

# The ETNO CORE Energy Task Force

## Goals and main activities

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## About ETNO

- The **ETNO** (European Telecommunication Network Operator) represents the principal **policy group** for **Europe's leading** networks and services **providers**
- The association (established in **1992**) currently accounts:
  - **40 member** companies in 35 countries
  - a total **turnover** of about **€250 billion** a year
  - **1.000.000 employees**
  - two thirds of total sector investment



# The ETNO CORE Energy Task Force

- Created since **2004** by the signatories of the ETNO Sustainability Charter
- Currently under the ETNO Sustainability WG
- Focused on the following **goals**:
  1. **decrease** further the **energy consumption** of the ICT branch
  2. **motivate society** to make use of the existing potential of Green ICT
  3. develop new **solutions** to **increase the energy saving** impact of ICT
- The Group mainly develops **benchmark activities** and shares knowledge/**best practices** among its participants



[2010 Energy Report \(click here\)](#)

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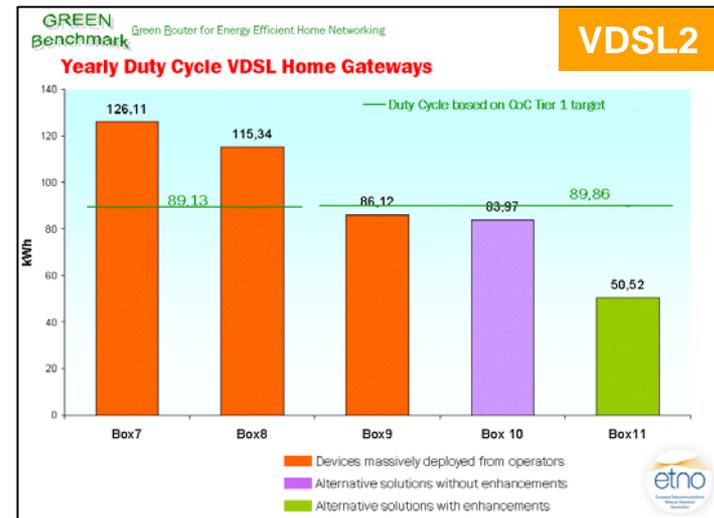
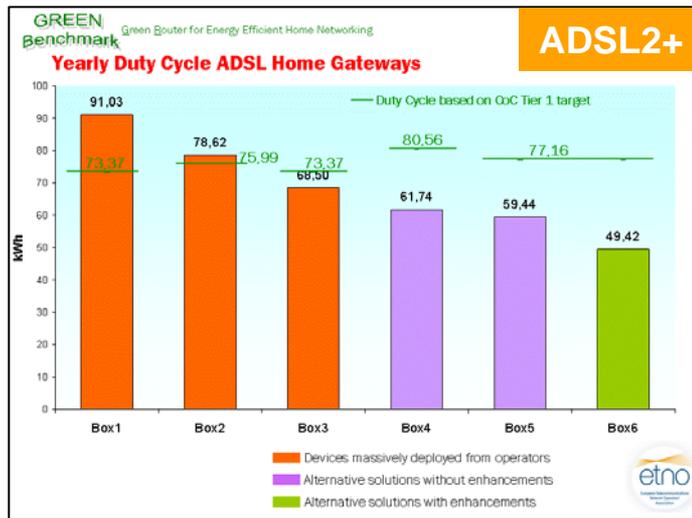
# **Towards Energy Efficiency**

## **Examples of joint activities**



# The G.R.E.E.N.<sup>(\*)</sup> Benchmark initiative

- Goal: to provide a **snapshot** of current state of the art in **energy efficiency of Home Gateways (HG)**
- Developed with the **support** of the Home Gateway Initiative (HGI)
- **Measures** compared with power targets set by the **EC CoC BB**



