



## **ENVIRONMENTAL RESPONSIBILITY REPORT**

Prepared for TANDBERG by Bergfald & Co  
*December 2007*

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## PART 1: INTRODUCTION



**TANDBERG**  
See: **impact**

## MESSAGE FROM FREDRIK HALVORSEN



*Fredrik Halvorsen,  
CEO*

As a global company with customers in over 90 countries, TANDBERG has a genuine commitment to the environment. We believe that promoting green practices is a corporate social responsibility for all organizations, regardless of economic motive.

From 1970 to 2004 global emissions of greenhouse gases caused by transportation increased by 120 percent, while total emissions increased by 70 percent. The Intergovernmental Panel on Climate Changes (IPCC) states that the total global emissions must be reduced by 60 to 80 percent in order to stabilize the greenhouse gas concentration in the atmosphere.

In order to address this challenge, TANDBERG strives to provide products that allow companies to measure and reduce their carbon footprint. By reducing unnecessary business travel, our videoconferencing, telepresence, and mobile solutions help organizations become more environmentally responsible while improving their competitive advantage.

This opportunity does not, however, free our own company from taking a hard look in the mirror to make sure our internal practices and processes are as environmentally friendly as possible. To incorporate environmental responsibility into the culture of our company throughout our offices worldwide is going to take time and persistence. The leadership team and employees of TANDBERG are committed to ensuring that happens.

Within TANDBERG we have a cross-functional team from R&D, operations, facilities and marketing who are making sure we meet our environmental commitments.

As a result of the policies listed in this report, our goal is to reduce the carbon footprint due to air travel per employee by 10% and the energy use per square foot of office space by 10% – both by 2009.

This report, our first environmental sustainability review, is an important step towards measuring and improving our own carbon footprint. While we recognize that the report is not exhaustive in its review of our full supply chain, it does set us on a course to continue environmental benchmarking within TANDBERG's operations worldwide.

In addition, we hope that this report also provides information to our customers and partners regarding the impact of visual communication solutions on their own carbon footprint.

A handwritten signature in black ink, appearing to read 'Fredrik Halvorsen'. The signature is stylized and written in a cursive-like font.

*Fredrik Halvorsen, CEO*

## TANDBERG'S ENVIRONMENTAL POLICIES

TANDBERG has put in place several policies throughout its offices in order to reduce its environmental impact.

**1. Meeting travel** – In order to reduce unnecessary meeting travel, whenever possible employees should videoconference within TANDBERG, as well as with customers, partners and suppliers. For periodic company events where in-person collaboration is essential, TANDBERG balances the impact of employee travel either through carbon offset programs or other environmental initiatives in our operations.

**2. Telecommuting/teleworking** – TANDBERG supports telework initiatives that maintain a strong company culture and a high level of performance, while reducing the emissions caused by commuting. We enable employees to utilize desktop and PC-based video to visually telecommute, based on their particular job situation and approval of their manager.

**3. Production/operations** – TANDBERG strives to reduce the energy consumption and carbon footprint in the production and use of our videoconferencing solution. We comply with all relevant environmental legislation, including the EU's directives on WEEE and RoHS.

**4. Energy consumption** – Every TANDBERG office should have a plan to reduce energy consumption by addressing the use of heating/cooling systems, lighting, and electronic equipment.

**5. Business materials** – TANDBERG encourages all offices to purchase environmentally friendly products. Print runs of marketing materials should be kept to a minimum and produced on eco-friendly paper.

**6. Recycling** – Wherever locally feasible, all TANDBERG offices should have programs to recycle cans, bottles, mixed paper, cardboard, and electronic equipment.

**7. Shipping and mailing** – Where possible, TANDBERG should reduce the amount of materials used in shipping, source reusable packing containers, and consolidate transportation to often-used vendors.



**TANDBERG'S GOAL** is to raise environmental awareness among employees. Environmental responsibility doesn't stop at the office doors and TANDBERG encourages employees to think about more ways they can incorporate green initiatives into their daily lives.

