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Green ICT: Trends and Challenges
(published jointly with Novática*)
Guest Editors: *Juan-Carlos López-López, Giovanna Sissa, and Lasse Natvig*

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CEPIS NEWS

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CEPIS Green ICT Survey – Examining Green ICT Awareness in Organisations: Initial Findings

Carol-Ann Kogelman on behalf of the CEPIS Green ICT Task Force

Green ICT is an increasingly important issue for many organisations across Europe today. This paper presents the initial findings of research to assess how ICT Managers in different countries implement energy efficient methods in their organisations. The CEPIS Green ICT Task Force is conducting this work and these preliminary results are based on 300 responses received so far.

Keywords: CEPIS, Digital Agenda for Europe Green ICT, Energy Efficiency, Europe 2020, Green ICT Task Force, ICT, ICT Manager, Sustainability.

1 Introduction

In recent years, 'being green' has become synonymous with the far-reaching possibilities of ICT in achieving energy-efficiency for the ICT sector itself, and in all other day-to-day activities of citizens, organisations, and government administrations, to name but a few. ICT has a key role in enabling energy efficiency in most areas, including the reduction of its own sector's carbon emissions. Organisations are coming under increasing scrutiny for how they are using energy efficient methods in the day-to-day running of the business, and whether energy is being wasted through various ICT-related processes.

The European Commission has embarked on a number of activities to address the enabling role that the ICT sector can play in diminishing the high carbon emissions of the ICT sector itself, and in various other sectors to become more energy efficient. For example as part of the Europe 2020 strategy with the Digital Agenda for Europe initiative, two specific actions[1] are focused at analysing and managing the energy consumption of the ICT sector and other major emitting sectors. In addition to these highly effective actions, the European Commission is also currently working on developing guides to calculate the environmental footprint of products[2] and companies[3] in general.

The European Commission's Europe 2020 strategy has targeted three key areas for sustainable growth:

1. 20% increase in energy efficiency
2. 20% reduction of greenhouse gas emissions
3. increase the share of renewables by 20%

Organisations in particular have a responsibility in ensuring the energy efficient use of their ICT products, processes and services as much as possible. Since ICT Managers of organisations are usually responsible for the management, installation and maintenance of ICT hardware and software, they are ideal candidates for assessing whether a culture of energy efficiency exists in European organisations. The Council of European Professional Informatics

Author

The CEPIS Green ICT Task Force carries out the strategic objectives of CEPIS around Green ICT, including but not limited to promoting the concept of Green ICT across Europe and contributing to the protection of the environment through the creating and disseminating of good practices. The Task Force is composed of a group of experts from various CEPIS Member Societies across Europe and led by Manolis Labovas from the Greek Member Society, Hellenic Professionals Informatics Society (HePIS).

Members of the group include Matei Dimitriu from *Asociatia Pentru Tehnologia Informatiei si Comunicatii in Romania*; Francisco Esteve and Luis Fernández-Sanz from *Asociación de Técnicos de Informática*, ATI, in Spain; Laura Georg from Swiss Informatics Society, Panagiotis Georgiadis from HePIS; Peter Lawless from the Irish Computer Society; Marco Mevius from German Informatics; Volker Schanz from *Informations technische Gesellschaft im Verband der Elektrotechnik Elektronik Informationstechnik* in Germany; Giovanna Sissa from *Associazione Italiana per l'Informatica ed il Calcolo Automatico*, AICA, in Italy; Arjan Van Dijk from *Vereniging van Register Informatica* in The Netherlands; Chris Wallace from British Computer Society; and Brian Warrington from Computer Society Malta.

The Green ICT Task Force has its own **LinkedIn group**, at <http://www.linkedin.com/groups?mostPopular=&gid=3899686&trk=myg_ugrp_ovr>.

