

Environmental impact of ICT – data centers

Dr. Bruno LAFITTE



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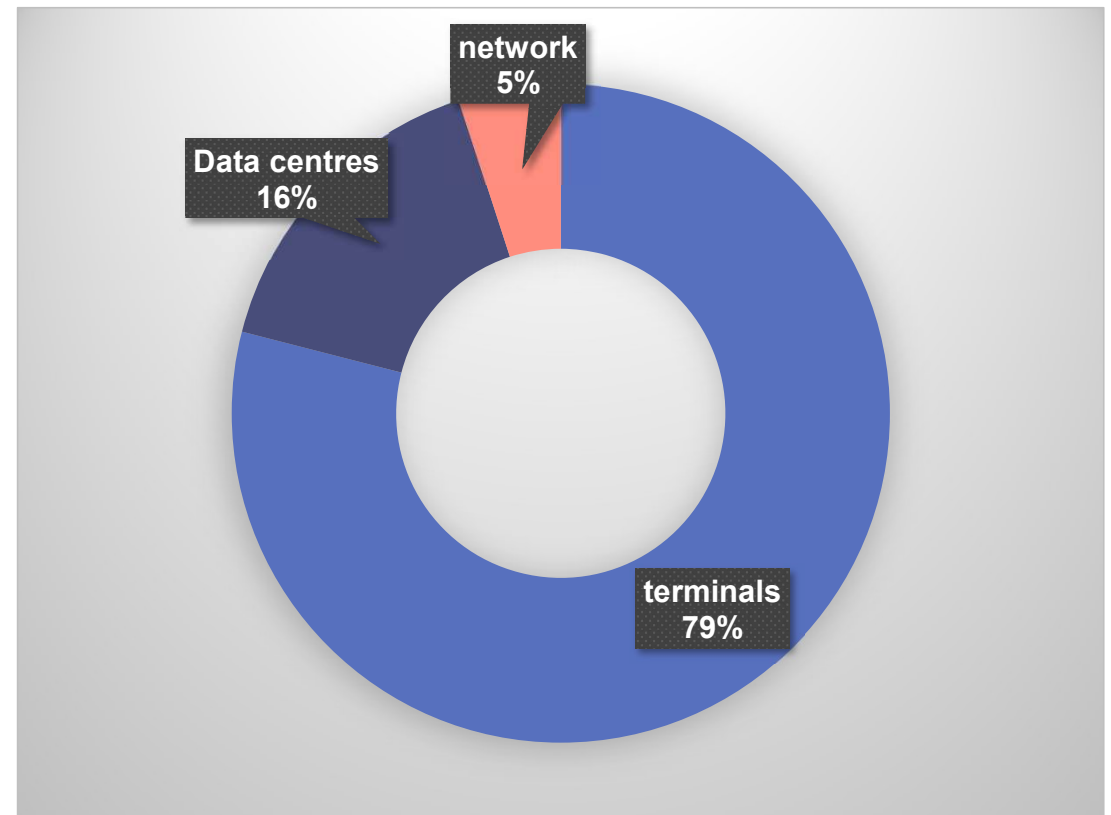
1. Environnemental negative impact of the ICT

