Architectural, Structural, Mechanical, and Electrical Design

Execution Partners



SAMS Nordics AS



LDC CONNECT



MECWISE
Nordics AS



❖ Mechanical, Electrical, and Connectivity Execution

Service Partners



auroraTECH AS

UltraWise
CREATE • INNOVATE • SIMPLIFY



❖ QA, IT, Cost Control, and Commissioning Services

Full
Supply
Chain
Control



CTS Nordics is ISO certified with certificates in ISO 9001, 14001 and 45001

NordicEPOD AS

From our factory in Sande, NordicEPOD is currently in production of 152 new generation Electrical Power PODs of 2MW.

Our Targets:

- ❖ Digitalization
- ❖ Standardization
- ❖ Quality, price, and fast-track
- ❖ Web based production tracking
- ❖ Circular Economy

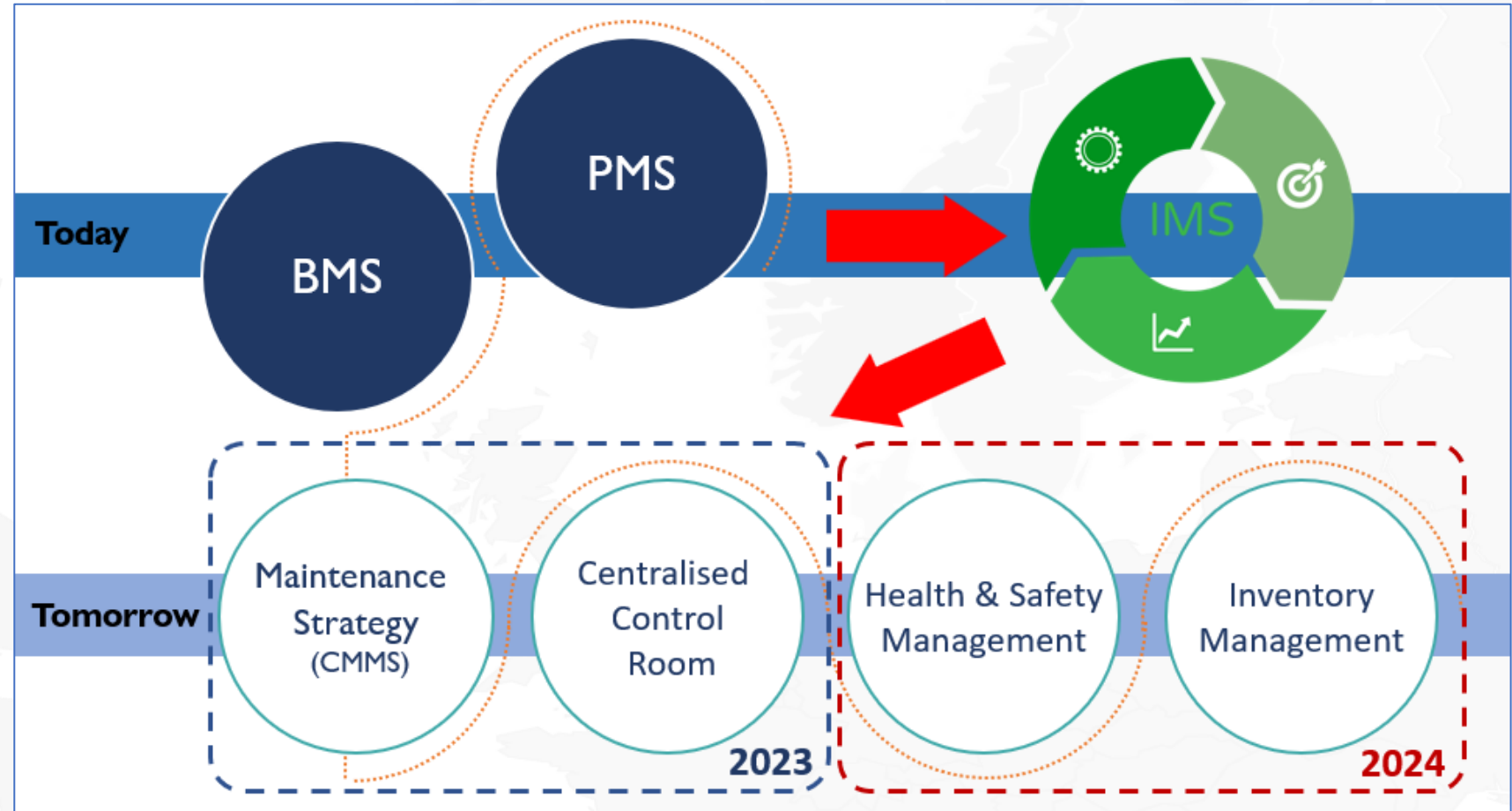


Gapit Nordics AS

Today, Gapit is the largest **PMS** supplier in Norway providing specialized **BMS** and **PMS** in an Integrated Management System.

