

Data Center and Computer Servers for a Sustainable Digital Market Transformation



Sustainable Procurement Guidelines for Data Centres and Servers

Intended for: public procurers, technical personnel, policy makers and related officers involved in procurement activities.

Scope: data centres, computer servers and data storage products.

Methodology: developed through a collaborative/consultative approach with key service providers and institutions from the sector:

- *Uptime Institute, France Datacenter, The French Alliance of Digital Industries, EQUINIX, GIMELEC, Google, Microsoft, LBNL, IBM Corporation, etc.*

General content: simple set of recommendations on the technical requirements to be considered during any procurement process, to ensure that the overall product and the system installation are sustainable efficient and climate friendly.

How to use it ? they aim to facilitate the preparation of tender documents issued by governments, state and semi-state-owned enterprises for servers and data storage products. The tender may be issued :

- to select and/or approve of *where to host its data* (for example selecting a colocation data centre)
- and/or when developing a proposal for *building a new data centre*.



Scope of content the Guideline

Performance criteria for data centres and computer servers

- ✓ Power usage effectiveness (PUE)
- ✓ Water usage effectiveness (WUE)
- ✓ Cooling effectiveness ratio (CER)
- ✓ IT equipment energy efficiency for servers
- ✓ Server efficiency
- ✓ Data storage efficiency
- ✓ Power supply efficiency (UPS)
- ✓ Idle state efficiency

Operating conditions

- ✓ Location of data centres
- ✓ Renewable energy factor (REF)
- ✓ Resilience of data centres
- ✓ Modularity
- ✓ Cooling design
- ✓ Operating temperature and humidity range for servers
- ✓ CPU power management criteria
- ✓ Utilization rate of IT equipment (ITEUsv)

- **Other aspects to be considered: Lighting, motors, refrigerant used for cooling, transformers**

KPI values

		2025	2027	2029	2031
Existing colocation Data Centre to host data	PUE	≤ 1.5 HH : ≤ 1.7	≤ 1.4 HH : ≤ 1.6	≤ 1.3 HH : ≤ 1.5	≤ 1.2 HH : ≤ 1.4
	WUE	≤ 1.5 L/kWh	≤ 1 L/kWh	≤ 0.5 L/kWh	≤ 0.2 L/kWh
	REF	≥ 50 %	≥ 60 %	≥ 70 %	≥ 80 %
	CER	≥ 2.5	≥ 2.9	≥ 3.8	≥ 5.7
	ITEUsv	≥ 50 %	≥ 60 %	≥ 70 %	≥ 80 %
New data centre building - By design / after 3 years of operation	PUE	≤ 1.4 / ≤ 1.5 HH : ≤ 1.6 / ≤ 1.7	≤ 1.3 / ≤ 1.4 HH : ≤ 1.5 / ≤ 1.6	≤ 1.2 / ≤ 1.3 HH : ≤ 1.4 / ≤ 1.5	≤ 1.1 / ≤ 1.2 HH : ≤ 1.3 / ≤ 1.4
	WUE	≤ 1.5 L/kWh	≤ 1 L/kWh	≤ 0.5 L/kWh	≤ 0.2 L/kWh
	REF	≥ 50 %	≥ 60 %	≥ 70 %	≥ 80 %
	CER	≥ 2.9 / ≥ 2.5	≥ 3.8 / ≥ 2.9	≥ 5.7 / ≥ 3.8	≥ 10 / ≥ 5.7
	ITEUsv after 3 years	≥ 50 %	≥ 60 %	≥ 70 %	≥ 80 %

HH : Hot and Humid climate (ASHRAE climate zones 0A,1A, 2A, 3A)

Award criteria

Scenario #1: In some countries the public authority specifies the **minimum performance threshold** for an offer to be eligible and the choice is then **driven by the price** → The minimum performance values are those recommended in the Guideline.

Scenario #2: For other countries, the performances can be surpassed by minimum values, making offers competitive → In that case, the policymakers could use of the award criteria set in *Annex 2: Award criteria for tenders*.

KPI	Points	Weighting
Energy management (PUE)	From 2 to 1.2 scored on 5 points	30 %
Cooling efficiency ratio (CER)	From 2.5 to 10 scored on 5 points	20 %
Water consumption (WUE)	From 2 to 1.2 L/kWh scored on 5 points	20 %
Renewable energy ratio (REF)	From 50% to 90% scored on 5 points	20 %
Utilization ratio of servers: IT equipment utilization for servers (ITEUsv)	From 30% to 70% scored on 5 points	10 %

Thank you



Contact

TRANSFORMING MARKETS TO ENERGY-EFFICIENT PRODUCTS



EMAIL

unitedforefficiency@gmail.com



WEBSITE

united4efficiency.org