Conclusions, way forward and information gathering

Paolo Canfora
Marco Dri
Ioannis Antonopoulos
Pierre Gaudillat
jrc-ipts-emas@ec.europa.eu
Sustainable Production and Consumption Unit
Institute for Prospective Technological Studies (IPTS)
Joint Research Centre (JRC)
European Commission

The group

General comments on this work

More reference to the work on standardisation
Need to target not only companies of this sector but also from other sectors (e.g. banks, car manufacturers) using relevant amount of ICT equipment

Definition of the scope and overview of the sector

Scope is in general OK!
Distinguish between economic sectors (e.g. manufacturing of electronic and electrical equipment, telecommunications, software development, etc.), assets (data centres, network infrastructure, end-user devices, software, etc.) and activities with in companies (e.g. business travel, general office activities, etc.)

Add overview table to guide organisations in finding the relevant BEMPs in relation to the size and type of the organisation (applicability)

Consider the use of the terminology ‘greening of’ and ‘greening by’
Environmental aspects of the telecommunication and ICT services sector

Add power lines and buildings to the environmental pressure to landscape, land use and habitats

Overview of the chapter on energy consumption in data centres

Use Data Centres (DC) definition from Code of Conduct (CoC)
Include references from ETSI
Ensure we include BEMPs for all types of organisations (including small server rooms)

Chapter on energy consumption in data centres

How to refer or to complement to the CoC?

Option 1
Only one BEMP making reference to the implementation of the best practices included in the CoC.

Option 2
Develop BEMPs making reference to each of the clusters of the best practices in the CoC

Option 3
Complement each existing best practice listed in CoC by developing the applicability, economics, cross media effects sections.

Improve the energy performance of ICT equipment (besides data centre equipment)
5.2 Procurement for sustainable equipment

BEMP in general is OK but too computer oriented, need to broaden to all types of equipment.

Select the equipment taking into account the utilisation and partial load efficiency (by using total cost of ownership).

Consult DG GROW on the eco-design work for servers.

Existing ecolabels do not cover all the equipment. Add minimum energy performance standards that do exist.

Include performance based procurement criteria.

UK government gives endorsements to companies which respect and follow the CoC – Bob to send some info regarding public procurement in UK.

5.3 Improving the energy efficiency of ICT equipment

BEMP generally is OK.

Potential indicator might be: number of people that use one device normalised by the total number of users in the company/organisation.

Important aspect is the interface between software and hardware (consider the development of a new BEMP on green software - John to send info on some examples).

Consider the decommissioning of old equipment.

Cross-cutting measures for minimising energy consumption and carbon footprint (besides data centres)

6.2 Use of alternative renewable energy

BEMP generally is OK!

Do not use Carbon Usage Effectiveness (CUE) as an indicator.

Use Renewable Energy Factor (REF).

Consider whether gas Combined Heat and Power (CHP) should be included as a BEMP.
6.3 Reducing energy losses due to electricity conversion

BEMP is maybe not so relevant for Europe (more for the US), although still valid for networks
Need to improve the applicability reflecting the type of infrastructure
Reflect better the content of CoC

6.4 Energy monitoring and management

BEMP generally is OK, but maybe bring forward and start with energy management
Automated systems are not necessarily best practices
Focus on taking action and changing behaviour
Some key indicators could be:
- Implementing an energy efficiency strategy and management system
- Setting a special budget line for energy efficiency investments
- % of the load of the facilities monitored
Address the service quality levels of the data demand

Day 2

Improve raw material consumption and waste management performance

7.2: Improving waste prevention
The BEMP needs to be clarified in its scope (i.e. all ICT equipment is included, refurbishment and repair, LCA)
Donating to charities and selling at low price second hand equipment (e.g. to employees) could be investigated more – TWG to provide info
Consider standardisation of equipment, e.g. use of common connectors
Flavio can share the experience they have about their requirements to ease recyclability and indicators
Kurt can share best practices for reuse of servers
Bob can provide info on a UK government initiative for reselling and reuse of ICT equipment (similar to an Ebay platform)
**Improve raw material consumption and waste management performance**