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Date: 12/2007.

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## PART 2: BERGFALD ENVIRONMENTAL AUDIT



Bergfald & Co as



*The staff of Bergfald & Co.*

## AUDITING TEAM

The information contained in this report was gathered and analyzed by the independent environmental auditor Bergfald & Co.

Bergfald & Co is an environmental consulting company based in Oslo, Norway. Bergfald & Co supplies technical and strategic environmental advisory services to Norwegian and international customers. The Bergfald partners have broad experience with eco-labeling and environmental management schemes. The company is especially competent in hazardous chemicals, emission trading, managing environmental clean-up projects, as well as consumer chemistry and green purchasing.

More information on Bergfald can be found at [www.bergfald.no](http://www.bergfald.no).

## METHODOLOGY

TANDBERG currently has 1,120 employees based in 37 countries. In 2006, the base year for this environmental study, the average number of employees was 870.

The Company's joint headquarters are located in Norway and the United States. This environmental report is based on data gathered from TANDBERG's largest offices in Norway and the United States, representing 70 percent of TANDBERG's global workforce. Based on the data collected for 70 percent of the employee base, a carbon footprint was determined in terms of annual tons of emission per employee. The per-employee figure was then used to create a total footprint for the entire Company worldwide.

The Company's footprint has been calculated based on the 2006 energy consumption of office locations, flight and automobile mileage for employee business travel, and an estimation of emissions of climate gasses over the life cycle of TANDBERG's products, from production through to use and removal.

To date, no industry-wide environmental standards or benchmarks exist for the visual communication industry, including products such as high definition videoconferencing, telepresence, or mobile video. Therefore, to complete this analysis, benchmark data has been used for other products that fall under the category of Information Communications Technologies (ICT), specifically industry-standard data for personal computers and television equipment.

This report focuses on an environmental assessment of two key TANDBERG endpoints, the Centric 1700 MXP, a high definition integrated desktop unit for individuals and small groups, and the Profile 6000 MXP, a room-based system for large meetings. Environmental assessments related to these two systems are considered indicative for the full endpoint product range, although specific data may differ from product to product.

**CARBON FOOTPRINT** is the total amount of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases that are emitted over the full life cycle of a product or service.

**LIFE CYCLE ANALYSIS (LCA)** is the assessment of the environmental impact of a given product or service throughout its lifespan.



## TANDBERG'S CARBON FOOTPRINT

### **A. Measurement Sources**

The Company's footprint has been measured based on emissions from three sources: transportation (air travel and automobile travel), energy consumption, and manufacturing.

#### ***1. Air travel***

Available data for TANDBERG air travel has been collected for employees in Norway and the United States. For Norway-based travel, data on mileage traveled for the full year 2006 was used. For US-based travel, annual CO<sub>2</sub> emissions per flight has been estimated based on available data for the 50 most traveled routes and 50 longest routes in 2006/2007.

Since greenhouse gas emissions caused by aviation occur high in the atmosphere, their impact on the climate is more severe than emissions from other sources. The Intergovernmental Panel of Climate Change (IPCC) estimates the global warming impact of air travel emissions to be approximately 1.9 times the emissions from ground-based activities. Calculations of impacts from air travel are based on My Climate ([www.myclimate.org](http://www.myclimate.org)).

#### ***2. Automobile travel***

The emissions from TANDBERG employee car travel in Norway were calculated by using the average emissions for automobiles set by Statistics Norway, at 300 grams CO<sub>2</sub>/mile. Data on miles traveled by car for all Norway-based employees were gathered from the year 2006.

Emissions from car travel in the United States were measured as 495 grams CO<sub>2</sub>/mile, as per guidelines set by the United States Environmental Protection Agency (EPA). Data on miles traveled by car for all US-based employees were also gathered from the year 2006.

Automobile mileage includes travel to and from business meetings during the course of the work day. It does not include the additional mileage that is incurred due to employee travel to and from work.

