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Interxion's roadmap for a sustainable future at Nordic and Global level

Peder Bank
Managing Director Nordics
Interxion: A Digital Realty Company

The big picture and the problems we face

■ **Earth Overshoot Day**

Marks the date when humanity's demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year. **In 2021, it fell on July 29th.**[1]

■ **The data centre industry plays a role**

It is estimated data centres around the world use more than 2% of the world's electricity, and generate the same amount of carbon emissions as the global airline industry (in terms of fuel use).[2]

[1] *Source:* www.overshootday.org

[2] *Source:* www.theconversation.com/for-a-greener-future-we-must-accept-theres-nothing-inherently-sustainable-about-going-digital-128125

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Interxion & Digital Realty Combined

4.000+ Customers	**290** Data Centers	**6** Continents	**24** Countries	**49** Metro Areas	**~170K** Total Cross Connects	**700+** Carriers

Legend:
- Digital Realty Locations
- Westin Building Exchange
- Interxion: A Digital Realty Company Locations
- Ascenty Locations
- iColo Locations
- MC Digital Realty Locations
- Digital Realty / Adani Data Center Development MoU

Cloudscene — EMEA
Data Center Ecosystem Leaderboard
– H1, 2021 –

1. DIGITAL REALTY
2. EQUINIX
3. LUMEN
4. KDDI
5. NTT Communications
6. Telia Carrier
7. gtt
8. BT
9. GLOBAL SWITCH
10. verizon

Global platform – Local expertise

Digitalization & Sustainability!

The data volume has increased more than 30 times since 2010 – mainly due to more people have gained access to the internet, increased use of social media and streaming services.

- The Market research company, Statista

Source: https://taenk.dk/test-og-forbrugerliv/digitale-tjenester/saa-meget-paavirker-dit-internetforbrug-klimaet

- By 2030 data centres will consume 17 percent of the electricity in Denmark.[1]

[1] *Source:* The Danish Energy Agency

Energy efficiency & sustainability: Fundamental engineering & operational guidance

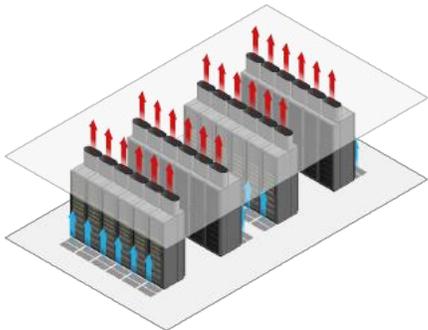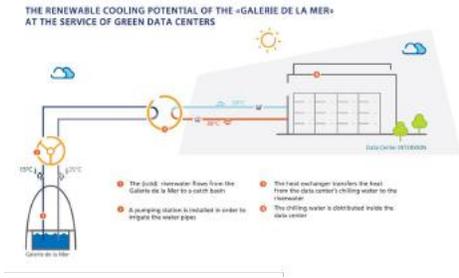| Modular builds	Highly energy-efficient equipment (free-cooling, UPS…)	Innovative technologies (geothermal sources, river cooling…)	Segregation of hot/cold aisles	Alignment with ASHRAE guidelines for environmental conditions

THE RENEWABLE COOLING POTENTIAL OF THE «GALERIE DE LA MER» AT THE SERVICE OF GREEN DATA CENTERS

Timeline Interxion Danmark

Energy efficient, responsible and sustainable data centre operation

**Groundwater cooling is established
and optimization of downflow units**

Yearly reduction
1.247.606 kWh
477 Ton CO_2e

**Optimization of emergency power
systems and setup of LED lighting**

Yearly reduction
3.872.984 kWh
941 Ton CO_2e

**Accumulated
values**

2012/2013

2016/2017

2020/2021

Yearly reduction
6.740.055 kWh in
annually
counteracted
power consumption

Equivalent to
7.868 Ton CO_2e
combined for this
time period

2014/2015

2018/2019

**Optimization of refrigeration systems
and setup of cube solutions**

Yearly reduction
1.060.423 kWh
476 Ton CO_2e

**Further optimization of the
cooling installations**

Yearly reduction
284.609 kWh
65 Ton CO_2e

**Replacement of pumps for high
energy efficiency and control**

Yearly reduction
274.433 kWh
67 Ton CO_2e

All carbon is offset
by 100% use of
renewable energy

◀ ▶ *All data are gathered from validated energy saving projects that have been reported and approved by the Energy Companies' energy saving efforts (Energiselskabermes energispareindsats)*