Carbon footprint of ICT in France

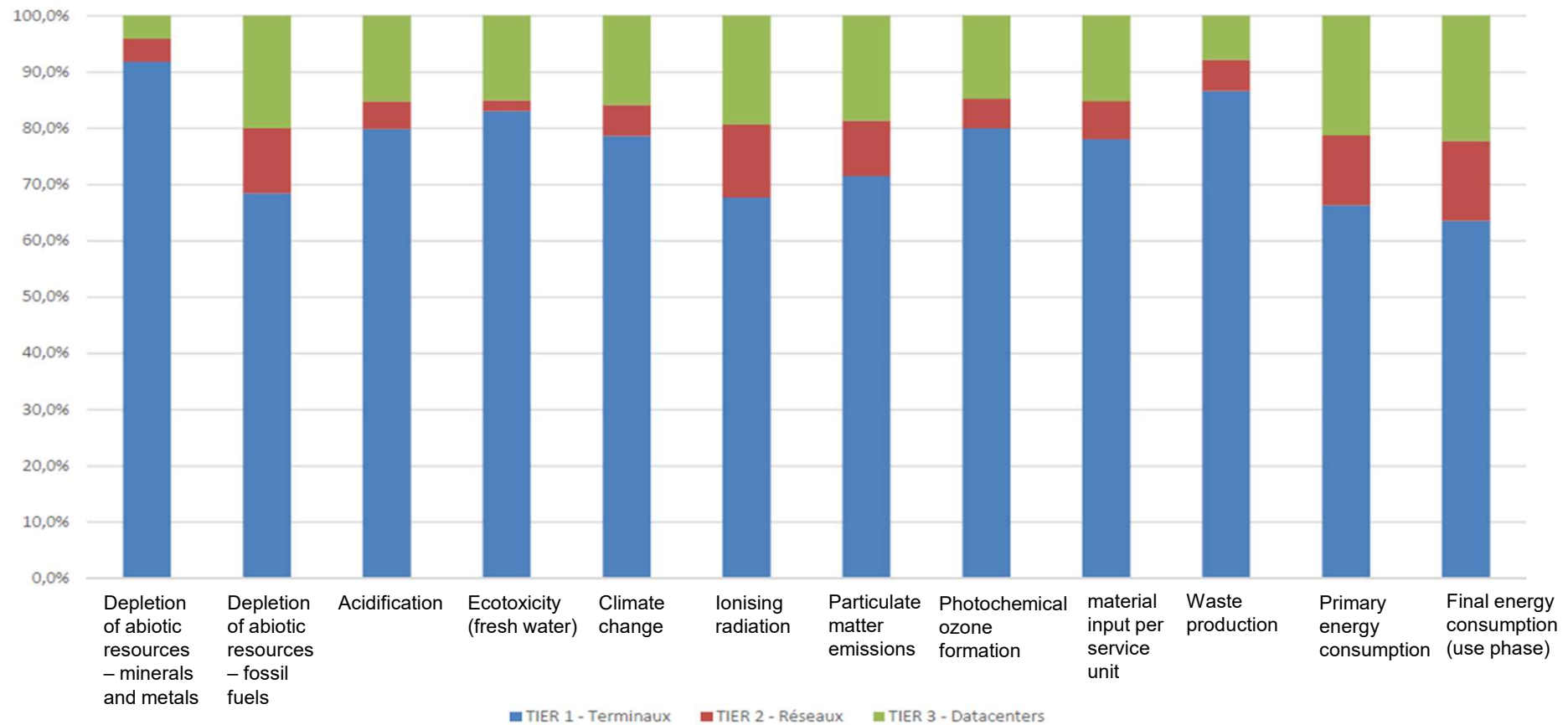
Carbon footprint of ICT in France is

17 Mt CO₂ eq.

**representing 2,5 % of the
national footprint**

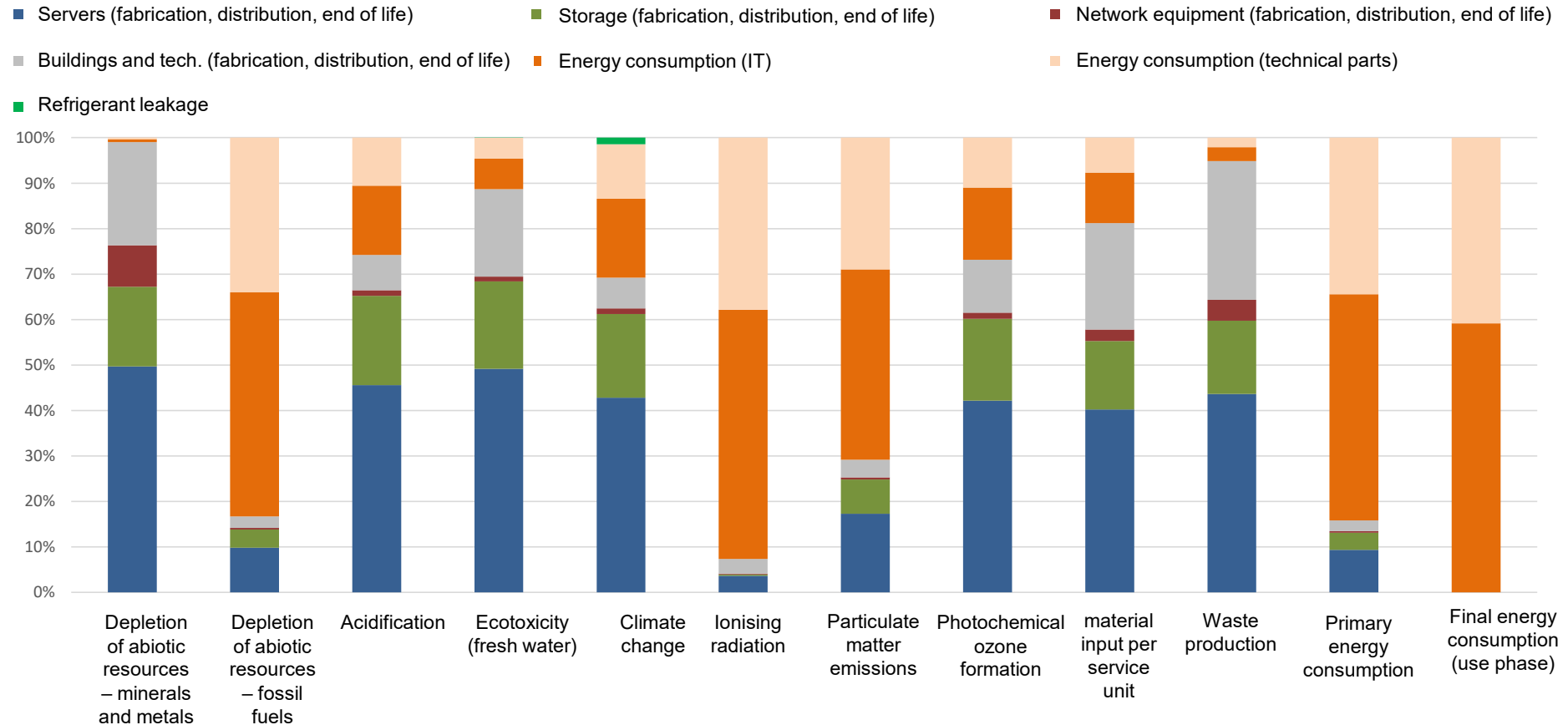


Life cycle assessment of ICT in France



