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EU Code of Conduct paves way for significant energy savings in Data Centres across Europe

In 2007 Data Centres, housing computer servers for industry, enterprises and administrations across Europe, consumed 56TWh of electricity, close to the yearly total electricity consumption of the Czech Republic. If no specific action to improve the energy efficiency is taken, electricity consumption of data centres is expected to rise to 104TWh a year by 2020. Furthermore, CO₂ emissions from the IT-sector, estimated to be 2% of total global CO₂ emissions, equivalent to that of the airline industry, would increase significantly. The EU Code of Conduct for Data Centres launched today by the European Commission provides guidelines, recommendations and best practices, which could lead to a reduction in energy consumption of data centres of up to 20%. This work is in line with the 2020 energy saving targets making an important contribution within the ICT sector.

The key aim of the Code of Conduct is "to inform and stimulate Data Centre operators to reduce energy consumption in a cost-effective manner without hampering the critical function of the facility". This is achieved through a series of best practice recommendations which focus on design in areas such as software, IT architecture and infrastructure. Industry has responded extremely positively to the code, and a number of operators have already started to implement many of the best practices from earlier drafts of the code of conduct.

The European Commission's Joint Research Centre, is a provider of scientific-technical support to EU policy making and as such has initiated this and other codes of conducts in the energy efficiency area¹. Developed over the last two years, reviewed and refined by a wealth of stakeholders including industry experts from both data centre owners and operators, as well as equipment vendors and Member State experts, the code has become regarded as "the source of information to run an energy efficient Data Centre".

Best practices

The Code of Conduct covers many best practice options. Three of the main areas for energy saving are:

- **IT equipment.** This includes efficient servers and virtualisation: instead of having many servers running at low utilisation, virtual servers are created inside a few servers, thus allowing the server to run at full load, which is more efficient and can result in other servers being switched off.
- **Environmental conditions:** Servers dissipate a significant amount of heat. Currently server rooms are cooled to low temperatures (e.g. 22°C). This strict temperature regime is not necessary as server rooms can operate at 30° and higher degrees of humidity, therefore eliminating the need to "overcool" Data Centres.

¹ Other Codes of Conduct cover Broadband Equipment, Set Top Boxes for Digital TV, External Power Supplies, and UPSs., for more information http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative.htm

- **Efficient management of environmental conditions:** air conditioning and air management is one of the key energy demands. Poorly designed Data Centres mix cold and hot air (as in a normal office), but best practice is to keep them well separated, and to provide cooling exactly where it is needed on the server CPUs. In addition to the extended temperature ranges, Data Centres could run on natural cooling as opposed to cold air produced by chillers.

Further information

The complete code of conduct can be downloaded from:

http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative_data%20centers.htm

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