

# Ecological Computing

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Nowadays most of us own a desktop computer, smartphone, tablet and/or laptop. We really need these important tools but have we thought about our effects on the environment and what we can do to reduce our environmental footprint created when using these tools? The consumer side of technology uses 2% of the world's environmental footprint<sup>1</sup>. In this article I will show and explain how we 'consumers of technology' can reduce our environmental impact when using computers by following these 5 easy steps!

## Disabling the computer when not in use (Turning off)

One of the key steps in reducing the computational environmental impact is to turn off the computer from the plug when not in use. It is recommended to purchase a power strip to connect the various devices and then turn off all devices from the power strip when not in use. Did you know that your computer uses "75% of its energy when not in use"<sup>2</sup> (). This step is one of the easiest ways to help. In fact it just takes about 15 minutes to purchase the power strip depending on your vendor's distance. Remember though, this only applies for desktop computers!

## Using "Power Saving" modes

Apart from disabling your computer when not in use, you can also utilise "Power Saving" modes, which give you the ability to save power whilst using the computer. This mode can give you the ability to set your computer to turn off its hard disk or display after a specific period of time or even dim the display to save power. Even though this mode saves power in various ways it also affects performance because it tries to use a little bit less voltage for your CPU, RAM, etc which in turn reduces their electrical current but prevents them from

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<sup>1</sup> <http://www.youtube.com/watch?v=vo0K-IDLr00> ( video entitled *Google data center efficiency best practices - Full video* uploaded on May 23,2011)

<sup>2</sup> [http://www.youtube.com/watch?v=VC3C\\_8eQqeE](http://www.youtube.com/watch?v=VC3C_8eQqeE) ( video entitled *Energy Drips - How to save Money and energy in your home* - video uploaded June 1, 2011)

working at their fastest state. This mode is mainly designed for people who browse the internet and write documents and not for people who play 3D games that demand highly complex 3D operations.

## Use of Ecological Internet Services

These days, almost all of us have internet access. Sometimes, you do not realise that certain internet services such as Google and Microsoft can leave a less harmful environmental footprint than others. Data centres, giant computer centres that provide us with the entire internet use "15%" of earth's environmental footprint<sup>3</sup>. I highly recommend the use of Microsoft's and Google's internet services. Microsoft has gone carbon neutral on usage of their data centres and services which results in almost 0% of environmental footprint whilst Google has thought of practices to reduce their data centre's energy consumption and purchasing energy from wind and solar farms which also results in 0% of their environmental footprint<sup>4</sup>.

## Reducing brightness

Brightness is one of the many things that consumes your computer battery. This is because of the high use of electricity to power your screen's pixels. When it comes to portable computing, brightness is extremely essential. I recommend buying an anti-glare screen protector which will reduce glare so you won't need to use your screen's full brightness.

If these steps are not followed the ICT sector's environmental footprint will increase and this will in turn have numerous consequences on the environment. The above suggestions also help to increase a machine's lifespan. Some of the consequences that our earth may suffer if we do not take steps to safeguard it are an increase in global temperatures and further detrimental effects to the Earth's ozone layer which is already in a critical state. All we need

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<sup>3</sup> <http://www.youtube.com/watch?v=voDK-IDLr00> ( video entitled *Google data center efficiency best practices* – Full video uploaded on May 23,2011)

<sup>4</sup> <http://www.microsoft.com/environment/our-commitment/our-footprint.aspx> (Microsoft) and <http://www.youtube.com/watch?v=Qw59JqqELIs> [Google]

to do to reduce the computational environmental footprint is to follow these tips as well as any other suggestions made by the manufacturers themselves and we will be already making a difference! A difference we have a duty to bring about!

**Abstract :**

By implementing a number of suggestions we can help to safeguard the environment and make the world a better place to live in. Thanks to these tips and tricks to save energy on our electronic devices we can do our part to reduce our environmental footprint! Nowadays almost every electronics manufacturer is making greener electronics. All we need to do to reduce the computational environmental footprint is to follow these tips as well as any other suggestions made by the manufacturers themselves and we will be already making a difference! A difference we have a duty to bring about!