This paper has been authored by **Carol-Ann Kogelman** from the CEPIS Secretariat on behalf of the Green ICT Task Force. Contact <carolann.kogelman@cepis.org>

> "This paper presents the preliminary results of the survey conducted by the CEPIS Green ICT Task Force"

[1] See <http://ec.europa.eu/information_society/newsroom/cf/pillar.cfm?pillar_id=49&pillar=ICT%20for%20Social%20Challenges>.
[2] See <http://ec.europa.eu/environment/eussd/product_ footprint.htm>.
[3] See <http://ec.europa.eu/environment/eussd/corporate_footprint.htm>.

> “Since ICT Managers of organisations are usually responsible for the management of ICT HW and SW, they are ideal candidates for assessing whether a culture of energy efficiency exists in European organisations”

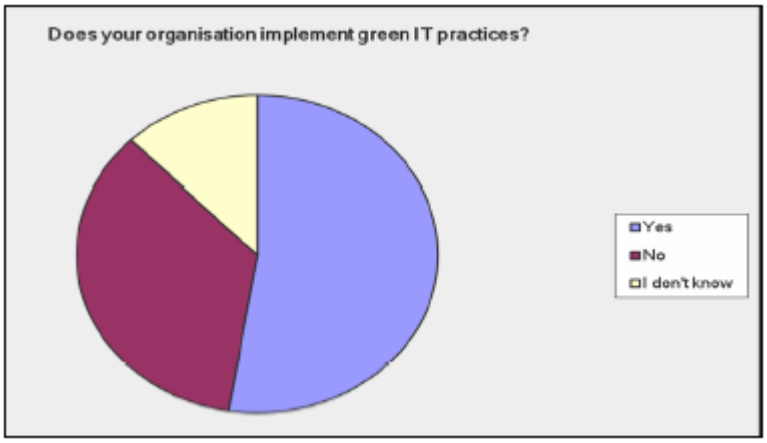

Figure 1: Implementation of Green IT Practices.

Societies, CEPIS, in 2011 through its Green ICT Task Force launched the CEPIS Green ICT Survey. The CEPIS Green ICT Survey is aimed at ICT Managers, to examine awareness regarding energy consumption & energy efficiency of ICT equipment & policies within organisations. The survey's final results will be compiled into a pan-European report depicting how ICT Managers in different countries implement energy efficient methods in their organisations. This can provide useful business information that many ICT managers may find important, in order to see how their organisation's ICT usage & green ICT practices compare to organisations in other countries.

Members of the CEPIS Green ICT Task Force brought together their expertise on the topic of Green ICT and created this survey that includes over three dozen comprehensive questions. The Task Force Members represent over 10 different countries in Europe, including Germany, Greece, Ireland, Italy, Malta, Romania, Spain, Switzerland, The Netherlands, and UK. Since launching the survey, the Task Force aims to achieve at least 50 respondents in each of their own countries. Such a result will achieve a fair and balanced sample of responses to create a comparative analysis of Green ICT awareness in organisations across Europe today. The data collection phase for this research is still ongoing and so far the survey has reached a substantial number of countries through Task Force Members' efforts. Here below we provide you with the initial findings so far. The survey is still open, and after reading these exciting results we encourage you to contribute to this ground-breaking research project by taking the survey at the following link: <http://www.surveymonkey.com/s/CEPISGreen ICTSurvey>.

Over 300 survey respondents so far have provided information on a range of topics by answering questions in the survey such as "*Does your organisation implement green IT practices?*" to simply "*Do you use recycled printer supplies/cartridges?*". However the Green ICT Task Force is open to more participation for this research to be

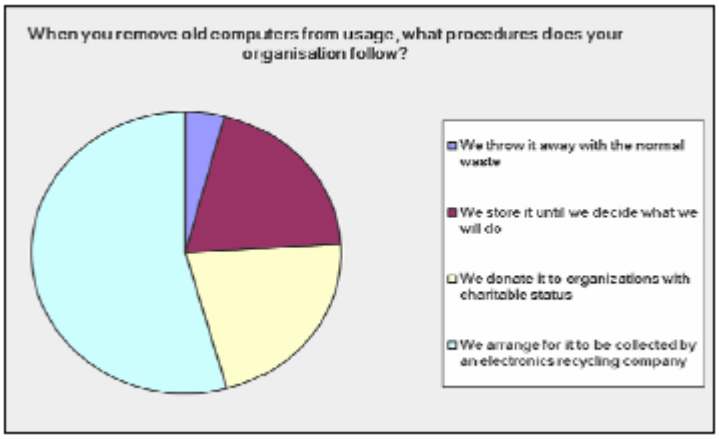

Figure 2: Procedures for Removal of Old Computers.