→ The test results show a **clear improvement trend**

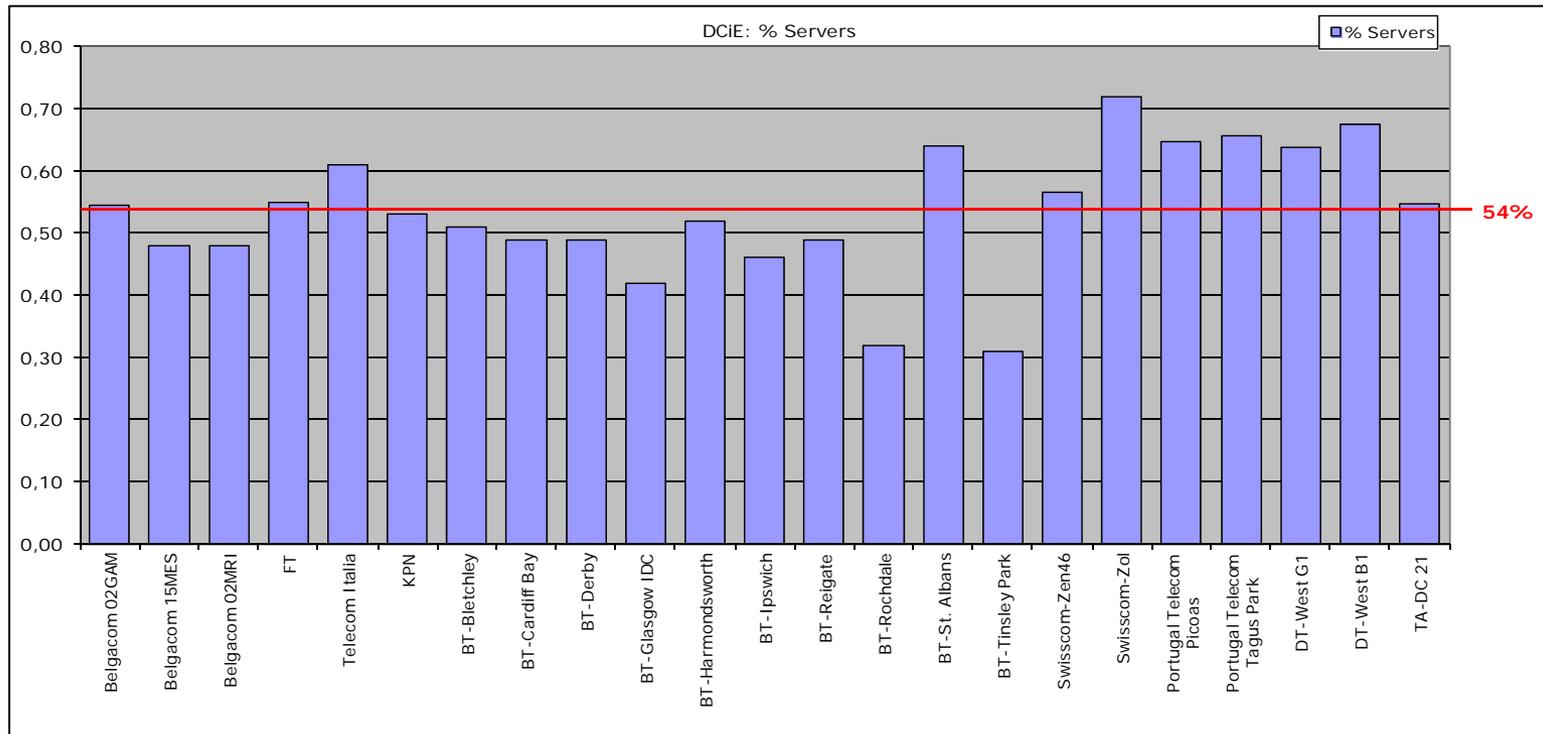


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<sup>(\*)</sup> Green Router for Energy Efficient home Networking

# Benchmarking on Data Centres

→ Goal: to compare the EE and the technologies/solutions adopted in the Operators' largest Data Centres