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Usage in internet traffic, data centre workloads and data centre energy 2010-2019

Index (2010 = 1)
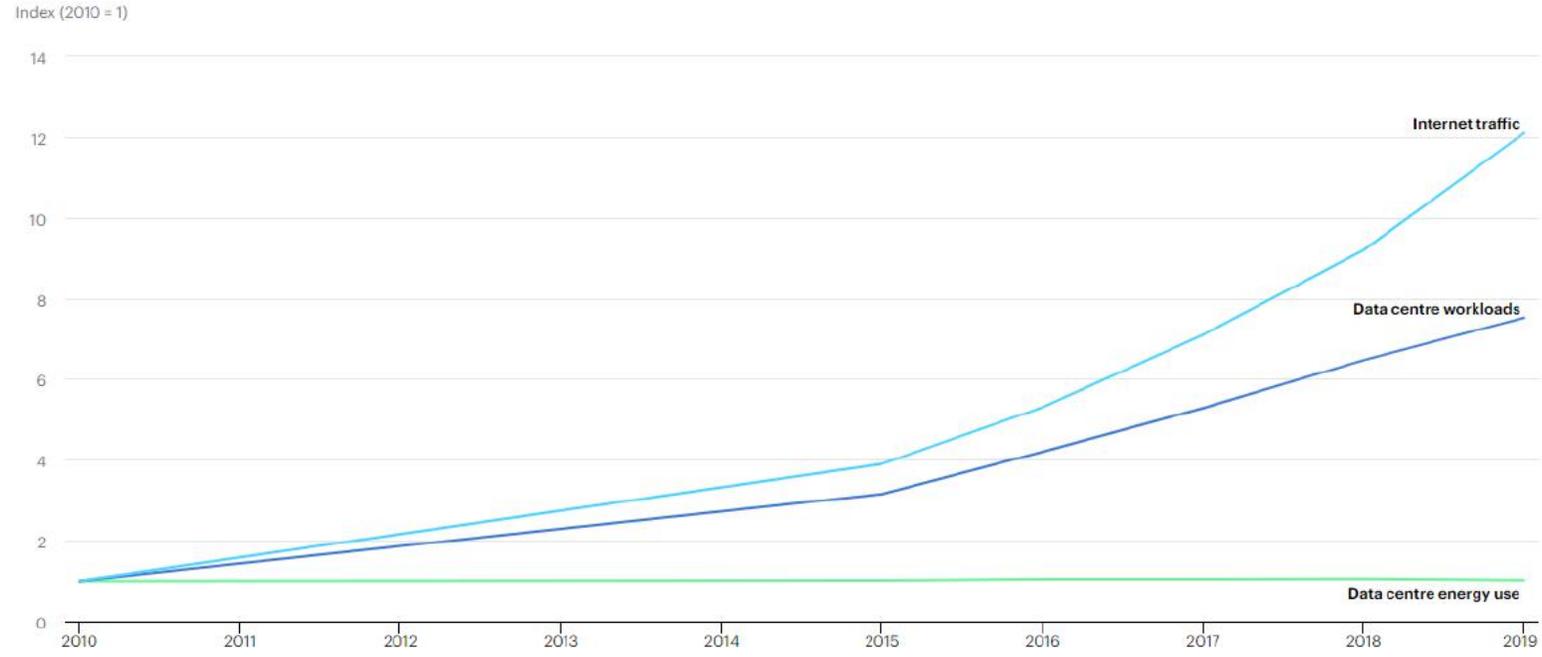
IEA. All Rights Reserved