> “The European Commission has embarked on a number of activities to address the enabling role that the ICT sector can play in diminishing the high carbon emissions of the ICT sector itself”

> “Over a third of organisations in Europe do not implement green IT practices, the most prominent reason given is that there is no official legislation in their countries enforcing green IT practices”

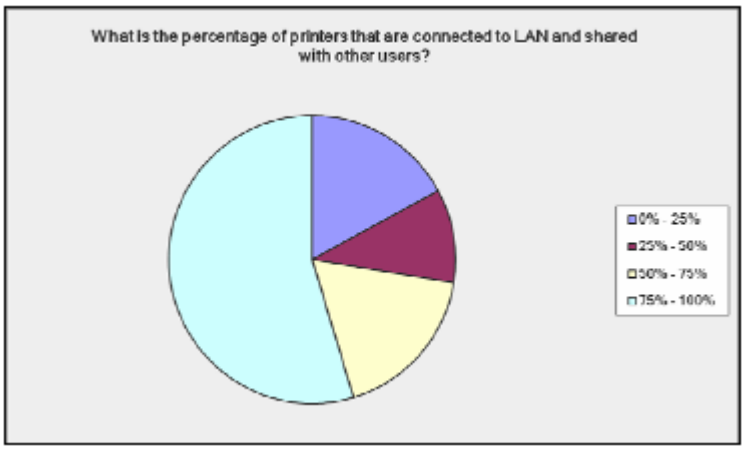

Figure 3: Printers connected to LAN and shared with Other Users.

of greater value.

Below you may find an overview of the findings we have compiled so far during this on-going research process.

2 Initial Findings of the CEPIS Green ICT Survey

2.1 Energy Managers/Officers

An energy manager or officer plans, regulates and monitors energy use in an organisation. Of the approximately 300 responses that have been received so far, almost three quarters do not have a person dedicated to this task for their organisation.

2.2 How ‘Green’ is your Organisation?

It appears that from the responses, just over a third of organisations in Europe do not implement green IT practices, the most prominent reason given is that **there is no official legislation** in their countries enforcing green IT practices. The second most given reason is that **there is no pressure from management or customers** to follow such practices. (see Figure 1.)

2.3 Disposal & Use of ICT Products

Over half of organisations who responded to the survey do actually dispose of their old computers with electronics recycling companies. And just over a fifth of respondents donate their old computers to charitable organisations. (see Figure 2.)

Over two thirds of organisations do use recycled printer supplies/cartridges. Further almost half of respondents return their used ink cartridges to companies that recycle. It appears that many organisations make an effort to use recycled products, but also to recycle used products themselves.

From initial responses it appears that organisations are aware of using printers in an energy efficient manner. Over half of respondents answered that 75 – 100% of the printers used in their organisations are LAN connected and shared with other users (see Figure 3). Just over a third of the

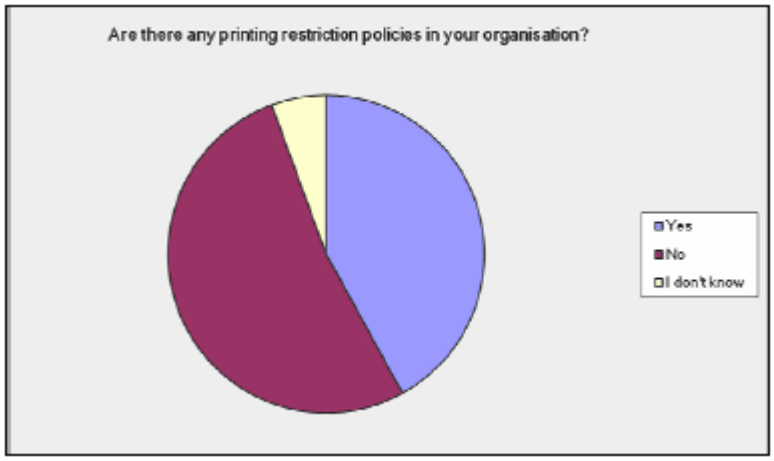

Figure 4: Restrictions to Use of Printers.

