EXECUTIVE SUMMARY

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Created at the request of Mrs Christine Lagarde, Minister of Economy Industry and Employment, in agreement with Mr Jean-Louis Borloo, Minister of State, the Working Group on “Eco-responsible Development and ICT” (DETIC) has sought to extend previous work on this subject[1] and explore as widely as possible concerted actions envisaged by the government, stakeholders in the ICT sector and users.

It gathered a large number of participants, as part of a whole group, and three workshops, more specifically responsible of:

- Components (Working group 1)
- Computer centres (Working group 2)
- The appropriation of ICT by corporations, particularly SMEs, to reduce their ecological footprint (Working group 3).

The group has sought consensus and, notably in working group 3, gave prominence to the information of the actors and the dialogue, involving major contractors, industry associations and consumers.

This document consists of reports of three workshops, preceded by a report of the Plenary Group that includes the main recommendations.

A number of general points apply to all workshops.

- Steadily technical progress in the area of the components have enabled the design of products ever more energy efficient and whose release is environmentally friendly. However, despite these gains, substantial and rapid growth of the "digital society" is such that a significant part of the French electrical consumption is now devoted to its operation. This justifies the fact that steps of progress and moderation in the ICT industry are maintained and even amplified, and an analytical approach of integrating ICT projects being conducted.

- Therefore it is necessary to encourage research and innovation in this area, particularly through European programs (Eureka), Community (PCRDT ERDF), or use of research tax credit (CIR).

- Emphasis was also placed on the need for a systemic approach and the importance of developing software that optimizes the need for hardware.

- This focus, combined with a strong demand for skills in this strategic area for the future requires an appropriate change in initial and continuing training of engineers and technicians and their awareness of the issue of eco-design.

- In parallel, an international standardization activity must be continued and even amplified, together with the support for eco-labels. It is necessary to know how to evaluate in order to develop these concepts.

[1] Including the “France Numérique 2012” plan, the workshop results of MEDEF, the report CGTI/CGEDD/Arcep... The group did not attempt to define precisely the concept of ICT, but has implicitly adopted a broad ICT, close to the definition of SESSI (which may includes the components used in industry), while the Gartner's plate is smaller (IT and telecom, without broadcasting and the embedded components in vehicles, medical scanners...).

- The usage aspect must be taken into account and the group recommends to promote eco-friendly ICT equipments to environmental professionals (through the “TICPME 2010” program, through the dissemination of professional associations guides, and through public procurement) and provide the public with information enabling it to act (publication of good practice guides, display of energy performance of products as is already practiced for white goods).

More specifically, an approach to development and modernization of data centres is globally underway, and should promote the most modern techniques, encouraging through tax incentives, innovative data centres. Since this sector is strategic for the future, France which has a low-carbon energy should better leverage its competitive advantages in the area (prices, quality of networks, available skills) to promote the installation of data centres in France and contribute to its growth and the development of its territory.

It also appears that the diffusion of ICT usage is widely involved in the development of a more eco-friendly society. In this context, a number of recommendations aimed at greater use of ICT:

- Promote remote working with a dual ecological and land planning purpose; in particular, promote telecentres, in particular through a support at their start up and through the production of interoperability and ergonomics standards.

- In the field of construction, promote the use of standardised digital mock-up of buildings and neighbourhoods, both in the design and in the operation phases, to optimise their energy consumption. Using powerful and intelligent tools should also help at optimising the energy consumption, as well as the deployment of home networks and their interfacing with "smart meters". An international standardization work should be fostered to guarantee the future interoperability of these home networks.

- In the field of transport and logistics systems the use of optimised systems for the management of transported goods and travels (optimisation of shipments, of routes...) and standardization of electronic labels should have a substantial impact on the environment.

- The process of dematerialization of information exchanges and administrative procedures should be continued.

- Finally, the action of State and of local governments may be exemplary and proved to be a strong lever to promote all the actions recommended by the group.

The report identifies a number of promising avenues to be explored. It is therefore the beginning of a process and not its culmination.