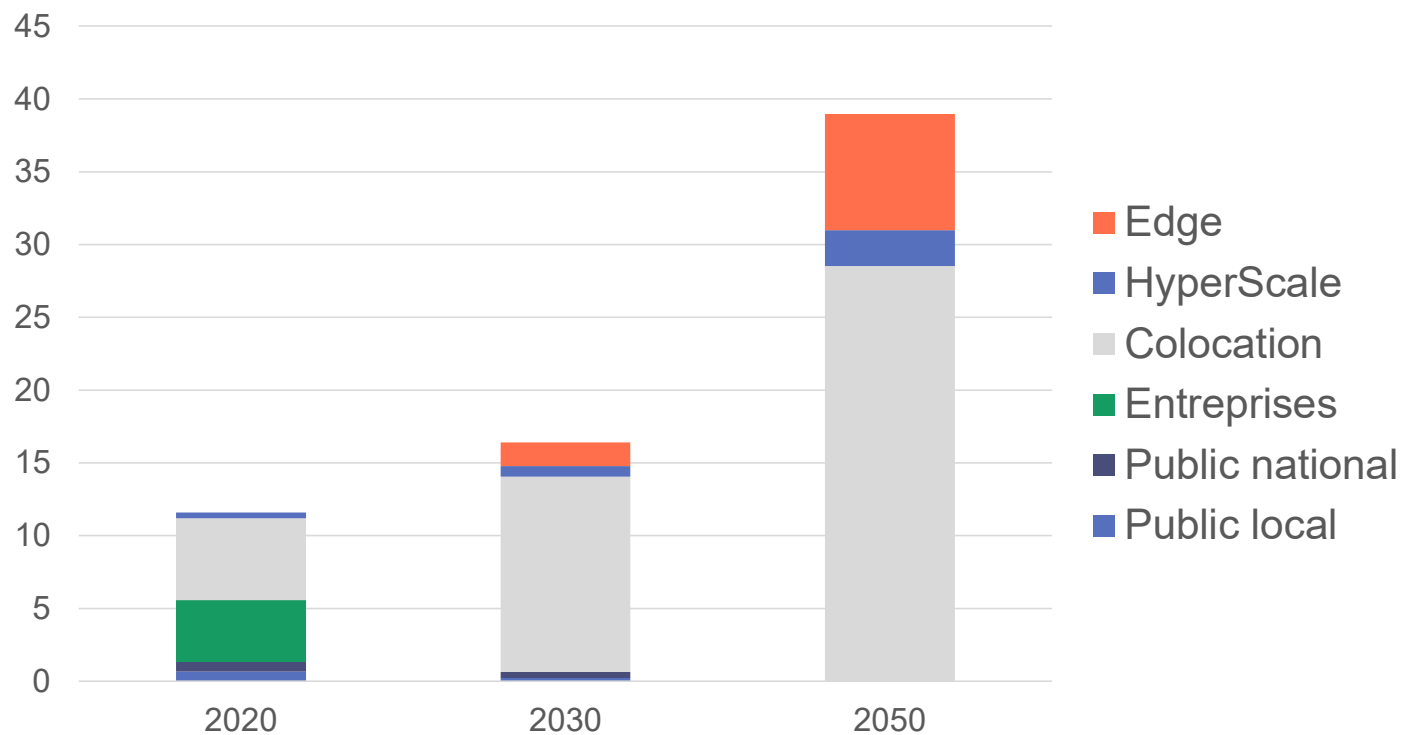
2. Data centers environmental impact

LCA of a data center

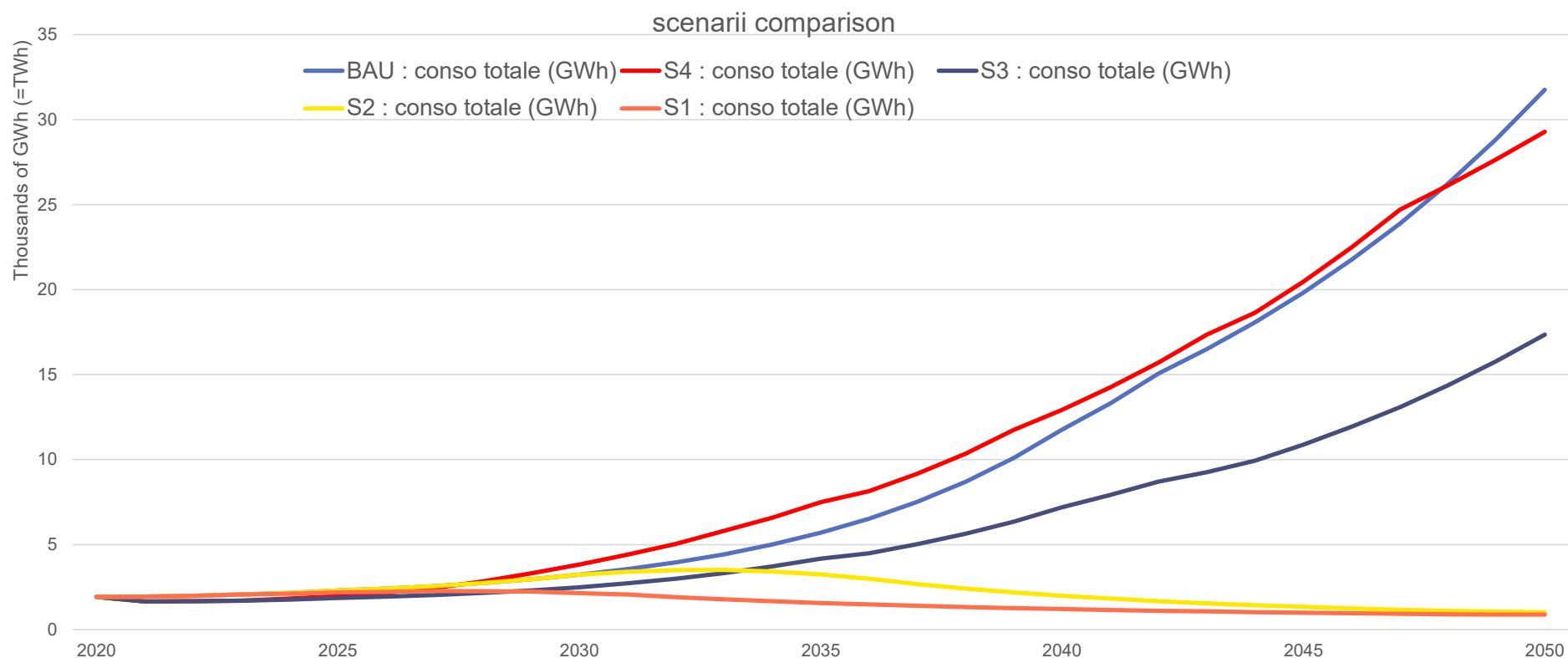


Trend in data center

TWh/year



Several scenarii



3. Regulations to come

Decree on tertiary buildings – national level

For all tertiary buildings with total area $\geq 1\,000\text{ m}^2$. A building may have different activities, i.e. an office building can have 900 m² of offices and 100 m² for IT room, The decree is applicable.