> “Less than one fifth of organisations actually monitor how employees reduce their energy consumption”

printers also have a double-sided print functionality, but only two fifths of those have the double-sided printing option as the default option.

Interestingly over half of respondents confirmed that there are no printing restriction policies within their organisations.

With those organisations that do have printing restrictions in place, almost half stated that the reduction measure is that "There is a specific number of users that have the right to print". Some other 'reduction measures' from organisations included avoiding printing as much as possible, and using common sense when printing. (see Figure 4.)

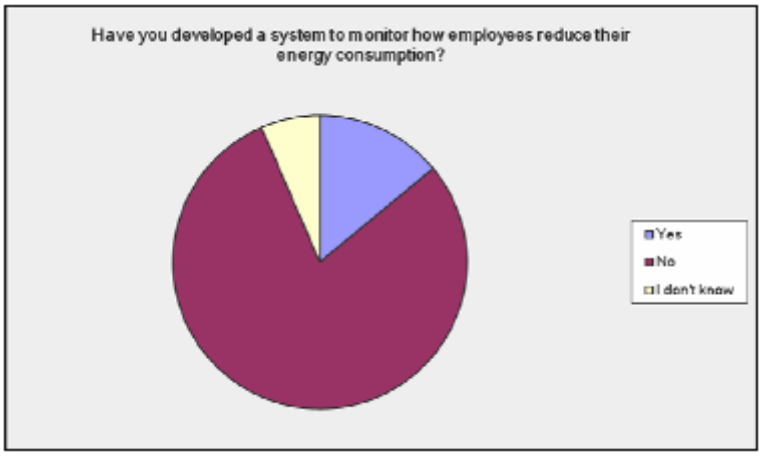

Figure 5: Monitoring Reduction of Energy Consumption by Employees.

2.4 Employees' Energy Consumption

During the survey ICT Managers, (the main target audience for this survey) are asked to determine the level of awareness of other employees within their organisations towards energy efficiency. The responses so far show that there is an even split with regard to whether or not computer users have been informed/ trained in energy consumption reduction procedures. In any case just under half of all respondents agree that their employees have been trained in some way.

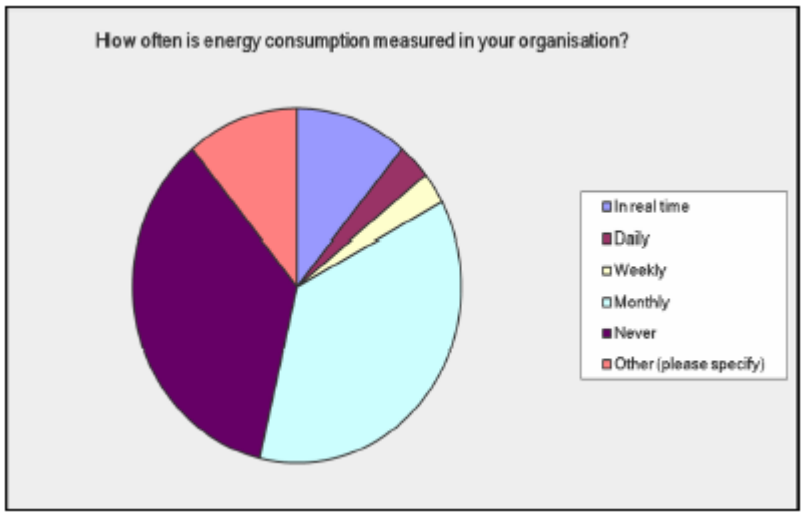

Figure 6: Frequency of Energy Consumption Measurement.

Less than one fifth of organisations actually monitor how employees reduce their energy consumption (see Figure 5).