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LIST OF THE RECOMMENDATIONS

Recommendation 1:

Establish a policy to support the ICT industry for more sustainable components and products by:

- **Taking advantage of those programs such as PCRDT, ERDF, EUREKA, ITEA.**
- **Including environmental criteria in the selection of innovative projects (OSEO...).**
- **With an emphasis on interoperability and hardware & software co-design**.

Recommendation 2:

Be more present in international standards bodies (including through an extension of the tax credit on research activities to such tasks) and promote standards and labels (such as Energy Star, EPEAT), including those that incorporate an approach LCA (life cycle analysis).

In parallel, monitor business practices to fight against counterfeiting, misleading labels and non-compliance to regulations.

Recommendation 3:

Promote the usage of ICT for environmental gains through:

- **Promoting towards professionals (especially via the program TICPME 2010 and through public procurement) ecological materials both for their own consumption and for the environmental footprint of their uses.**
- **Launching, at State level, a study to establish benchmarks and to disseminate the results to the general public and professional federations (construction, energy, transport...).**
- **The implementation by industry associations and the diffusion in other areas of good practice guides highlighting the gains that can be achieved through ICT.**

Recommendation 4:

Promote towards the general public the best practices to save energy by:

- **Disseminating professional associations guides to make optimum use of ICTs by the general public.**
- **A better information by extending to brown goods the obligation already in place for white goods to display energy performance, particularly for PCs, broadband access and electronic communication terminals (ongoing EC approach).**
- **The creation of an eco-comparator for cell phones. Computer manufacturers will provide useful data for the realization of an eco-comparator for PCs.**
- **An action to enforce labels (DGCCRF)**
- **An improved ergonomics of products.**
- **The promotion of management and control tools enabling customers to be protagonists of their own ecological footprint.**

Recommendation 5:

- **Intensify the initial training (engineers, technicians) in the field of ICT, and include the concepts of eco-design (energy efficiency, hardware + software co-design and responsible usage).**
- **Develop training materials for members of associations (construction...) and promote their inclusion in the priorities of joint training bodies (OPCA).**

Recommendation 6:
Act at the state and local communities level through exemplary behaviour (impact of new regulations, public orders referring to "green" standards, waste management, development of telepresence usage in the administration...).

Recommendation 7:
- **Widely deploy ICT components to build on their steady progress in energy efficiency.**
- **Recommend their wide use in intelligent systems projects throughout the economy.**
- **Addressing environmental issues on a systemic level.**
- **Assess the energy efficiency and carbon footprint of ICT products from 2012.**

Recommendation 8:
Encourage the installation of data centres in France with three goals of sustainable development, competitiveness of France and land planning. Notably use for data centres the new simplified procedure for classified facilities. Further study the reflection to create an environment in favour to the establishment of data centres.

Recommendation 9: Thinking about the data centres of the future
- **Establish an observatory on the "Cloud computing.**
- **Changing the rules to take into account the" Internet of Things" and the "Cloud computing".**
- **Supporting innovation around innovative data centres.**

Recommendation 10:
Promoting teleworking in a dual ecological and planning purpose, and promoting the development of telecentres (support at start up).

Recommendation 11:
Promote the use of standardized digital mock for buildings and neighbourhoods, both in the design and the operation phases for optimizing their energy consumption.
Encourage the actors to define the concept of "home network" and their interfaces with the various devices involved (including "smart meters").

Recommendation 12:
Promote the control of electric energy consumption through the widespread use of intelligent tools for measuring, displaying and driving energy consumption of apartments, buildings and neighbourhoods:
- **Home networks.**
- **Sensors interconnected by standardized interfaces.**
- **Simple display the consumptions per usages.**

Recommendation 13:
Promote "seamless" dematerialization to the entire logistics information chain, taking into account the electronic labels.

Recommendation 14:

Evaluate of the carbon footprint of the company.

Contribute (particularly at the EU level) to develop measurement tools for consistent comparisons between companies and integrate assessments of the carbon footprint of ICT equipments and services in a comprehensive impact study on the sustainable development of the Economy.

Recommendation 15:

Generalizing the dematerialization of all chains of information exchange, contracts, or administrative documents (working on authentication tools, interoperability and agree on standards for trade).