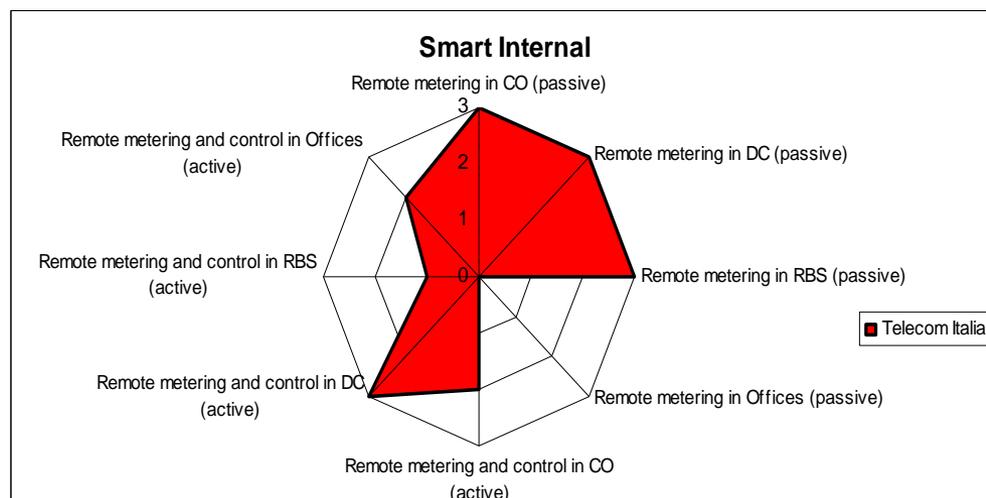


→ The comparisons have consequently brought to new different actions aimed at **improving the DC's performances**



# Benchmark on Smart Business Areas

- Goal: to reach a **better understanding** of the different projects/ activities carried on by the ETNO ETF members on this topic
- **Two areas** are investigated: **Smart “internal”** and **Smart “offerings”** (towards Utilities, Residential Customers, Municipalities,...)
- For each item it is reported whether it is planned, in trial or already commercially available



# Benchmark on Energy Management

→ Goal: to collect from each Company the **current approach** towards the energy management together with the **best possible one**



Policy & Strategy	Nr	Best Practice on: Responsibility of TOP-Management & Energy Policy	
Defined best practice	1	The energy policy is defined und written down by the TOP-Management	
	2	Scope and limits of Energy ManagmentSystem (EnMS) were determined	
	3	Energy policy has been communicated to all are involved	
	4	Commitment of the top management to continuous improvement of energy efficiency	
	5	A management representative (Energy Manager) was appointed - he reportes to TOP-M	
	6	EN 16001 has been established	
	7	Required resources (staff, specialized skills, budget) are provided by TOP-M	
	8	Explicit definition of comply with legal requirements	
	9		
	10		
		Implementation level Best practice (%)	Answers from ETNO-members
	Nr		Comments
Implementation level of Best Practice	1	50	Improve the energy-efficiency until 2020 in DT-Fixed-Net by 20% (Target 2020 = PUE 1,4)
	2	100	UPS and Cooling Fixednet and DC
	3	100	Staff, Serviceprovider and Customer are informd by Top-Management
	4	50	in preparation, planed for 9/2011
	5	100	yes, an leading engineer has been appointed
	6	50	planed in 2011
	7	100	yes
	8	100	Top-Management has designed Code o Conduct
	8		
	8		
	Points (av)	81	



# GHG Reporting and savings from ICT services

## → Goals

- to gain a better understanding of the degree of detail of the GHG reporting from different ETNO members
- to create an algorithm to calculate/report savings from 'green ICT' products or services. These savings are part of the Scope 3-reporting of GHG emissions

Green ICT services
Videoconference
Teleworking
Cloud services
Field Force Autom

Operator	Buildings (CO <sub>2</sub> )	Cars	Electricity	Business travel	Commuting	Third party deliveries	Use of end-user equipment	Savings from Green ICT
Scope	1	1	2	3	3	3	3	3
Cable&Wireless	■	■	■	■	■	■	■	■
KPN	■	■	■	■	■	■	■	■
Swisscom	■	■	■	■	■	■	■	■
Telecom Italia	■	■	■	■	■	■	■	■
Telia Sonera	■	■	■	■	■	■	■	■
Telenor	■	■	■	■	■	■	■	■

\* Telenor has calculations available for the interested customers.