Future Objectives:

- ❖ Expand services to include **CMMS** by the end of 2023
- ❖ Development of **Centralized Control Rooms**

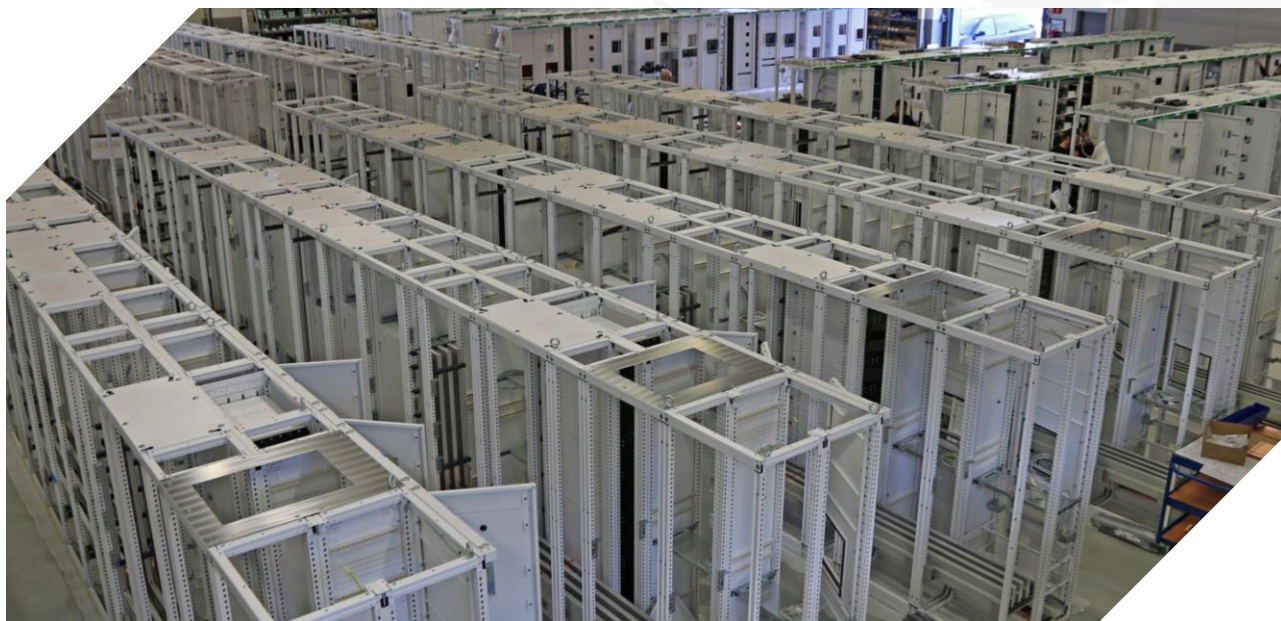


G.T. Nordics AS

G.T. Nordics AS is the sole manufacturer of electric switchboards and control panels for CTS Nordics Group of Companies.

Value added:

- ❖ Market-leading production time through pre-approved design solutions
- ❖ Fast-track assembly
- ❖ Circular economy



Future Developments: Use of New Technologies

CTS Nordics' Focus on Integration of New Technologies



Prefabrication of key components

Maximize pre-fabricated and pre-assembled components

Reduces costs and improves safety & quality



New technologies for Project

Use of Rotary Laser Levels for construction

Introduction of industrial robots for building construction



Vertical integration and software development

Standardization, optimization and digitalization of procedures and systems

Sole focus on Datacenters



New organization for execution

Integration of experts via partnerships

Time optimization during design and construction



Integration of a Remote control room

New infrastructure design to enable 24/7 availability and remote operation of Datacenters



