



## *Green ICT & ICT for Green Ecotech, Energy & Environment*

Smart metering, smart grid and sensor technology are key enablers for the vast introduction of distributed green energy production and consumption: solar cells, wind mills, etc, hence our participation in the Smart Grids project and other projects to come. Intelligent sensor networks and buildings have been the subject of research in the WBA project (Wireless Building Automation), amongst others.

A number of Art&D projects (allowing artists to explore the creative opportunities new technologies are able to offer) explore the virtual world and immersive experiences: Virtual Reality/Real Virtuality, Dark Matter, Photography Beyond the Still Image and Faces of Relief. These projects enable the consumption of arts and culture without the need for building, traveling and public gathering.



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## The environmental impact of ICT

Lots of products and processes tend to leave an "ecological footprint". Information and Communication Technology (ICT) is a key enabler in lowering these effects. But as ICT uses up 4% of the total energy production (taking into account the complete ICT life cycle, from production to disposal) green ICT 'on its own' should also receive our specific attention.

To lower energy consumption, optimize the usage of materials and enhance the quality of life is therefore one of the major challenges at hand. Planet is one of the three P's of the triple bottom line model (Savitz) next to People and Profit. IBBT wants to help create a sustainable society by working on these social, environmental and economic aspects of ICT services. Thanks to our user-centric approach, we aim to offer new experiences while ensuring sustainable development.

We need to leverage these results to the fullest. We will therefore strengthen our partnerships with umbrella organizations and other research institutions such as Flanders Institute for Logistics (VIL), ITS Belgium, Flanders Drive, DSP Valley and IMEC.



## Green ICT

To enhance sustainability in ICT must of course be our first mission. We should take the whole lifecycle (production, usage and disposal) into account rather than just the power consumption. And we need to make sure we don't deprive the user's quality of experience. Quite the contrary, it will even increase user comfort.

The E2E QoE (End-2-End Quality of Experience) and Video Q-SAC (Video to the home – Quality Sensing, Aggregation & Control) projects have already looked at advanced fixed and wireless thin client solutions and economical devices. This is also part of the EU funded project Mobithin. The EU funded Bone project is looking into energy efficient ultra high capacity backbone networks based on optical technologies.

It is clear that the way forward is to integrate these (and similar) developments into a global eco-system and to do a further optimization of the processes and organizational arrangements.

## ICT for Green

An even bigger added value lies in putting ICT solutions into action to optimize all kinds of other processes, in the context of mobility, logistics, healthcare, multimedia, or any other. Reducing the need to travel around, developing better telecommunication conferencing, enhance the possibilities for distance learning and telework and many other solutions may lead to this. While we need to ensure and even enhance an optimal "live" involvement and submersion at the same time. New media applications and interfaces will allow for an unobtrusive merger of the virtual and the physical world.

The NextGenITS project develops and demonstrates a number of next generation ITS services (Intelligent Transport Services) through intelligent traffic and dynamic road tolling. Improvements in the logistics chain and the optimization of transport modalities can be equally productive, especially when solutions can be found to unite the public benefit with the commercial interest of individual organizations.