Of those organisations that monitor employees, around 40% noticed that the energy consumption was reduced after three months. Yet two thirds did not publish these results.

Within their own departments, ICT Managers responded that over two-thirds do not monitor the energy consumption in any of their areas such as data centres, or even within the whole IT department itself.

Significantly, overall energy consumption is measured within most European organisations only on a monthly basis. However over a third of organisations seem to never measure the energy consumption and a significant proportion of respondents did not know if energy consumption was measured or not. (see Figure 6.)

ICT Managers' decision making processes in purchasing products are also investigated during the survey. From the responses we have received so far, two thirds of respondents take into account the product's energy consumption before deciding to purchase. They also rate knowing the level of energy consumption of a product as important and very important. Yet almost half do not take into consideration whether the product is made of recycled materials, but those that do, rate this value as important. (see Figure 7.)

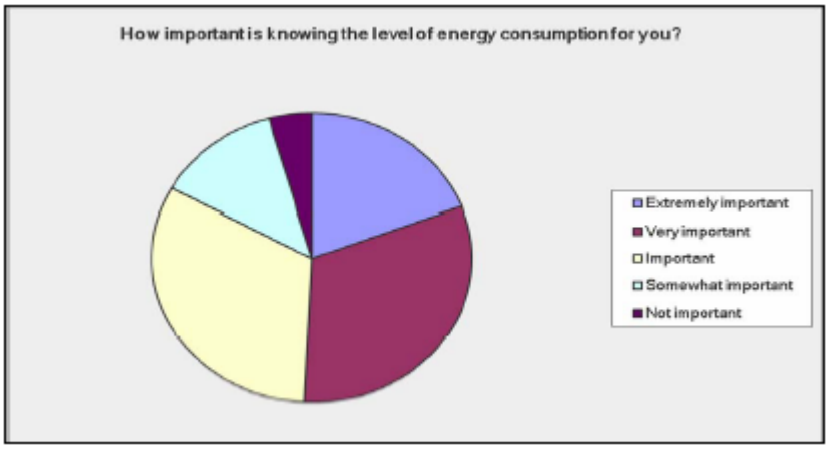

Figure 7: Importance given to Knowing the Level of Energy Consumption.

3 Conclusion

We have described the initial results of the CEPIS Green ICT Survey. The Green ICT Task Force has been heavily involved in disseminating and continuing to disseminate the survey link to ICT Managers within their respective societies. If you are interested in seeing the final outcome of this pioneering research project, we encourage you to check our **Green ICT Survey** page[4] in future.

The Green ICT Task Force also has its own **LinkedIn group**[5], where regular updates will appear about upcoming activities, events, and the progress of this research.

We invite you to take the **CEPIS Green ICT Survey** at <http://www.surveymonkey. com/s/CEPISGreenICTSurvey>!

Annex: Invitation to Digital Trends 2011 – Green ICT and Cloud Computing

CEPIS and the Hellenic Professionals Informatics Society (HePIS), the Greek CEPIS Member Society, are cohosting **Digital Trends 2011** in Athens, on 5 December 2011. This is the first Forum of its kind in Greece and has been established to create dialogue on the contribution of the ICT sector to economic growth, increased productivity, and the advancement of a creative digital culture. In particular the conference aims to focus on how the ICT sector contributes to the adoption of 'Green' and 'Cloud' practices, and the strengthening of the overall role of professionals within the business community.

Digital Trends 2011 will focus on the business dimension of Cloud Computing and Green ICT through offering ICT and business professionals a useful guide to the introduction of an organisation to a new business environment. Issues to be discussed at this event include relating to Green ICT include:

- How are green practices being implemented?
- What are the benefits of Green IT?
- Why are Green IT practices not implemented in many organisations?

We invite you to visit the **Digital Trends 2011 Website** at <http://www.digital trends.gr/>.

[4] See <http://cepis.org/index.jsp?p=1152&n=2667>.

[5] See <http://www.linkedin.com/groups?mostPopular=&gid= 3899686&trk=myg_ugrp_ovr>.