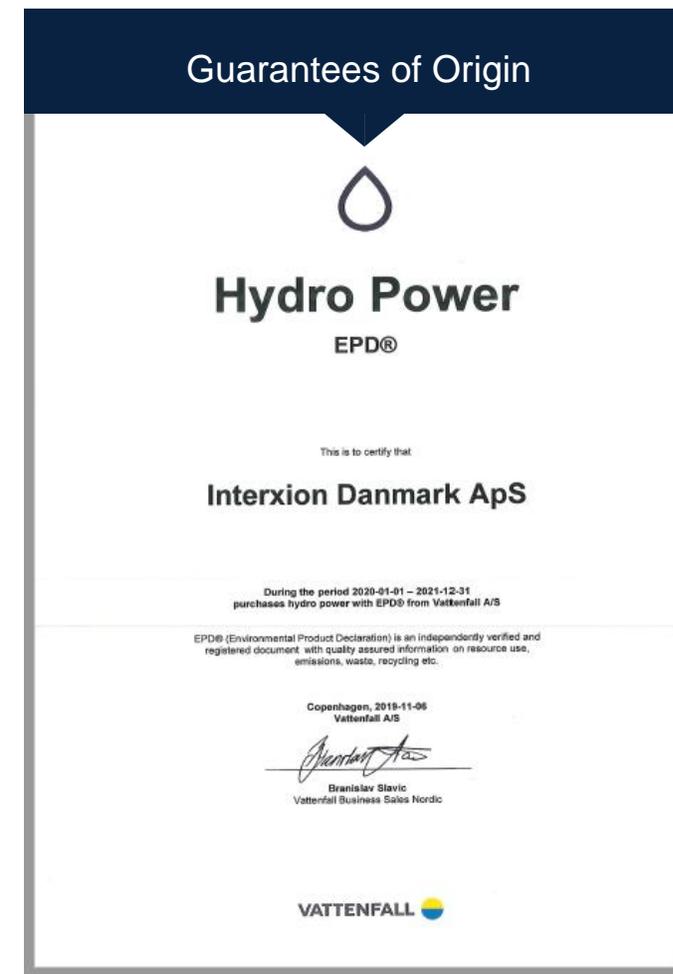● Internet traffic ● Data centre workloads ● Data centre energy use

Renewable energy: multiple ways to procure

Interxion has chosen to **redeem its data centres' electricity usage** in the form of renewable energy produced in Europe, either via supplier's green tariffs or via Guarantees of Origin ("GOs"). These GOs are **issued** and **controlled** in accordance with **European Directives and national legislation**.

In parallel, Interxion is **assessing other energy sustainability opportunities** throughout Europe (e.g. PPAs, etc.).

Interxion Nordics:

We use certificates garanteering 100% hydro-electricity generated from Vattenfall's plants situated in the Nordic region

Guarantees of Origin

Hydro Power
EPD®

This is to certify that

Interxion Danmark ApS

During the period 2020-01-01 – 2021-12-31 purchases hydro power with EPD® from Vattenfall A/S

EPD® (Environmental Product Declaration) is an independently verified and registered document with quality assured information on resource use, emissions, waste, recycling etc.

Copenhagen, 2019-11-06
Vattenfall A/S

Branislav Slavic
Vattenfall Business Sales Nordic

VATTENFALL

We have made it this far – now we need society!

As data centre industry we have managed to move the sustainability agenda this far by:

- Optimized core data centre infrastructure
- Using green and sustainable power

■ **Going forward**

Now we need the surrounding society to provide the foundation that enables us to become an even larger part of the sustainable future

- Enabling the infrastructure for reuse of heat
- Incentivize for companies to make sustainability more attractive
- Common standards and certifications

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Reuse of heat in the Nordics

- Interxion have been cooperating with Stockholm Exergi since 2015 by returning waste heat to the district heating network.

- Excess heat from Interxion's data centres have the capacity to heat 10.000 modern households in northern Stockholm.

Re-use of heat in the Nordics:
This is an area, where we as industry depends heavily on society – the different approaches between Sweden and Denmark paints a clear picture!

Where Stockholm has reused heat from production for decades and since 2015 also from data centres, Denmark has just recently removed taxes and in Copenhagen we have chosen a different heating system burning waste, which makes it more difficult to use the excess heat.