1

Reduction of final energy consumption in respect to a reference year not before 2010

- - 40 % in 2030
- - 50 % in 2040
- - 60 % in 2050

By default, first declaration year is the reference year

2

Consumption lower than a maximum target value in 2030

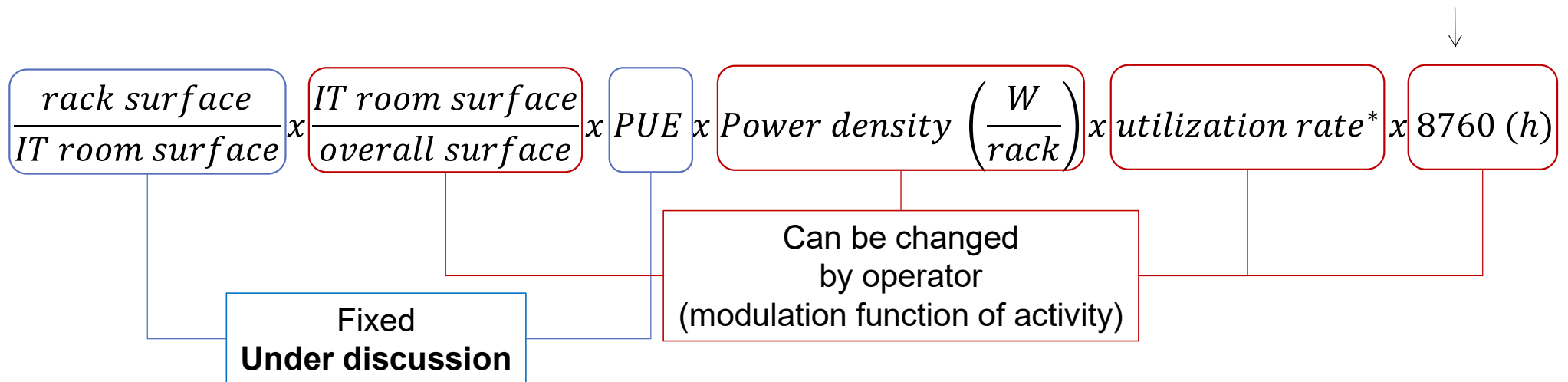
- Expressed in kWh/m²/year
- Fixed depending on the activity
- Considering use intensity change

OR

Overall consumption **maximum allowed**

Overall consumption per data center square meter per year =

Number of hours
of operation per year



Please note that idle consumption is neglected

* Defined as the overall extent to which *data center* servers are being used and is usually recorded as a percentage. Calculated here as the power used over the total power usable, taking into account redundancy.

Tax reduction on electricity – national level

Decree proposal, the tax reduction will be obtained if waste heat is used, PUE is low, water consumption limited ...

Another tax reduction can be obtained for intensive electricity consumers if they engage on a pluriannual energy efficiency plan.



Directive on Energy Efficiency – European level

The European Green Deal and the Climate Law (Regulation (EU) 2021/1119) represents a major leap in that direction. As a part of the 'Fit for 55' package, the Commission is in the process of revising the Energy Efficiency Directive², including setting new obligations that target data centres.

- Waste heat recovery study mandatory
- Reporting requirements would apply to all DCs, old and new, that have a significant energy consumption (surface, PUE, overall consumption)
- **Possibility of MEPS and labelling in a delegated act**

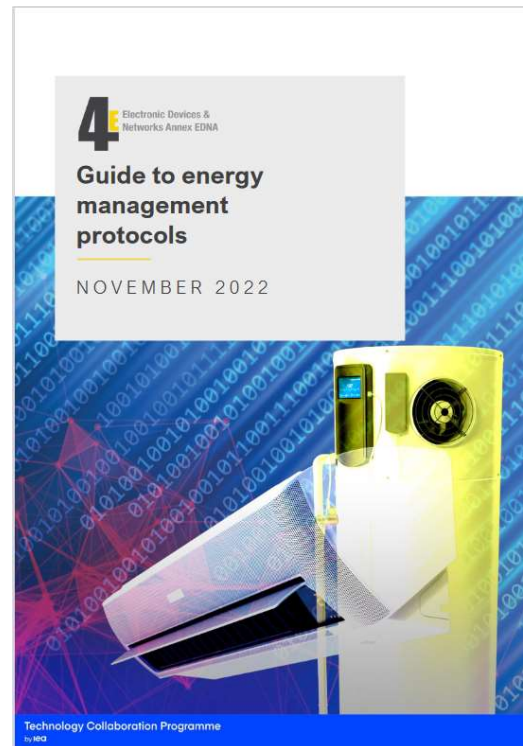
DCEM and ETSI EN 305 200-3-1 ?

Ongoing study by

“Reporting requirements on the energy performance and sustainability of data centres for the Energy Efficiency Directive”

International level - IEA

Objective : to provide technical analysis and policy guidance to members and other governments aimed at improving the energy efficiency of connected devices and the systems in which they operate.



<https://www.iea-4e.org/edna/>

Austria, Australia, Canada, Denmark, France, Japan, South Korea, the Netherlands, Sweden, Switzerland, UK, USA



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DVTD / Service Bâtiment
Bruno LAFITTE
bruno.lafitte@ademe.fr