7.3 Improving WEEE collection, recycling and recovery

In general OK

Evaluate if the use of eco-passport could be an element of the best practice (i.e. examples of companies using it)

JRC to share the documents on the best practices for the manufacturing of EEE

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**Improve the energy performance of telecommunication networks**

3.2 Reengineering wired networks for introducing more energy-efficient technologies

The BEMP needs to be revised – ensure it goes beyond business as usual

Consider rebound effect

Consider covering dynamic energy management

Review the structure of the network and clarify which parts are considered

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**Improve the energy performance of telecommunication networks**

3.3 Designing and managing an energy-aware wireless network architecture

Not really a best practice - needs to be reconsidered

Co-sharing and site-sharing could be considered

Investigate what can be done to reduce the co-existence of different networks (requires change to regulatory requirements)

Management of the network – network analytics could be an area of investigation

Indicators could be: energy use per subscriber, energy use per station

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**Improve the energy performance of telecommunication networks**

3.4 Dynamic traffic optimisation through green routing and radio resource management

Revise the BEMP to make sure it is not business as usual (especially for the wireless network)

Dynamic scheduling would not be accepted by consumers
Improve the energy performance of telecommunication networks

Other proposals
Compacting and replacing access nodes
Information to consumers about energy consumption of modems and different technologies (e.g., fiber, copper cable, power line)
Softwarisation of the network

Address other environmental impacts of telecommunication and broadcast infrastructures

8.2 Reducing the effects of ICT infrastructures on landscape
Reconsider this BEMP in light of comments to be provided by the TWG
Jack to send specific comments

Address other environmental impacts of telecommunication and broadcast infrastructures

8.3 Reducing noise and electromagnetic radiation emissions from telecommunication and broadcast networks
Need to reconsider the BEMP – choices driven by public acceptance and local conditions
Consider whether the topic should be acknowledged or not cover it at all
Jack to send specific comments
Control the radiations emitted by equipment during its life-cycle could be an area of investigation – in general not only related to radiations
Flavio can send some info on testing mobile phones and network equipment

Improve the energy and environmental performance in other sectors

Chapter 9 can include a general BEMP (targeting companies in the telecommunication and ICT services sector) about making environmental improved services available and promote them to customers. Some more specific examples can then be added in the text.
The aspect of green software should instead be included in the ‘Greening for’ part of the document.
Sub-groups to be involved in the further development of the document

Energy consumption in data centres

Experts interested to be involved in further discussions
Paolo Gemma  Roger Tiple
Raffaele Bolla  Billy McHAllum
Miroslav Sviezeny  Alena Trifiró
Ian Bitterlin  Rabih Bashroush
Bob Crooks  Roel Castelein
Artemis Voulkidis  Loukia Nikiforaki
Niek van der Pas  Lex Coors
Mark Acton

Improve the energy performance and minimising the environmental impacts of ICT equipment (besides data centre equipment)

Cross-cutting measures for minimising energy consumption and carbon footprint (besides data centres)

Experts interested to be involved in further discussions
Paolo Gemma
Colm McDaid
Bob Crooks
Jack Rowley
Alena Trifiró
Roger Tiple
Flavio Cucchietti

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Niek van der Pas  Lex Coors
Mark Acton
Improve raw material consumption and waste management

Experts interested to be involved in further discussions
Paolo Gemma
Colm McDaid
Bob Crooks
Jack Rowley
Alena Trifiró
Roger Tipley
Flavio Cucchietti

23 November 2015

Improve the energy performance of telecommunication networks

Experts interested to be involved in further discussions
Paolo Gemma
Raffaele Bolla
Stéphane Courion
Jack Rowley
Alena Trifiró
Flavio Cucchietti

23 November 2015

Other environmental impacts of telecommunication and broadcast infrastructures

Experts interested to be involved in further discussions
Paolo Gemma
Stéphane Courion
Jack Rowley
Alena Trifiró
Flavio Cucchietti

23 November 2015

Improve the energy and environmental performance of other sectors (greening by)

Experts interested to be involved in further discussions
Colm McDaid
Artemis Voulkidis
Flavio Cucchietti
Bob Crooks
Jack Rowley
Roel Castelein

23 November 2015