■ = systematic external reporting

■ = reporting available

■ = reporting planned

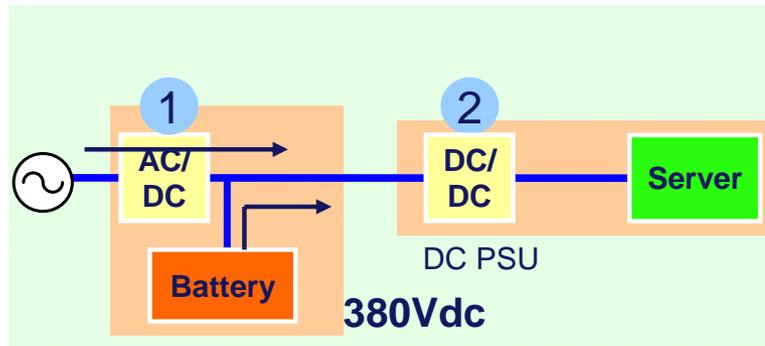
■ = no reporting



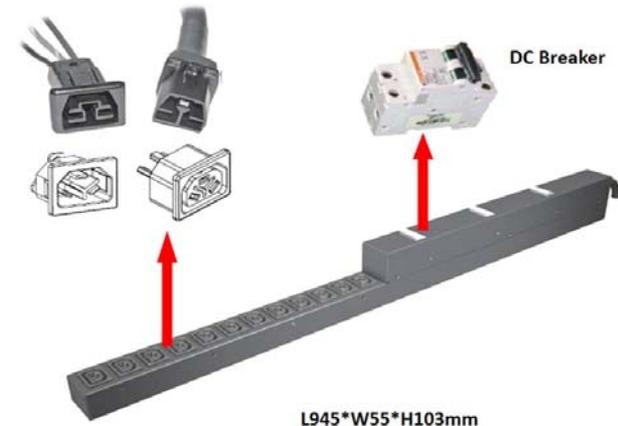
# HVDC features and roadmaps

→ Goal: to achieve a better understanding on

1. HVDC (up to 400 VDC) models and roadmaps
2. HVDC compliance to relevant standards
3. HVDC power inlet connector and power cord types
4. HVDC efficiency and MTBF vs 48 VDC or 230 VAC
5. Recommendations for HVDC power generation and distribution within facilities

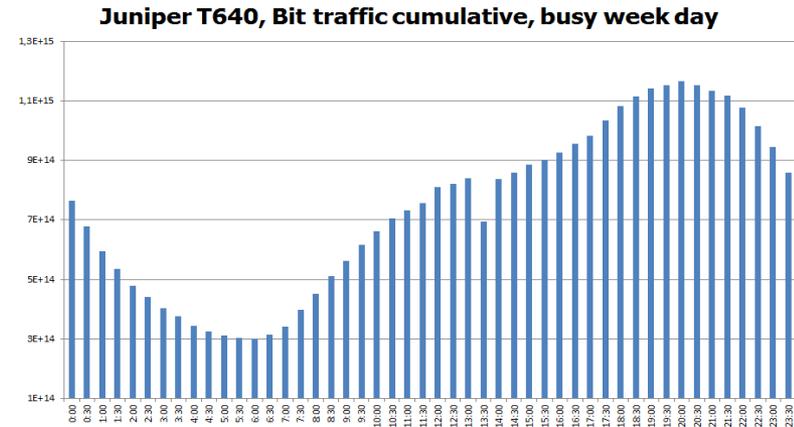
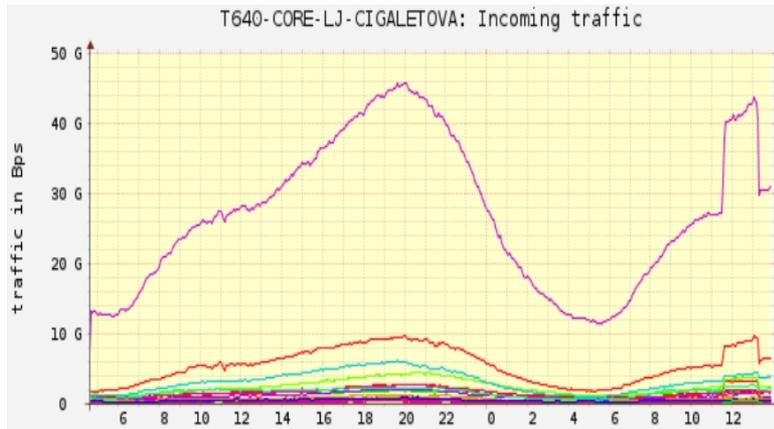


380Vdc Feed Power Architecture



# Correlation between traffic and power consumption

→ Goal: to push Vendors towards a stronger relation between traffic and power consumption



→ As an example, an analysis from Telekom Slovenije on a router highlighted that during 24h:

- the total **traffic variation** was greater than **380%** (10 - 48 Gbit/s)
- the total **power consumption variation** was only **0,4%** (3kW – 3,048kW)

→ A letter has therefore been sent to many Vendors



# **Towards Energy Efficiency**

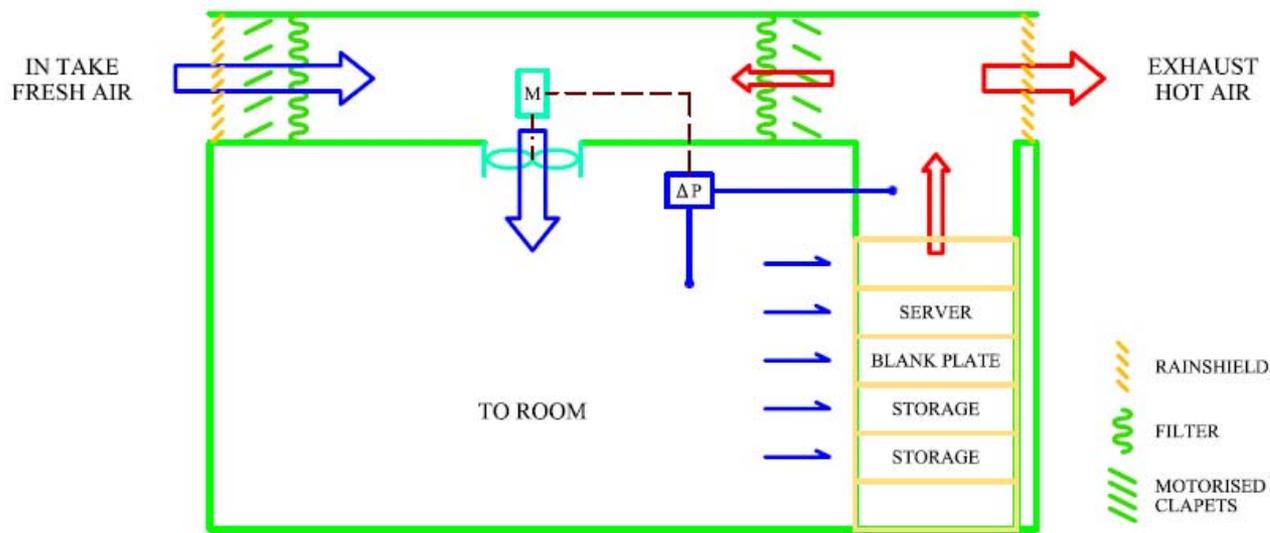
## **Examples of projects from single Companies**



# Full Free Air Cooling of Data Centers

belgacom

- A small scale DC has been built by Belgacom & Sun Microsystems, using **Full Free Air cooling** to hugely reduce the energy consumption
- Use of ETSI EN 300 019 class 3.1 (allowing a room T of up to 45°C)



- **Expected Energy Saving: -40%** compared to the traditional cooled DC



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# Green ICT Services: The KPN New Way of Working



- KPN has implemented a new approach in which **employees** are more **measured by their results** and **not by their presence**
- Adjustments to the **virtual workplace** (laptops, conference cards, smart phones, facilities for collaboration and teamwork)
- **10,000 KPN employees involved** with 15,500 videoconference meetings



- **Expected Energy Saving: almost 6%** for the entire Dutch offices assets



# PEM cell base stations at Magyar Telekom

- MT has installed **PEM cells in 11 RBS.**
- First conclusions:
  - the estimated **PBT** of PEM fuel cells is roughly **5 years** (including savings from cooling)
  - **possible fuels** are: hydrogen, methanol, hydroplus, biogas, natural gas
  - **not only PEM cells**, also DMFC, SOFC, MCFC and PAFC...
  - ...but only the PEM starts very quickly without significant energy loss
  - the **availability is much higher than utility electric grid** (99.999995% vs 99%)



# The ORYX Project - Sustainable solar BTS program



- **1.354 solar Base Transmission Stations (BTS)** have been ordered in 2011<sup>(\*)</sup> and 1.000 are operating across 16 countries in the AMEA region
- Providing **potential coverage to 2.2M people**
- For each BTS plant producing an **average surplus of 25%**, Orange will evaluate to provide this energy to meet local needs