stockholm exergi

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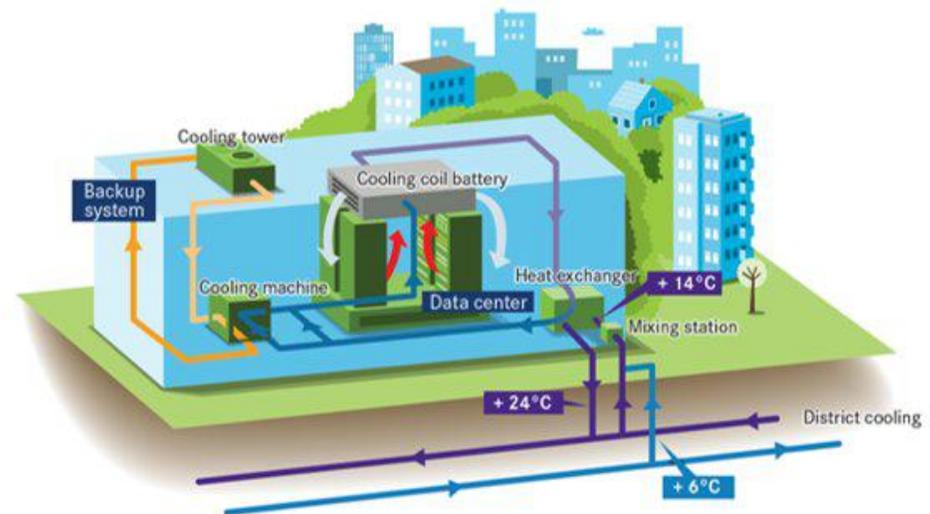
EU Code of Conduct for Data Centre Energy Efficiency

'The first government led set of Data Centre specific best practices published worldwide'

EU Code of Conduct Evolution

- Original launch October 2008

- Initially 112 recommended best practices

- Revised annually through peer review process

- Incorporated into EN 50600 as TR 50600-99-1 in 2016

- EU Code of Conduct 2021 and TR 50600-99-1:2021 now incorporate 157 best practices

Interxion: A Digital Realty Company & the Code

- Membership of the international panel of experts that drafted the original code in 2008

- Long history of incorporating guiding principals of the code into Energy Management philosophy

- Membership of expert technical committee, peer reviewing annual revision

Formal Adoption of 'Participant' status at Interxion: A Digital Realty Company

- Current formal participant status:
    - 8 DCs in the UK
    - 2 DCs in Netherlands
    - 2 DCs in France
    - 1 DC in Germany

- Planned in 2021
    - **9 DCs in the Nordics**
    - 8 DCs in France
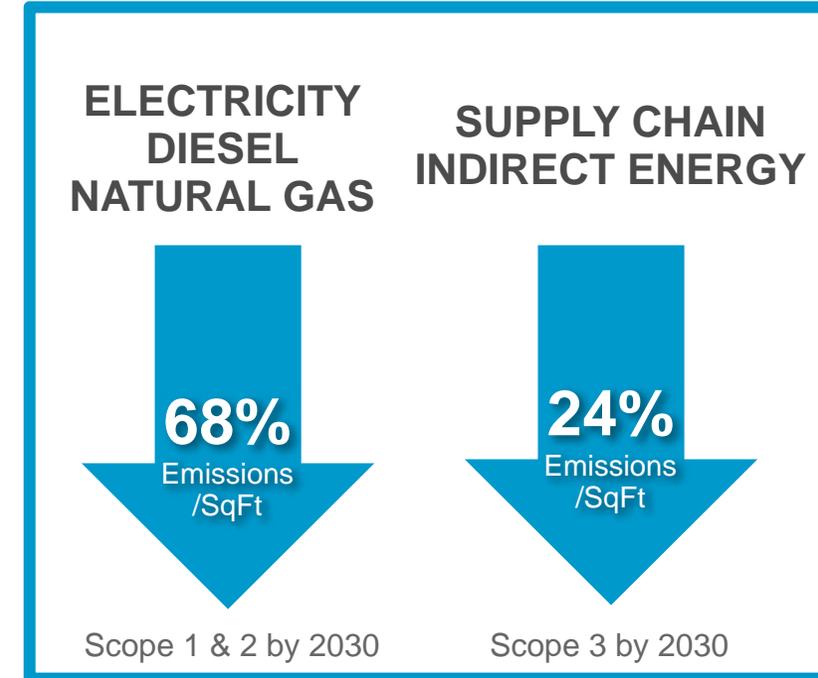   - 2 DCs in Switzerland

Science-Based Targets Initiative (SBTi)

- **The Paris Agreement** sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C.[1]

- 1st global data center provider of our global size and reach to set a **Science-Based Target**

- Joining 1,000+ global businesses committed to **reducing carbon emissions** in line with climate science

[1] *Source:* European Commission (https://ec.europa.eu/clima/eu-action/international-action-climate-change/climate-negotiations/paris-agreement_en)

Interxion France: Carbon Neutral Commitment

- Interxion France announced target has achieved a carbon neutral footprint in 2020 (sc. 1 & 2)

- Supports Digital Realty's Science-Based Target

ELECTRICITY DIESEL NATURAL GAS

68%
Emissions /SqFt

Scope 1 & 2 by 2030

SUPPLY CHAIN INDIRECT ENERGY

24%
Emissions /SqFt

Scope 3 by 2030

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1. Digital Realty's carbon reduction target will be finalized and announced following validation from the Science-Based Targets Initiative.

