

DIGITAL  
INFRASTRUCTURES

WE ARE THE INTERNET

**#digitalinfrastructures**

# Data Centres in Europe - Opportunities for Sustainable Digitalisation

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Alliance for Strengthening of Digital Infrastructures in Germany  
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eco

ASSOCIATION OF THE  
INTERNET INDUSTRY

# About eco – Association of the Internet Industry

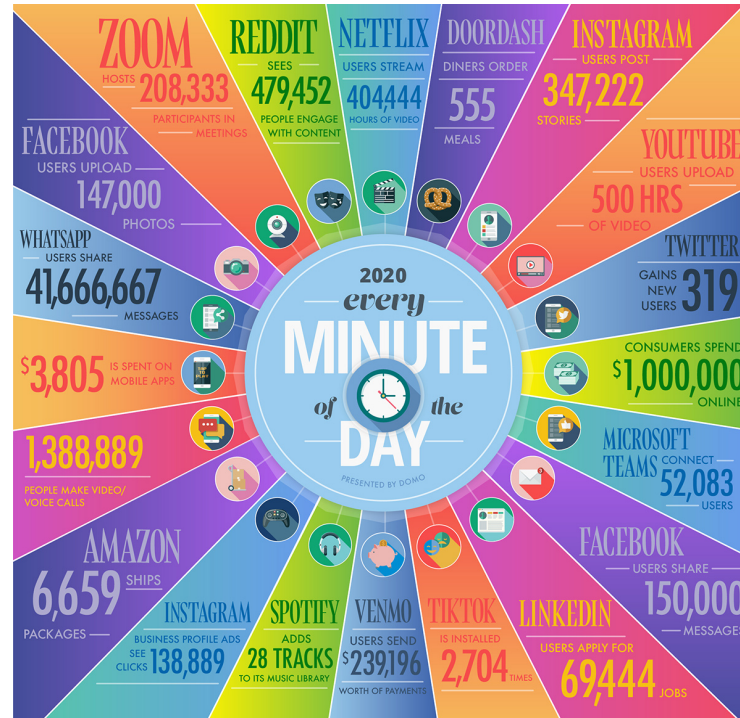
## We are shaping the Internet

- Largest association of the Internet industry in Europe
- More than 1,100 member companies
- Expert know-how in the competence and expert groups
- Services for companies and consumers
- Representation of interests in politics and (inter-) national committees
- Industry networking at more than 100 eco events per year

We develop markets, foster technologies, and create framework conditions.

# The Alliance for the Strengthening of Digital Infrastructures in Germany: Goals

- Increasing **public awareness** of the role and importance of operators of digital infrastructure in Germany
- **Informing** the public and politicians about the importance of the sector
- **Positioning of operators of digital infrastructures** and their importance as employers, economic growth engines, innovation drivers and as guarantors of Germany's digital self-determination
- **Co-development of political decisions** on Germany as a digital location



Source: Domo.com

# Digital infrastructures are of great importance

## What are digital infrastructures?

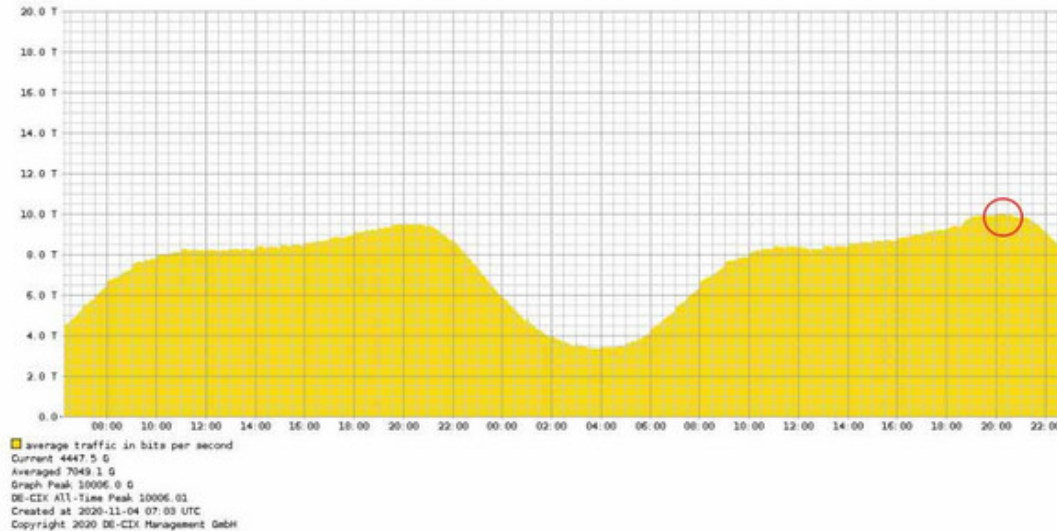
- High-speed broadband connections for companies and households
  - Large and small, central and regional high-capacity data centers
  - A high-capacity Internet backbone
- The additional value creation potential expected through digitalization in Germany amounts to approx. €500 bn.
  - The successful digitalization of products and business models by small and medium-sized enterprises requires high-capacity central and regional data centers.
  - Good digital infrastructures create an ecosystem for economic growth and business startups
  - Digital infrastructures are the foundation of digitalization, just as power infrastructures are the foundation of the energy transition.