#### ***3. Energy consumption in offices***

Energy consumption in Norway was collected from the headquarters location in Oslo, which uses only electricity for heating. The energy mix in Norway consists of 99 percent hydro power, with no resulting greenhouse gas emissions.

Energy consumption data from the US offices are based on an average of the specific energy consumption (kWh/ft<sup>2</sup>) at the largest US office in Reston, Virginia. TANDBERG in the United States has an energy mix for the generation of electric

power represented mainly by fossil fuels. Half the energy is produced by coal, 19 percent from natural gases and three percent from petroleum. The remaining 28 percent is produced by renewable sources and nuclear power.

#### **4. Manufacturing of products**

Prior to a full supply chain evaluation, as an initial step in measuring the Life Cycle emissions of its production process, Bergfald & Co has used external data to estimate the CO<sub>2</sub> impact of TANDBERG's videoconferencing solutions.

As stated, the videoconferencing industry does not have published data for the emissions of product manufacturing. Therefore, data from products with similar production requirements, including personal computers, LCD screens, display technology, and electronic components was used to estimate the CO<sub>2</sub> impact of the videoconferencing Life Cycle. These reports include:

- LCA Study of the Product Group Personal Computers in the EU Ecolabel Scheme, published in 1988. Emissions from manufacturing were calculated to approximately 25 kg CO<sub>2</sub>/kg product.

- Environmental Product Declarations (EPD) produced by LG Philips for three different LCD modules, ranging from 32 to 42 inches. Emissions from manufacturing were between 24.7 kg and 35.8 kg CO<sub>2</sub>/kg product.<sup>1</sup>

- Product Environmental Aspects Declaration published by Seiko Epson Corporation for the Data Projector Epson EMP X-5. Emissions from manufacturing were calculated to approximately 8 kg CO<sub>2</sub>/kg product.

- Several EPDs published for small electronic components. For these products, emissions from manufacturing are generally higher, up to 250 kg CO<sub>2</sub>/kg product.

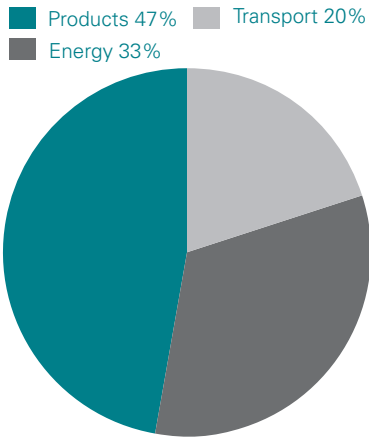
Based on the above sources, the carbon footprint from the manufacture of TANDBERG systems is estimated to be 27.5 kg CO<sub>2</sub> per kg equipment. The average weight of a TANDBERG videoconferencing system is set to 7.5 kg.

## **B. Results: TANDBERG's Total Footprint**

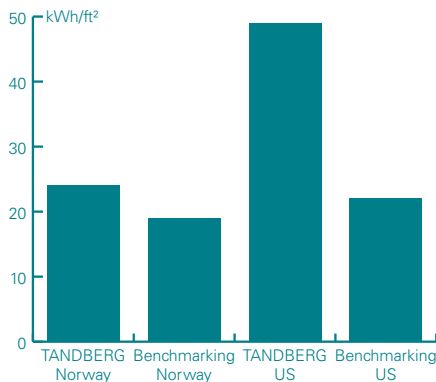
### **1. Transportation (Air and automobile travel)**

TANDBERG has annual emissions of approximately 3,100 tons CO<sub>2</sub> related to transport. Air travel represents 15 percent, and the emissions from passenger cars represent five percent of the total carbon footprint (together 20 percent of the total footprint).





**Figure 1:**  
Contribution to TANDBERG's carbon footprint.



**Figure 2:** Benchmarking energy consumption at TANDBERG offices. (kWh per square feet)

## 2. Energy consumption in offices

TANDBERG has annual emissions of approximately 5,200 tons CO<sub>2</sub> related to energy consumption in offices. The generation of electric power is crucial regarding emissions of greenhouse gases. The United States energy mix was used as a guideline to estimate the global emissions for the rest of TANDBERG. As a result, the energy consumption at TANDBERG offices globally represents 33 percent of the Company's total carbon footprint.