2. Includes Scopes 1, 2, 3 emissions as defined by the WRI GHG Protocol.

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The Greenhouse Gas Protocol

- **Becoming Carbon neutral?**
- **The Greenhouse Gas Protocol Initiative**

A multi stakeholder partnership of businesses, NGOs, governments, and others convened by the World Resources Institute (and the World Business Council for Sustainable Development (Launched in 1998 the Initiative's mission is **to develop internationally accepted greenhouse gas (GHG) accounting and reporting standards** for business and to promote their broad adoption.

- **Scope 1:** direct emissions from owned or controlled sources.
- **Scope 2:** indirect emissions from the generation of purchased energy.
- **Scope 3:** all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company

Interxion Nordics:

- We are at this point almost Carbon neutral in scope 1 & 2 and looking into becoming carbon neutral in this scope in Sweden by offsetting the carbon, we produce.

- The GHG protocol does not include reuse of heat!

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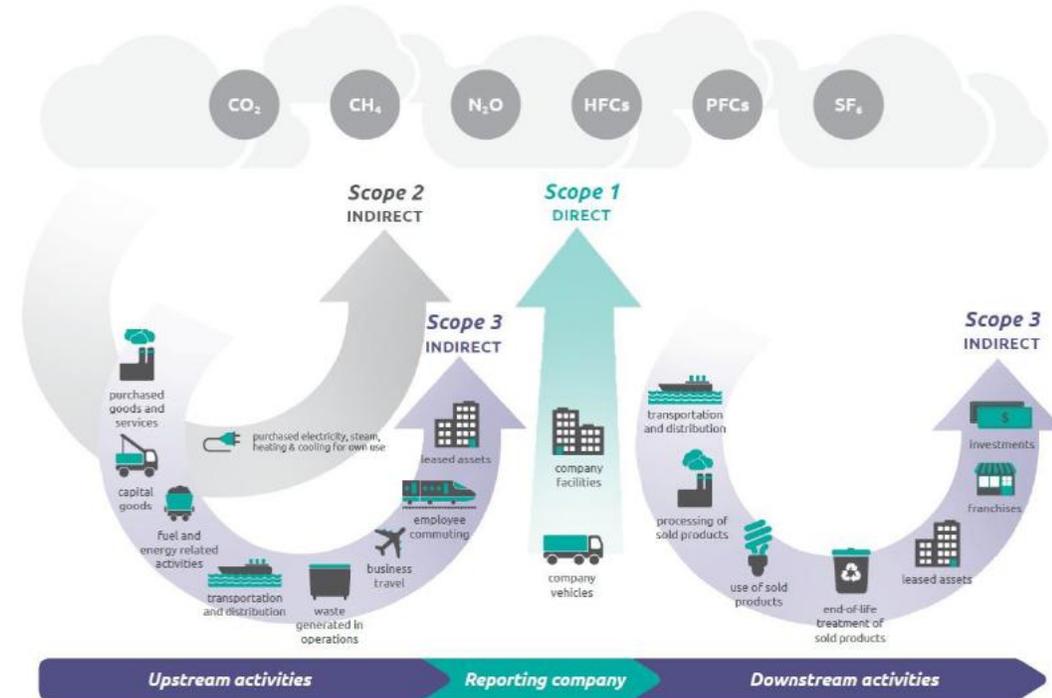
How does the future look?

- The Nordics is a great place to run data centres and the collaboration in Stockholm about reuse of heat sets an example for the world.

- The industry should not only adapt to existing frameworks and governance standards for all companies, but also try to influence and set our own standards

- EU Code of conduct is a great example, since it is a regulation designed by the industry to the industry, where the GHG Protocol for example do not include reuse of heat.

"We are committed to minimizing the impact of our operations on the environment, and to supplying our customers the sustainable solutions they want."

- A. William Stein,
Chief Executive Officer, Digital Realty

Bright if we work together!

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Thank you

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www.interxion.com

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