## SUSTAINABLE DEVELOPMENT GOALS

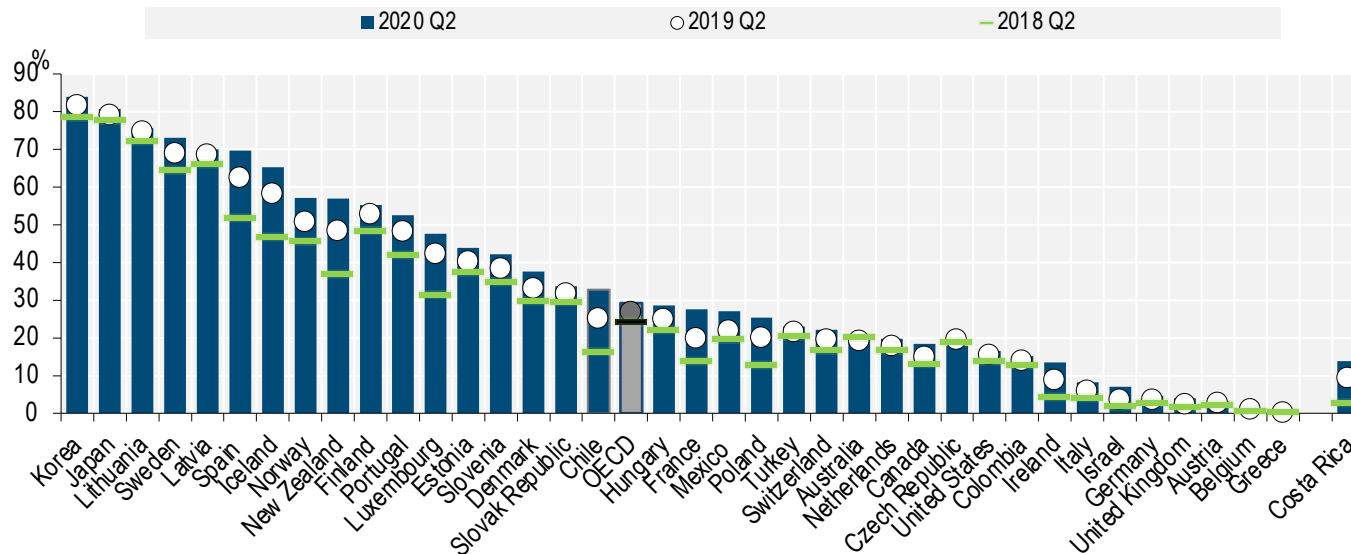


Sustainable data centres are much more than "just" energy efficient

# Covid-19 as Accelerator of Digitilisation

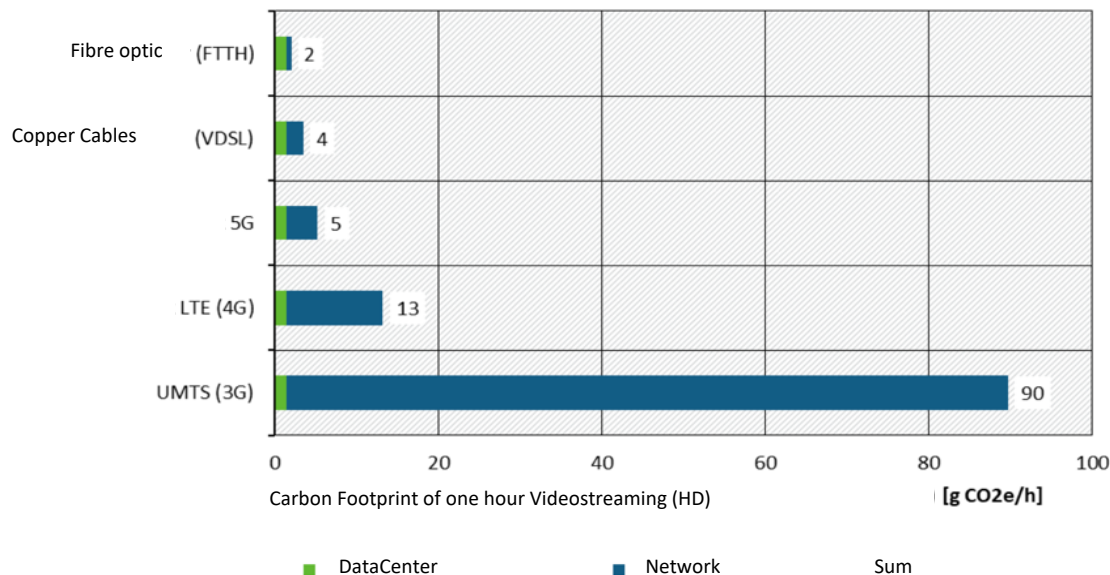