## 3. Manufacturing of products

TANDBERG has annual emissions of approximately 7,400 tons CO<sub>2</sub> related to manufacturing of products. The emissions of greenhouse gasses from the products represent 47 percent of TANDBERG's total carbon footprint. These emissions are related to the extraction and manufacturing of raw materials, to the transport of raw materials and to the manufacturing, packaging and transport of the final products.

TANDBERG's total carbon footprint is calculated to be 15,750 metric tons CO<sub>2</sub> in 2006. Emissions per employee are 18.1 tons CO<sub>2</sub>. Omitting manufacturing, the carbon footprint from transport and energy consumption in TANDBERG's offices is 9.6 tons CO<sub>2</sub> per employee.

## C. Carbon Footprint Benchmarks

By looking only at the transport and energy consumption variables, we are able to compare the footprint of TANDBERG's employee base in Norway and the United States to averages for those countries. The benchmarking of Norway is based on Enøk-normtall (ENOVA) and the US benchmarking is developed

by the Buildings Technology Center at Oak Ridge National Laboratory.

The TANDBERG office in Oslo has a carbon footprint of 2.8 tons CO<sub>2</sub> per employee, which is only slightly higher than the average emission per person living in Oslo, 2.3 tons CO<sub>2</sub>. The TANDBERG offices in the United States represent a carbon footprint of 18 tons CO<sub>2</sub> per employee, just below the average emission per person living in the United States, 20 tons CO<sub>2</sub> per year.

As there is no industry-standard scheme for comparing the carbon footprint of companies with the same product type and size to TANDBERG, it has not been possible to benchmark the CO<sub>2</sub> per employee for the manufacturing process.

## D. Recommendations

### 1. Transportation (Air and automobile travel)

TANDBERG strives to reduce employee travel as much as possible through the use of its own technology. The Company video-enables all employees in order to reduce the need to travel for face to face

meetings and stay visually connected from home offices.

When in-person meetings are necessary, TANDBERG attempts to reduce the environmental impact of employee travel. For major company events, TANDBERG has invested in carbon offset programs to balance the travel of employees. The Oslo headquarters is implementing a program in which employees can share electric cars for travel to meetings in greater Oslo.

### ***Bergfald Recommendation***

TANDBERG should strive for a 10 percent reduction in air travel mileage per employee by 2009.

## ***2. Energy consumption in offices***

TANDBERG'S annual energy consumption is 2.5 GWh in Norway offices, and the specific energy consumption is 24 kWh/ft<sup>2</sup> (263 kWh/m<sup>2</sup>). This is comparable to other office buildings in Norway, but is above official benchmarking levels. This indicates a potential for more efficient energy use.

The annual energy consumption at the TANDBERG offices in the United States is approximately 4.2 GWh, indicating specific energy consumption at 49 kWh/ft<sup>2</sup> (523 kWh/m<sup>2</sup>).

The office in Reston, Virginia has a considerable potential for energy efficient measures. This office location has taken steps toward greater energy efficiency with the use of motion sensor lights in all employee offices and common areas. Over the past year, the office has installed Energy-star kitchen appliances and more energy efficient HVAC units.

Globally, TANDBERG's IT department has made many improvements in the past year to be more energy efficient. It has opted to expand its data center in Norway, where most of the energy is derived from hydropower, resulting in reduction and consolidation of more energy-intensive data centers in the United States and Asia. The data center in Norway has been designed with newer, energy efficient models, server virtualization, and a consolidated layout. In addition, in offices around the world, the IT department has implemented energy saving techniques such as laptop usage, thin computing for ERP systems and consolidation of printing hubs.