New efficient cooling Systems

Design & construction of facilities to support new cooling technologies

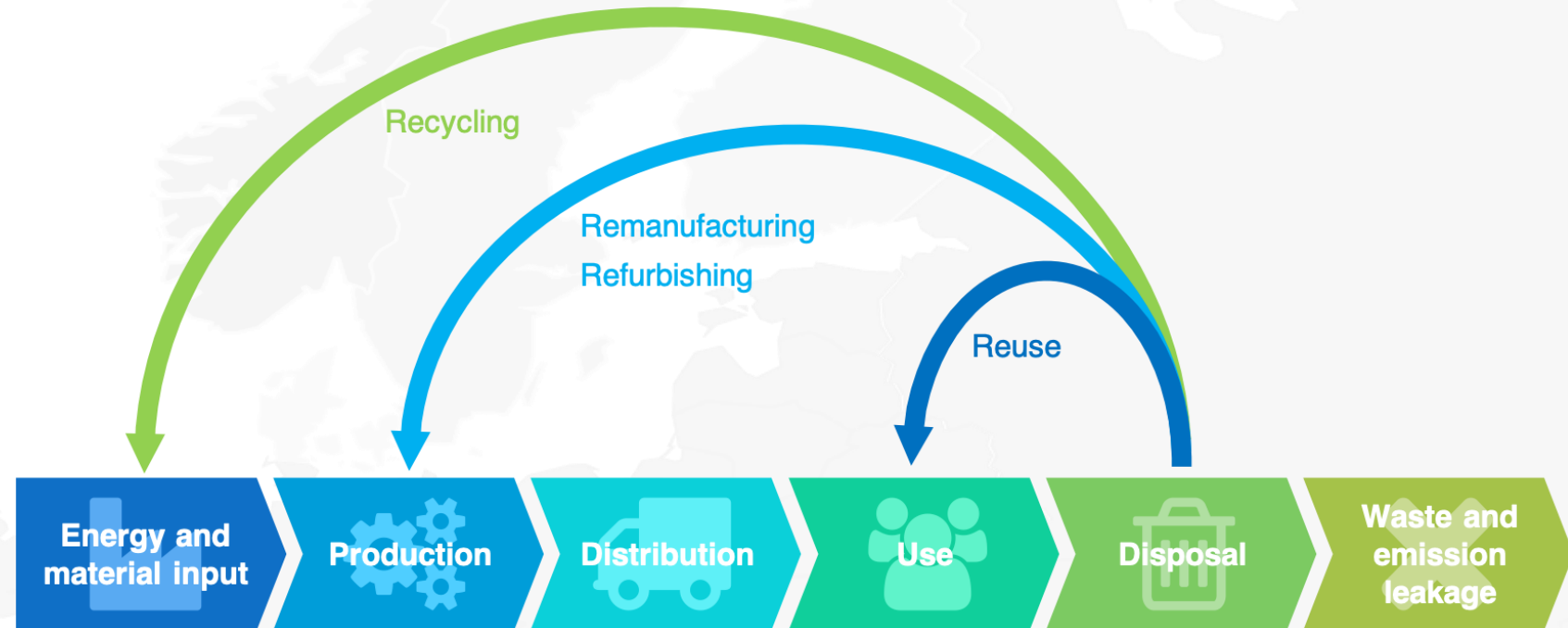
CAPEX Reduction

OPEX Reduction

Current Linear Economy and Circular Economy Solutions

Current Linear Economy:

- ❖ Data centers are estimated to reach 4% of global electricity consumption by 2030 (Source: Vertiv news - London November 2022)
- ❖ Vulnerable to raw material and electronic equipment supply chain

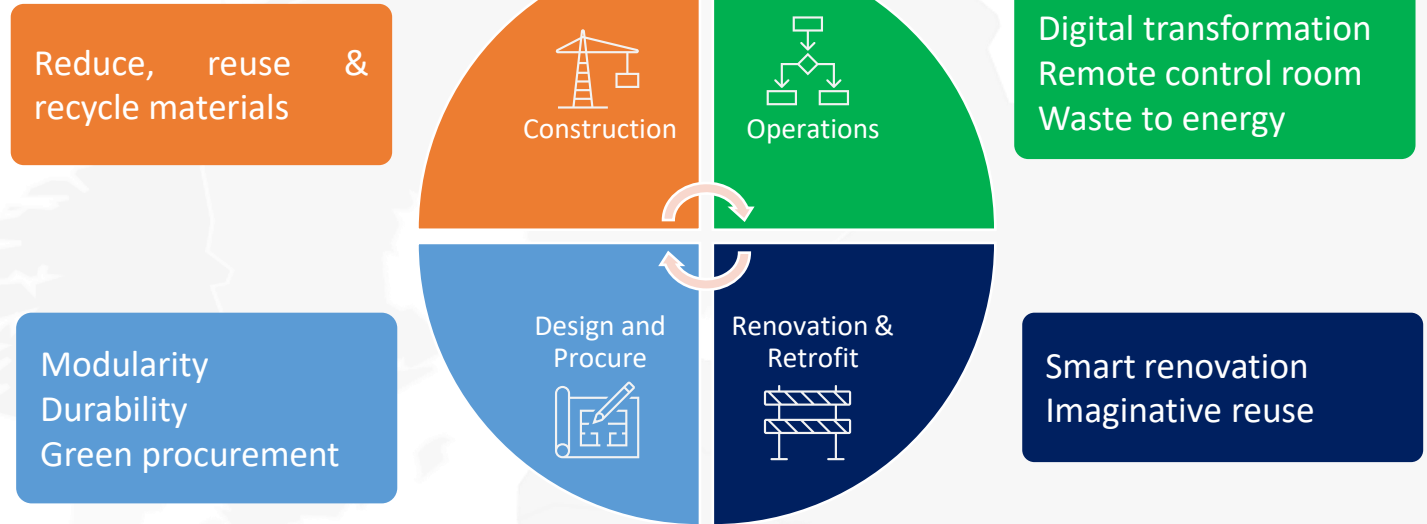


Future Developments: Circular Economy

Circular Economy Implementation

- ✓ As the demand for datacenters increases, the need to design and build in a more sustainable approach has increased.
- ✓ Joining the circular economy could significantly reduce the carbon footprint.
- ✓ The waste heat could be used for different purposes:
 - District heating
 - Greenhouses
 - Vertical farming
 - Food production plants

We must create new economies



Thank You

Next update in one year:

Same time, Same place



CTS Nordics

Our Value is passion for the business