# Percentage of fibre connections in total fixed broadband, June 2020

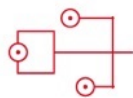




# Carbon Footprint of one Hour Videostreaming (HD)

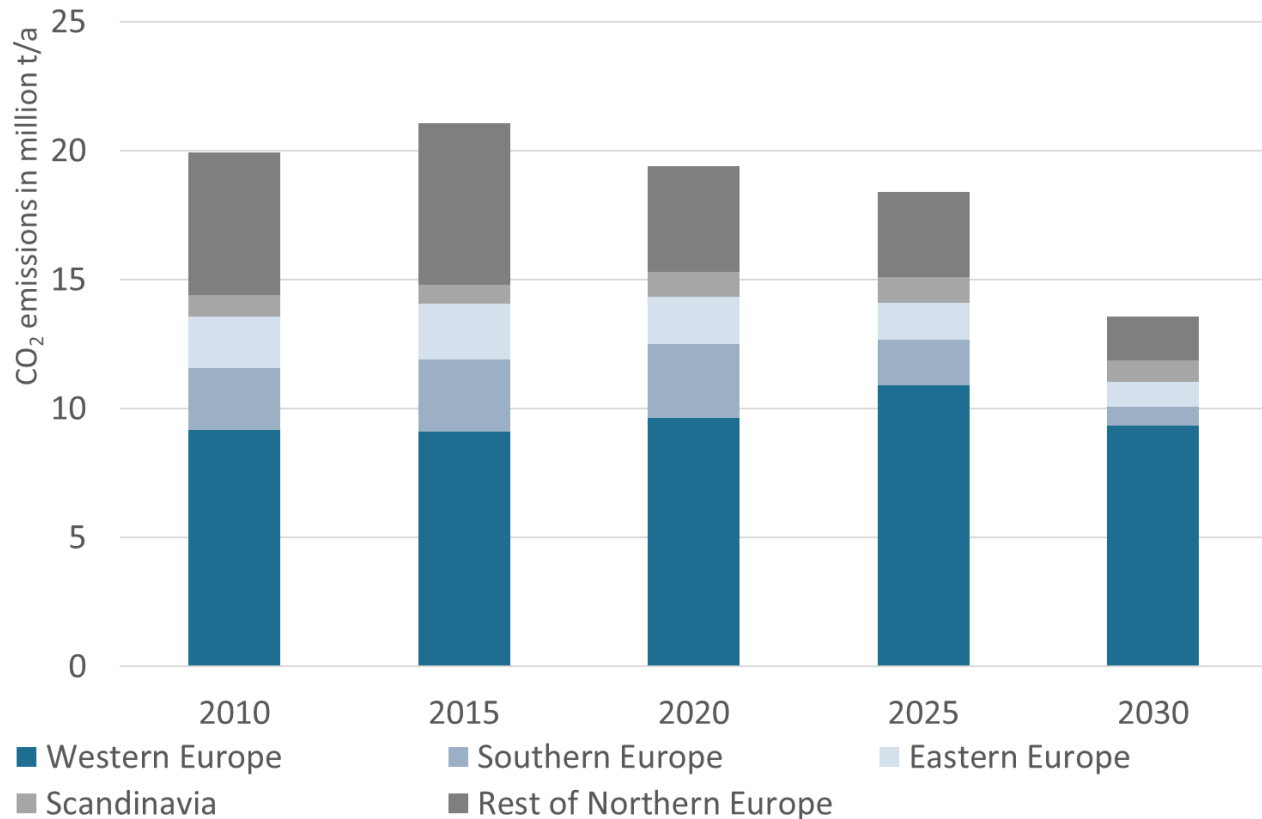