### ***Bergfald Recommendation***

Commercial office buildings normally have a greater need for cooling than for heating throughout the year, due to office equipment such as personal computers, copy machines, printers, etc. The temperature on the cooling systems is often very low (64–66 °F or 17.5–18.5 °C), and can be set to a higher temperature. A comfortable temperature in an office for sedentary work is between 68–72 °F (20–22 °C).





Some technologies often run at full capacity both day and night, thus consuming more energy than necessary. A more energy efficient approach would be running ventilation, heating and office equipment at reduced capacity and with natural cooling at night.

***Recommended measures:***

- Use fresh outdoor air to cool down buildings at night.
- Install motion sensors on lights in all offices.
- Adjust to more comfortable and energy efficient temperatures.
- Adjust office equipment to ensure lower energy use.
- Choose energy efficient technical installations and office equipment.
- Invite an energy consultant to investigate technical systems of TANDBERG's offices and reveal energy efficient measures.

TANDBERG should strive to achieve a 10 percent reduction in office related energy consumption per square foot by 2009. The main potential regarding energy efficiency is at the US offices.

## ADDITIONAL ENVIRONMENTAL ACTIVITIES

### A. Waste Management/Recycling

Recycling programs exist in a number of offices throughout TANDBERG. Specifically, both the headquarters in Oslo, Norway and the Reston, Virginia office have programs in place to recycle all organic waste, paper, cardboard, electronics, bottles and cans. All other offices in TANDBERG are initiating recycling programs where it is locally feasible.

Electronic equipment at TANDBERG is recycled in a variety of ways. The Company's computers and other electronic equipment are recycled via specialized 3rd parties. In the United States and Europe, TANDBERG also arranges for unused electronic equipment, including its own products, to be picked up and recycled from partner facilities, such as 3rd party service centers.

#### *Bergfald Recommendation*

TANDBERG should ensure all offices are initiating recycling programs.

### B. Green Procurement

By using purchasing power to opt for goods and services that also respect the environment, TANDBERG can make an important contribution towards sustainable development. The results will be reduced use and discharges of hazardous chemicals, reduced waste production and energy use, and an increase in the access to organic and fair trade food for employees and visitors.

Currently, TANDBERG's green procurement is mainly related to printed materials. All corporate materials, such as the TANDBERG annual report and corporate brochure, are printed on eco-friendly materials, signifying their environmental sustainability.

In addition, TANDBERG offices are embarking on additional green procurement initiatives. The Oslo headquarters is striving to achieve that cleaning and canteen services are in compliance with the Nordic Ecolabelling criteria for these services.

#### *Bergfald Recommendation*

Both the Norwegian and the US offices should discuss environmental requirements for computers, screens, printers and other hardware. The requirements developed for TANDBERG's products should be applicable for the company's own purchasing.

## ENVIRONMENTAL IMPACT OF TANDBERG PRODUCTS

TANDBERG has a wide range of visual communication solutions, including telepresence, HD videoconferencing, and mobile video. This report compares environmental indicators for two of these systems with relevant environmental benchmarking schemes.

Since there are no benchmarking schemes of videoconferencing systems in place, two products, the Centric 1700 MXP and the Profile 6000 MXP, are as far as reasonable compared with existing environmental benchmarking schemes for televisions and personal computers.

The schemes utilized are:

- Blue Angel ecolabelling criteria
- IEEE-standards for Environmental Assessment of Personal Computer Products
- Greenpeace Greener Electronics
- US EPA Energy Star
- EU Flower
- Nordic Ecolabelling (the Nordic Swan)

### A. Hazardous chemicals

All TANDBERG systems, including the two specific products detailed in this report, comply with the EU Directive on the Restriction of Hazardous Substances Directive (RoHS). TANDBERG is also in compliance with most of the selected environmental benchmarking schemes regarding the hazardous chemicals listed in table 1.