- **Expected Benefits: savings of more than 30,000 tons of CO<sub>2</sub>**

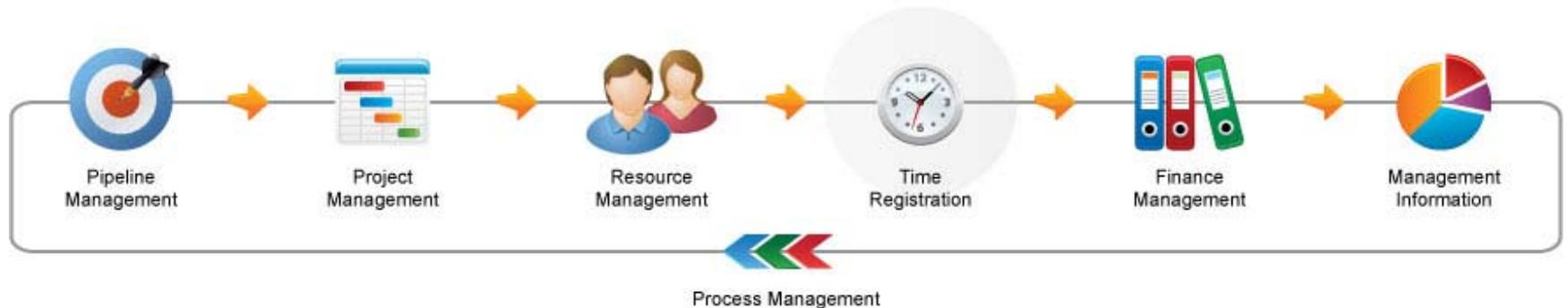
<sup>(\*)</sup> the number has increased to 2.000 in 2012



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# PSTN defragmentation

- Project aimed at **compacting the PSTN lines in CO**, switching off empty line cards and reducing therefore the total energy consumption
- The **PBT is less than 1 year**; estimated **12M€ savings in 5 years**
- **Several secondary benefits:**
  - reduction of faults
  - floor space for sale
  - less batteries needed



# Telecom Italia Green Logo



- 2011: Launch of Telecom Italia's first line of environmentally friendly products.
- The first "Telecom Italia Green" product is the new **ADSL Home Access Gateway**.



Mean energy consumption per product reduced by **42,9%**

Power consumption:  
ON state = 7W  
low power = 4,45W

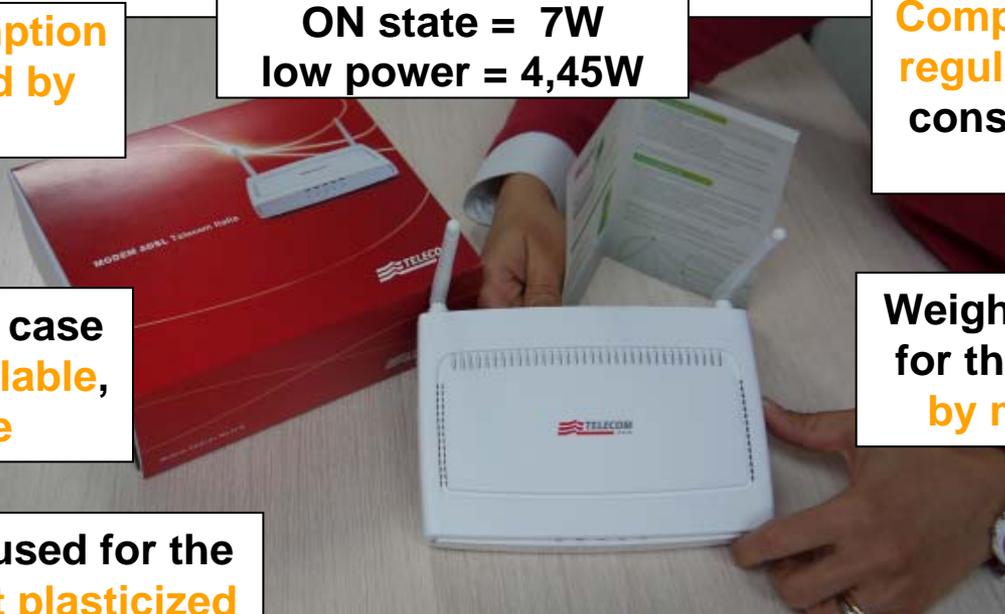
Compliant with future regulations on power consumption for the OFF state