Source: German Federal  
Environment Agency

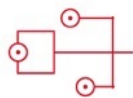


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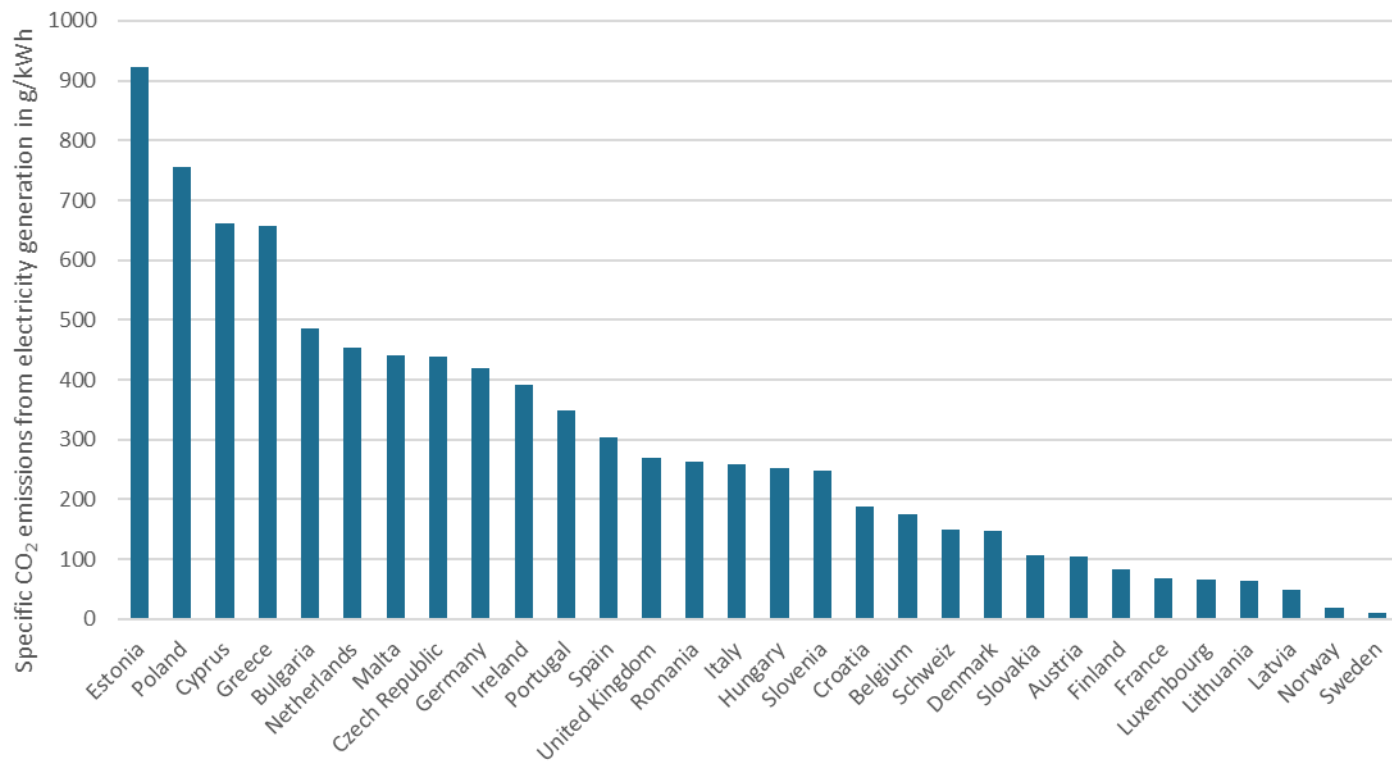