<b>1700 MXP (20" LCD)</b>	Cadmium	Mercury	Lead	Chromium	PBB	PBDE
Nordic Ecolabelling (PC/Monitors)	👍	👍	👍	👍	👍	👍
Nordic Ecolabelling (TV)	👍	👎	👍	👍	👍	👍
EU-Flower (PC/Monitors)	👍	👍	👍	👍	👍	👍
EU-Flower (TV)	👍	👍	👍	👍	👍	👍
Blue Angel	–	–	–	–	👉	👉
IEEE-Standard 1680	👍	👍	👍	👍	👍	👍
Greenpeace	–	–	–	–	👉	👉
RoHS	👍	👍	👍	👍	👍	👍

<b>6000 MXP (50" Plasma)</b>	Cadmium	Mercury	Lead	Chromium	PBB	PBDE
Nordic Ecolabelling (PC/Monitors)	👍	👍	👍	👍	👍	👍
Nordic Ecolabelling (TV)	👍	👍	👍	👍	👍	👍
EU-Flower (PC/Monitors)	👍	👍	👍	👍	👍	👍
EU-Flower (TV)	👍	👍	👍	👍	👍	👍
Blue Angel	–	–	–	–	👉	👉
IEEE-Standard 1680	👍	👍	👍	👍	👍	👍
Greenpeace	–	–	–	–	👉	👉
RoHS	👍	👍	👍	👍	👍	👍

- 👍 *meet criteria*
- 👉 *partly meet criteria*
- 👎 *do not meet criteria*
- *no criteria*

**Table 1:** Environmental benchmarking – hazardous chemicals.

## ***Mercury***

The mercury content of the light tubes in the TANDBERG 1700 MXP is measured to be 2.7 mg per light tube. The limit in most criteria is set to 3.0 mg per tube, with the exception of the Nordic Ecolabelling for audiovisual equipment where the limit is 1.0 mg per tube.

## ***Brominated flame retardants***

The Blue Angel ecolabelling criteria states that there should be no bromo-organic compounds added in products. Greenpeace gives maximum score to companies that have committed to eliminating all brominated flame retardants.

Brominated flame retardants are extensively used commercially, and electronic products are no exception. The authorities have focused on the most aggressive brominated flame retardants like Poly-brominated biphenyl (PBB) and Polybrominated diphenyl ethers (PBDE). The use of these are regulated through the RoHS directive. In the United States the PBB have not been produced since 1976 and the use of PBDE as a flame retardant in electronic equipment has decreased in the region of 30 percent over the last ten years.

The Norwegian Pollution Control Authorities have recently suggested a prohibition of 21 hazardous substances in consumer products, this will include mercury in light tubes (flat screens) and brominated flame retardants such as HBCDD and TBBPA. Both HBCDD and TBBPA are commonly used in printed circuit boards and additives in plastic parts. Approximately 90 percent of printed circuit boards contain TBBPA.

HBCDD and TBBPA are not banned under the RoHS Directive. However, the EC Directive on Waste Electrical and Electronic Equipment (WEEE) requires any plastics containing brominated flame retardants to be removed from any separately collected WEEE for separate disposal. These flame retardants are not biodegradable and will over time accumulate and cause long-term effects on the environment. It is of special concern when these pollutants are found in polar bears, birds, seal and fish in the arctic regions far from where they are emitted.

## ***Bergfald Recommendation***

It is recommended for TANDBERG to look for alternative flame retardants such as halogen-free printed circuit boards (which contain no chlorine, bromine and fluoride) and which fully comply with all demands regarding fire safety. There are also many reactive nitrogen- and phosphorus compounds, and inorganic salts, such as aluminum hydroxide which are used as flame retardants in epoxy instead of TBBPA.



