

# EU Code of Conduct for Data Centres (Energy Efficiency) & Other Animals

Data Centre Expert Day  
June 2018



- Managing Director - Carbon3IT Ltd
- Global “Certified Energy Efficiency Data Centres Award” (CEEDA) Lead Assessor/Auditor
- BSI TCT 7/3 EN50600 - Committee Member
- EU Code of Conduct for Data Centres (Energy Efficiency) - Reviewer/BP Committee Member
- Vice Chair - BCS Green IT SG & Treasurer/Committee - BCS Data Centres SG
- Chair - Data Centre Alliance Energy Efficiency & Sustainability SG
- Sustainability for London (SFL) – Executive Director
- National Data Centre Academy (NDCA) - Technical Director

- <http://www.gridwatch.templar.co.uk/>
- “Brexit could cause **energy shortages** and **higher gas and electricity bills**, says Lords committee”

## Energy....

- “is usually the largest **single** element of operating costs for data centres, varying from...
- **25 – 60%**

- [https://www.techuk.org/images/programmes/DataCentres/Data\\_Centres\\_and\\_Power.pdf](https://www.techuk.org/images/programmes/DataCentres/Data_Centres_and_Power.pdf)



Firstly, what is a “Data Centre”,?

- A home for “digital infrastructure”
- Servers, Networking & Storage
- An electrical system to provide “electrical energy”
- A cooling system
- An Uninterruptible Power Supply (UPS)
- Telecommunications/Network Cabling Systems
- Building Integrity Systems
  - Fire/VESDA/Suppression Systems
  - Security
  - Access Control
- Policies, Procedures & Processes

## To Deliver...

- “Digital Services” to....
  - Internal &
  - External Customers
- At the “lowest possible cost”
- Based on “Risk Profile”
- Logo <http://ictanddigitalstrategy.org.uk/2014/08/delivering-digital-services/>





## Regulation!

- Is there any ?
- Yes.....
- EU – ETS - Emissions Trading System
- EU Member States Interpretation of ...
  - Energy Efficiency Directive Article 7/8
  - (UK ESOS Energy Savings Opportunity Scheme)
- Climate Change Agreement for Data Centres (UK)



## Regulation!

- CRC – Carbon Reduction Commitment
- MPCD (Medium Plant Combustion Directive)
- Minimum Energy Efficiency Standards (MEES)
- TM44 Air Con Units
- Part L Building Regulations
- GPDR as “Data Controllers/Processors”

So doesn't it make sense to be....

- Energy Efficient?
- Yes.....
- Saves Money
- Potential CapEx/OpEx Gains
- Environmental Stewardship
- Innovative
- Benchmarking against peers

## Certification!

### Definition of certify

certified; certifying transitive verb

1 : to attest authoritatively: such as

a : [confirm](#)

b : to present in formal communication

c : to attest as **being true** or as represented or **as meeting a standard**

d : to attest officially to the insanity of

2 : to inform with [certainty](#) : [assure](#)

3 : to guarantee (a personal check) as to signature and amount by so indicating on the face

4 : to recognize as having met special qualifications (as of a governmental agency or professional board) within a field agencies that certify teachers



## Certification!

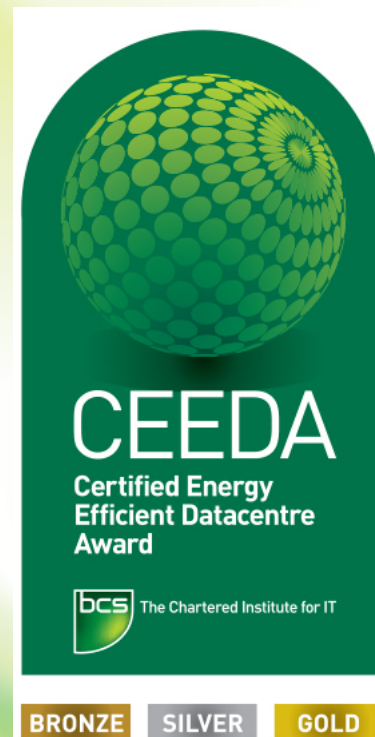




# Data Centre Certifications



International  
Organization for  
Standardization



# Building!



# BREEAM

- • Management
- • Health & Wellbeing
- • **Energy 23.68%**
- • Transport
- • Water
- • Materials
- • Waste
- • Land Use and Ecology
- • Pollution
- • Innovation

- BREEAM Rating % score
- UNCLASSIFIED <30
- PASS ≥30
- GOOD ≥45
- V GOOD ≥55
- EXCELLENT ≥70
- OUTSTANDING\* ≥85
- \* Please note: there are additional criteria for achieving a BREEAM Outstanding rating



# Operations



International  
Organization for  
Standardization

Uptime Institute Symposium Shanghai

1000+ Certifications in over 80 Countries



The image displays eight Uptime Institute certification logos arranged in two rows of four. The top row features four 'TIER' certificates: 'TIER OPERATIONS' (yellow), 'TIER FACILITY' (silver), 'TIER FACILITY' (silver), and 'TIER DESIGN' (red). The bottom row features four 'M&O' (Maintenance & Operations) certificates: 'TIER DESIGN' (red), and three 'M&O' certificates (red). Each logo includes the Uptime Institute logo, the tier level, the certificate type, the client name, the certificate number, the issue date, and the expiration date.