Material used for the case **homogeneous, recyclable, and halogen-free**

Weight of **plastic** used for the case reduced by more than **60%**

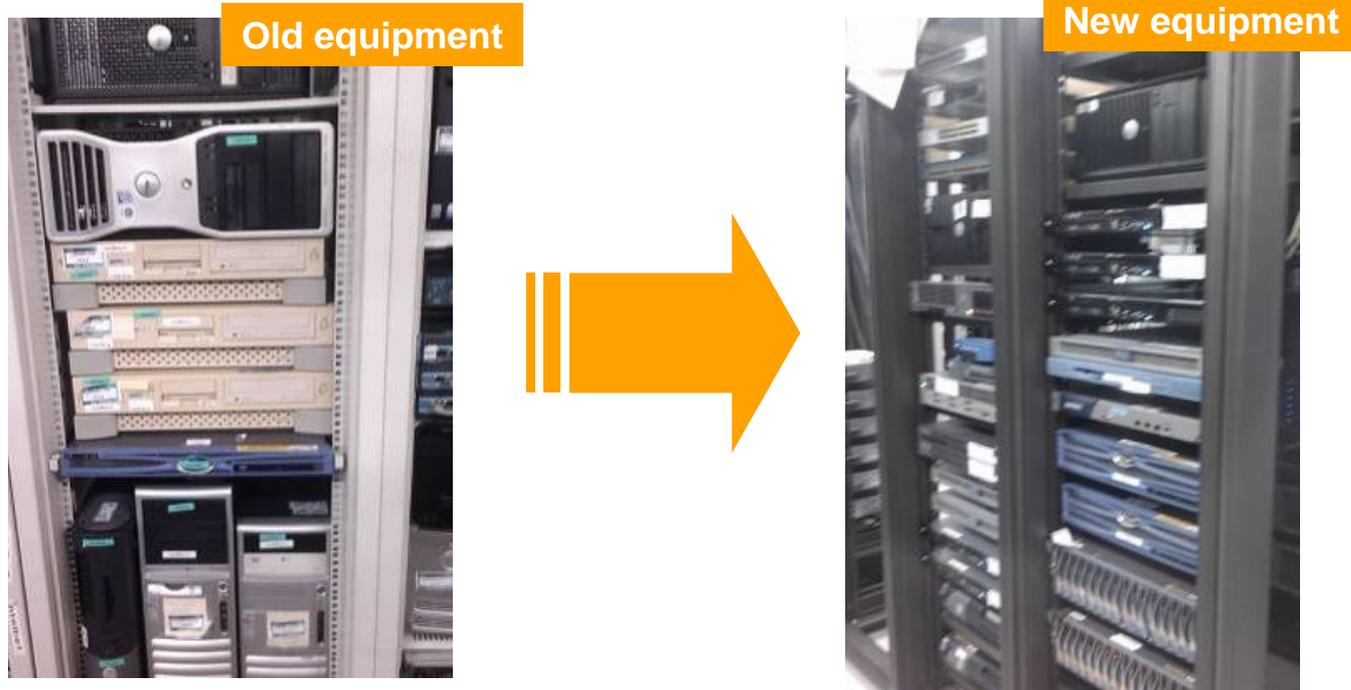
Cardboard used for the package **not plasticized and 100% recycled**

Disassembly time reduced by more than **70%**



# Telefónica Green Datacentre Virtualization

- Telefonía has developed a project aimed at **eliminating all the non-working servers** and re-use sub-used equipment
- 860 equipment analysed along 2010, **removing 517 equipment**



- **Expected Energy Saving: 732 MWh/year**



# Hot topics and future activities

- **Second phase of the G.R.E.E.N. Benchmark on Home Gateways**
- **Possible cooperation with GeSI EEWG on EE KPI for fixed netw.**
- **Finalization of Benchmarks on:**
  - **smart services**
  - **energy management systems and processes**
  - **HVDC systems**
  - **Fuel Cells**
- **Evaluation of Joint Signature of the CoC Digital TV V9**
- **Participation to a table of experts on T ranges for CoC DC**
- **2012 Annual Report (release planned 1Q13)**
- **Next ETNO ETF F2F meeting: Genoa, June 18<sup>th</sup> - 19<sup>th</sup> 2012**





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