*TANDBERG  
Centric 1700 MXP*

Mode	Input 230V	Input 110V
Off-mode	0	0
Sleep mode	35	33
On-mode	87	84

*Table 2: Energy consumption (W) of Centric 1700 (total system).*

Mode	Input 230V	Input 110V
Off-mode	0	0
Sleep mode	~0.3	~0.4
On-mode	255	230

*Table 3: Energy consumption (W) of Profile 6000 (only monitor).*

In use	No. of units	Watt (in use)	Hours/year	kWh/year
Profile 6000	100	400	1598	63,920
Centric 1700	100	87	1598	13,900
				<b>77,820</b>

*Table 4: Energy consumption of a typical installation.*

### CO<sub>2</sub> SAVED VS. CO<sub>2</sub> USED

With approximately 224 units in place throughout its organization, **Vodafone saved 5,500 tons of CO<sub>2</sub>** due to travel reduction in one year.

An installation of 224 video units such as the Profile 6000, in use approximately 50% of the time, incurs 84,224 kWh of energy and 51.6 tons of CO<sub>2</sub> in one year.

## B. Energy

### 1. Energy use per product

Energy use is calculated in tables 2 and 3 for the 1700 MXP and the monitor of the 6000 MXP.

### 2. Energy Consumption of a Typical Installation

Based on the data in tables 2 and 3, we can estimate the energy use of a typical videoconferencing installation in table 4.

A sample installation in which an organization has in place one hundred 6000 units used for group meetings and one hundred 1700s used for executive communication, with all units in use 85 % of the working week (34 hours per week) would incur 77,820 kWh of energy.

In a location that uses a typical mix of fuels to power its energy consumption, 0.61 kg CO<sub>2</sub>/kWh (Energy Information Administration, DOE), this translates to 48 tons of CO<sub>2</sub> per year.

It is possible to compare the negative impact of using videoconferencing equipment on a company's annual carbon footprint with the carbon emissions that are saved by avoiding unnecessary meeting travel, as seen in the box to the left.

### 3. Benchmarking

The energy consumption of TANDBERG's systems is not particularly comparable to that of personal computers or televisions. Videoconferencing solutions consist of components (such as a high definition camera) and have several functions that can not be performed by PC or audiovisual equipment. For

these reasons, only the energy consumption of the monitor is compared with the environmental benchmarking schemes.

The TANDBERG Centric 1700 MXP is a fully integrated system which operates both as a videoconferencing system and as a PC display. As it is not possible to measure the energy consumption for the monitor only, this product is not compared with the benchmarking schemes.

The energy consumption of the monitor on TANDBERG Profile 6000 MXP is benchmarked and satisfies the Energy Star criteria regarding off-mode and the sleep mode function. When in on-mode the energy consumption of the Profile 6000 is almost twice as high as the Nordic Ecolabelling criteria and the EU-Flower for televisions.

#### 4. Bergfald Recommendations

To date, extensive environmental information on the 1700 MXP and 6000 MXP has been sent to Nordic Ecolabelling and TANDBERG is involved in an ongoing process to develop environmental benchmarking criteria for videoconferencing systems with this program.

It is recommended that TANDBERG develop videoconferencing benchmarking in assistance with the Nordic Ecolabelling, the EU-Flower and Energy Star programs.

<b>6000 MXP (50" Plasma)</b>	Off-mode	Sleep mode	On-mode
Nordic Ecolabelling (television)	☺	☺	☹
EU-Flower (television)	☺	☺	☹
Blue Angel (television)	☺	☺	☺
IEEE-Standard 1680 (television)	☺	☺	☺
Energy Star (television)	☺	☺	☺
☺	<i>meet criteria</i>		
☹	<i>do not meet criteria</i>		

**Table 5:** Environmental benchmarking – energy.

## Centric 1700 MXP (20" LCD)

### Recyclability

Nordic Ecolabelling (PC/Monitors)	☹
Nordic Ecolabelling (TV)	☺
EU-Flower (PC/Monitors)	☹
EU-Flower (TV)	☹
Blue Angel	☺
IEEE-Standard 1680	☺
Greenpeace	☺
WEEE	☺
☺ <i>meet criteria</i>	
☹ <i>do not meet criteria</i>	

**Table 6:** Environmental benchmarking - recyclability.

## C. Recyclability

Electronic and electric equipment often contain large quantities of hazardous substances, which may have an adverse effect on health and environment. This is why all producers and importers of electronic and electric equipment in the European Union are required to arrange for collection and recycling. The aim of the EC Directive on Waste Electrical and Electronic Equipment (WEEE) is to prevent WEEE to occur, and enhance the reuse, recycling and other forms of recovery of electronic and electrical waste.