Uptime Institute



# General Management Systems Standards

ISO 9001 – Quality Management Systems

ISO 14001 – Environmental Management Systems

ISO 50001 – Energy Management Systems

ISO 27001 – Information Security Management Systems

ISO 22301 – Business Continuity Management Systems



International  
Organization for  
Standardization

# Design & Build

## EN50600 Series (ISO22237) as Technical Specifications

EN50600 -1 General Principles

EN50600 -2-1 Building Construction

EN50600 2-2 Power Distribution

EN50600 2-3 Environmental Control

EN50600 2-4 Telecommunications Cabling Systems

EN50600 2-5 Security Systems

# Operations



ISO 9001 – Quality Management Systems

ISO 14001 – Environmental Management Systems

ISO 50001 – Energy Management Systems

ISO 27001 – Information Security Management Systems

ISO 22301 – Business Continuity Management Systems

EN50600 Series (ISO22237 Technical Specification)

EN50600 3-1 Operational & Maintenance

# Energy Efficiency





# Energy Efficiency



International  
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Standardization



# Energy Efficiency



## EU Code of Conduct for Data Centres (Energy Efficiency)

- Endorsers
  - Suppliers
  - Trade Bodies
  - Consultancies
  - End Users
- Participants
  - Data Centre Owners/Operators
  - Colocation
  - Enterprise

## EU Code of Conduct for Data Centres (Energy Efficiency)

- 150+ Best Practices
- Management/Administration
- IT Procurement
- Cooling
- Power
- Other power systems
- Building Location/Design
- Monitoring & Measurement



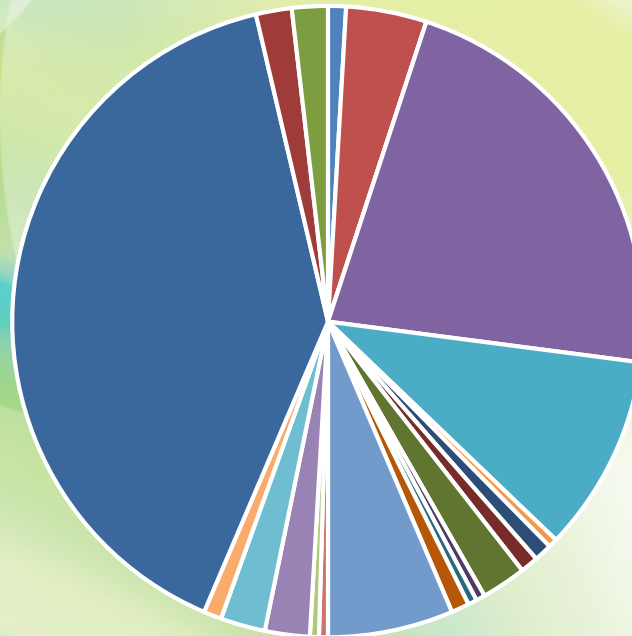
## EU Code of Conduct for Data Centres (Energy Efficiency)