Data centres are becoming more climate-friendly - the average GHG emissions of data centres in Europe are already falling significantly



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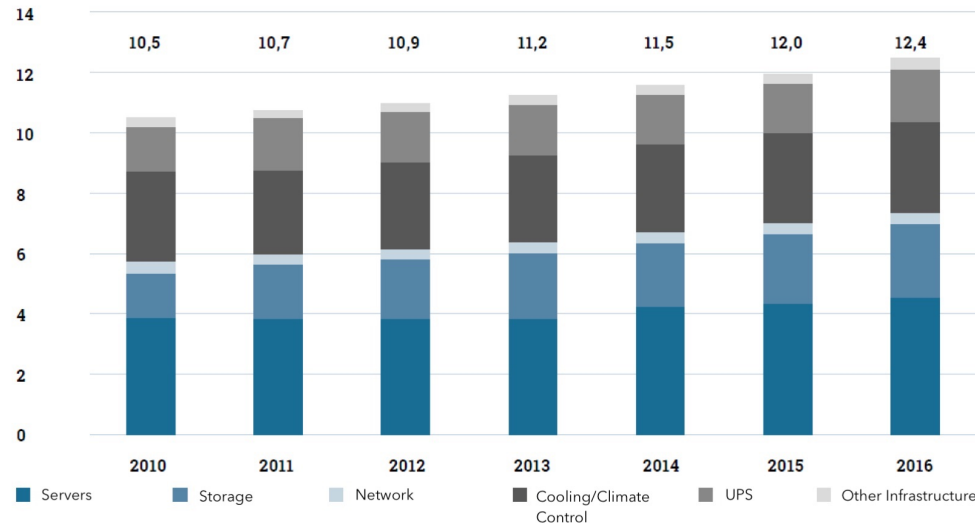


CO<sub>2</sub> emissions from power generation vary considerably within Europe

Source: European Environmental Agency (EEA)

# Significantly growing need for IT services means the energy requirements of data centers are growing

Energy requirements of servers and data centers in Germany 2010-2016 in bn. KWH/A



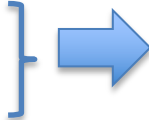
Source: Borderstep, (Hintemann 2017a)

# Energy efficiency of data centres increases very significantly

- Between 2010 and 2021, the number of workloads in data centres will increase **by a factor of 10**, IP traffic **by a factor of 19**
- In terms of computing and storage capacity, the energy requirements in the data centres have been reduced **by a factor of six to twelve**.
- Cloud-based solutions enable an additional boost in efficiency
- Data centre infrastructure for air conditioning, power supply, fire protection, etc. becomes significantly more energy efficient


# Examples of technological potential

- Efficient algorithms and optimised software programming
- New hardware solutions ("End of Moore's Law")
- Better utilization through management tools
- Optimisation of cooling and air conditioning
- Using renewable energies / sector coupling
- Use of waste heat



Improve framework  
conditions!

# Starting points for further promoting the sustainability of data centres

- Intensifying cooperation between politics and industry
  - Further promote research
  - Using public procurement
  - Pursuing European approaches (Green Deal, GAIA-X)
  - Driving energy system transformation and improving the energy mix
  - Promote waste heat utilisation
- 

# Political Demands

1. Recognize digital infrastructures as an **important factor for Germany as an industry location**
2. Drive forward **broadband expansion**
3. **Strategically strengthen and develop** Germany as a data center location
4. Develop measures that **take diverse business models into account**
5. Fund **research** in the data center area
6. **Reduce bureaucracy**; develop leaner and more efficient administration processes
7. Fund **training and further education**
8. Learn **cross-ministry** approach
9. Implement strategies at **EU level**
10. Develop competition-friendly **power prices**



# Further Information

→ <http://www.digitale-infrastrukturen.net>