TANDBERG is in compliance with this Directive. The Company has arranged for collection, treatment, recycling and safe disposal of electrical and electronic equipment in all EU Member States, and provides detailed environmental information to customers globally. All TANDBERG video-conferencing systems are marked with a crossed-out "wheel bin" symbol. TANDBERG also provides disassembly information to all customers.

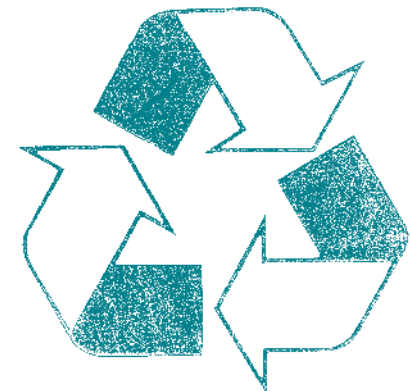
The United States Congress is considering a number of waste bills including the National Computer Recycling Act, but no similar law to the European WEEE Directive has yet been passed. Some states have developed policies banning CRT (cathode ray tubes). For example, in 2004 California introduced an electronic waste recycling fee on all monitors and televisions, and was followed by several other states, including Maryland, Maine, Washington, Minnesota, Oregon and Texas. Some of the larger electronic companies are already taking an innovative approach by collecting and recycling their products.

Although TANDBERG in the United States is not required by law to recycle electronic equipment, it does have a recycling program in place. TANDBERG arranges for its products to be collected regularly from its central service center, recycled and disposed of safely. In addition, TANDBERG in the United States is exploring recycling programs for its older equipment to implement with partners and customers.

Regarding the recyclability of TANDBERG's videoconferencing systems, the Centric 1700 MXP has been dismantled and examined and all parts have been registered and weighted. The WEEE Directive states that 65 percent of the materials by weight that are used in the appliance shall be recyclable. This includes only parts above 25 grams, and does not include remote controls, packaging, cables and power supply. The Centric 1700 MXP is considered to be 74.4 percent recyclable by weight. The criteria of the Nordic Ecolabelling and EU-Flower for PCs, and EU-Flower for televisions call for 90 percent recyclability of chassis and plastic and metal housing. The TANDBERG Centric 1700 MXP has a recyclability of chassis and housing at 83.4 percent.

### ***Bergfald Recommendation***

It is recommended for TANDBERG to assess the need of varnish on chassis and housing. The back cover of the screen on the TANDBERG Centric 1700 MXP is not recyclable due to the use of varnish. By abstaining from the use of varnish at the back cover of the screen, the TANDBERG Centric 1700 MXP would achieve 90 percent recyclability.





## RECOMMENDED NEXT STEPS

This environmental report is a first step for TANDBERG in assessing its carbon footprint. As a result of these findings, Bergfald recommends the following next steps for TANDBERG:

- A survey of the energy consumption in TANDBERG offices globally.
- Implementation of an environmental management and reporting system.
- Development of a videoconferencing environmental benchmarking scheme in cooperation with the Nordic Ecolabelling, EU-Flower and Energy Star.
- Ecolabelling of TANDBERG videoconferencing equipment.
- IT Eco Declaration of all TANDBERG products, which includes information on environmental practices as well as product features.
- Life Cycle Analysis (LCA) for a TANDBERG product by working with all production partners and measuring the complete supply chain.

## NOTES

1. LG Philips: Certified Environmental Product Declaration.  
Product: TFT-LCD Module - LC320W (LC320W01, LC320WX1, LC320WX2), LC370W(LC370W01, LC370WX1, LC370WU1) and LC420W (LC420W02, LC420WX1, LC320WU1). Reg.no. S-P-00095.