– Over 350 Participants

- EU
- UK
- US
- APAC
  
- US DCEP Programme
- ITU
- SS564 - Singapore

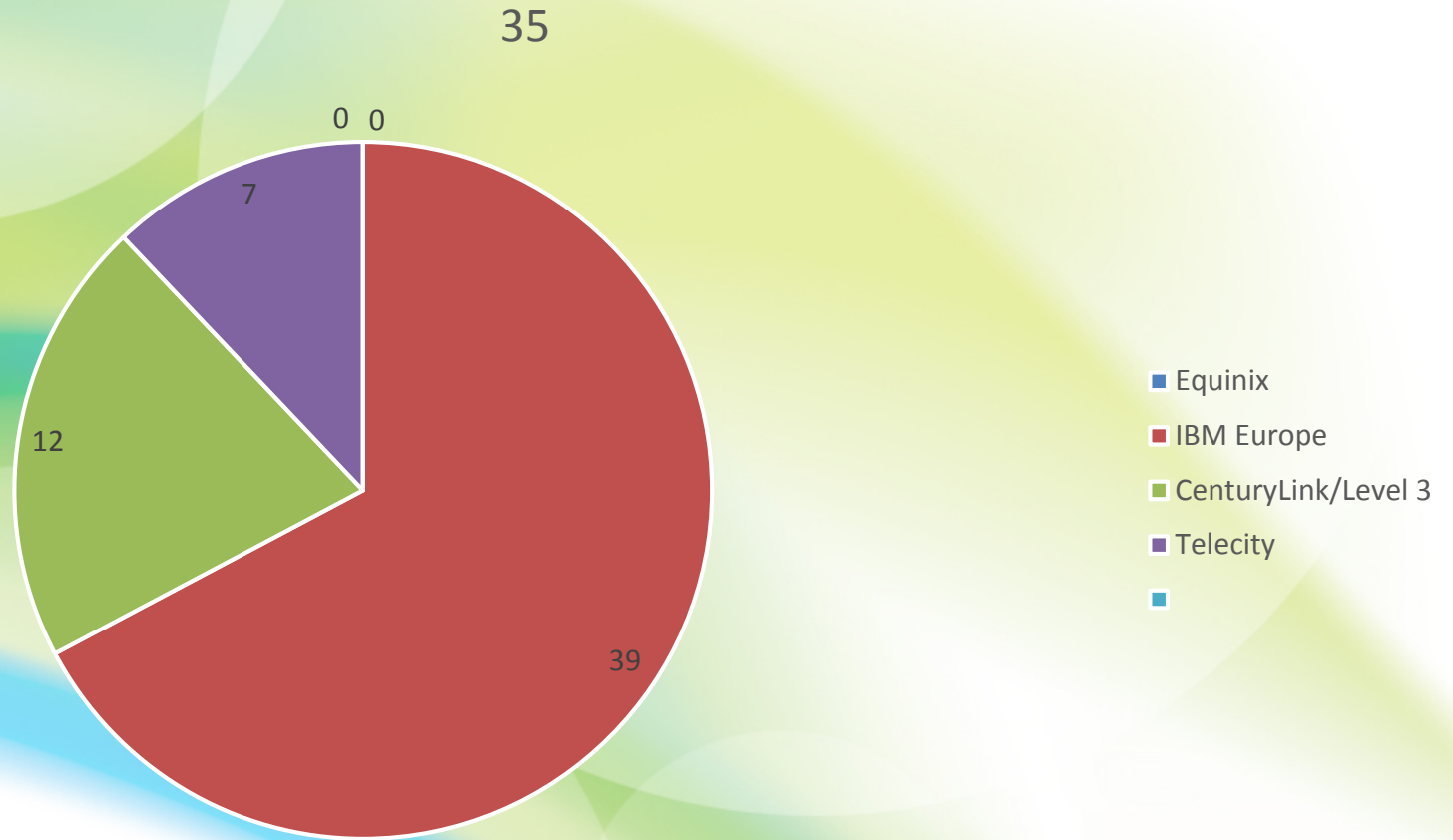
## EU Code of Conduct for Data Centres (Energy Efficiency)

No of EUCOC DC's



■ Austria	■ Belgium	■ EU	■ France	■ Germany	■ Greece	■ Ireland
■ Italy	■ Luxembourg	■ Malta	■ Mauritius	■ Monaco	■ Netherlands	■ Norway
■ Portugal	■ Spain	■ Sweden	■ Switzerland	■ UK	■ USA	■ Poland

## EU Code of Conduct for Data Centres (Energy Efficiency)



# Energy Efficiency





# Energy Efficiency



## CEEDA Assessment

- External Assessments to
  - 75-85 Best Practices
- Reach/Products
- Enterprise
- Colocation Operator
- Colocation Tenant
- Telco
- Design & Build

## PARTICIPANTS INCLUDE



About CEEDA. The Certified Energy Efficient Datacenter Award (CEEDA) is a global assessment and certification program designed to recognize the implementation of energy efficiency best practices in operating data centers. The framework is progressive in terms of sophistication of best practices applied – reflecting the complex and holistic nature of data center operations – and is based on specifications drawn from ASHRAE, Energy Star, ETSI, EUCoD and The Green Grid. The certification is awarded at three levels: Gold, Silver and Bronze, with a certification cycle of two years. In addition to providing a globally applicable benchmark for comparison and harmonization within and across organizations, CEEDA also provides a gap analysis and performance improvement map, helping maintain performance throughout the certification period. For more information on CEEDA please visit [www.ceedacert.com](http://www.ceedacert.com) or contact [info@ceedacert.com](mailto:info@ceedacert.com)

## CEEDA Assessment triggers...

- Management Optimisation Programmes
- Training
  - Energy Efficiency
  - Management
  - Design
- Savings



# PUE



1.8

## Green Grid Metrics

- Carbon Utilisation Effectiveness (CUE)
- Water Utilisation Effectiveness (WUE)
- Water Utilisation Effectiveness Source (WUE<sub>s</sub>)

## Summary

- Energy = **25-60% of Total Operating Costs**
- Lots of **Certifications**
- Lots of **Metrics**

# Summary





# Thank You

- John Booth
- MD/Consultant
- Carbon3IT Ltd
- [www.carbon3it.com](http://www.carbon3it.com)
- @carbon3it Twitter/Skype