

# Clean technology for green environment

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Vignesh280193mechanical@gmail. com, rexmeh93@gmail. com Abstract -

Green technology or Environmental technology or Clean technology is the application of one or more of environmental Sciences, Green chemistry, environmental monitoring and electronic devices to monitor, model and conserve the natural environment and resources, and to curb the negative impacts of human involvement. Green technology is a field of new, innovative ways to make changes in daily life. Currently, this Clean Technology is in the beginning stages of its development, so the future will only bring bigger and better things for this field. A Green Environment for Now and the Future . In the past, the major need of people in this world was arable land. Man did not have to think about animate things. However, now the adverse effects on forests through over-population and the development of various chemical elements in the atmosphere have led to irregular rainfall and global warming. This global warming has brought changes in climate, including making perennial snow mountains melt, thereby adversely affecting not only human beings but also other living species. This dangerous situation is being taken very seriously by the world. The new clean technology is to introduce for the green environment. The new technology deals with the global warming and pollution control. We are going to see about the new technologies. New Technologies: 1. A liter Of light 2. Go green A liter of light: Electricity is a worldwide know source of made light. Electricity is a form of energy that is produced by the movement of

electrons. Electricity is the one of the major causes for global warming . We make most of electricity by burning fossil fuels (coal, natural gas, oil ) which produces a lot of carbon dioxide (CO<sub>2</sub>), a greenhouse gas . Some gases ("greenhouse gases") let sunlight in, which warms the Earth, and then block that heat from leaving. That's the " greenhouse effect", and it's a natural thing, mostly caused by water vapor . Man is making excessive amounts of greenhouse gases, mostly by burning fossil fuels. That causes the delicate natural balance to go out of whack and the Earth warms. That's global warming . It won't be a Hollywood style disaster. Gradually coastal areas will flood and agriculture will be damaged. But it will be very bad. Rich countries will cope, but it will take huge amounts of money. In poor countries many people will die of starvation, but not all of them. Most scientists say, in 20-50 years. But we need to start right now to fix it, fixing it will take even longer than that. Another way of receiving electricity would be solar electricity.

Bright Idea: “ Light Bulbs From Plastic Bottles, Water and Bleach “ Only recently, in the last two decades, have many people taken advantage of the sun's light and energy to build or install solar products. Solar products are more beneficial to the earth and can save you money in the long run. Solar products include a variety of options like solar panels, photovoltaic systems, solar water heaters, etc. Solar bottle bulbs are starting to become a popular installation. We wanted to do a project on solar and compare the difference between solar and regular electricity. In this project, we are going to be testing a regular light bulb and a solar bottle bulb that we will be creating. We are going compare and see whether a regular light bulb or a solar bottle bulb is brighter, at the different times of day. We will be finding the average

brightness of the solar bottle bulb and compare the results to the regular light bulb. We wanted compare the two because solar energy can be very useful and can save people a lot of money. We wanted to figure out if a solar bottle bulb was brighter than a regular light bulb when the sun is out. Our hypothesis, if we build a solar bottle bulb and compare the brightness to a regular bulb, then the solar bottle bulb will be brighter at times when the sun is out because the sun is brighter than a regular light bulb, in the end was proven. The bottle bulb was brighter and shined more luminously compares to the regular which was dimmer during the brighter times of the day. What

is Liter of Light :                      A Liter of Light is a zero-carbon emitting solar lighting project which is first initiated by members of My Shelter Foundation and students of the Massachusetts Institute of Technology. Solar Bottle Bulb uses appropriate technologies that are highly replicable and sustainable. The materials used are found easily in the poorest neighborhood. They can be easily built with simple carpentry skills and little knowledge about the solar bulb. This simple mechanism of installing Solar Bottle Bulb made the expansion of movement easy. Do it Yourself Liter of Light:                      The bulb is nothing but a 1. 5 liter clear PET bottle which is used as source of light. It is filled with the mixture of water and bleach. The bottle with this mixture is inserted into a metal sheet. This kit is embedded on the roofs of houses which act as a source of light. Working principle of Liter of Light:

Solar Bottle Bulb works by the refraction of light rays. The sun rays falling on the bottle gets refracted when it immediately enters water i. e. due to change in medium from air to water. This refracted light spreads at an angle of 360 degrees in a room and produces light equivalent to 60 watts bulb.

The solar bulb lasts for 5 years without any sort of maintenance with the change of water at regular intervals. Bleach is added to maintain the clarity of water and make the water free from microorganisms. Why Liter of Light : Solar Bottle Bulb does not have any carbon emissions when compared to any conventional light. Solar Bottle Bulb is a source of livelihood for the local unemployed people. It is very economic and reliable. It reduces the impact of global warming on earth. Disposed plastic is up-cycled. The Solar Bottle Bulb has been installed to provide ~55 watts of light. | Procedure: Phase 1.

Making the Solar Bottle Bulb: Step 1: Make a hole in the 1'x1' roof sheet material, just the same size of the bottle's circumference and insert the bottom part of the bottle leaving it exposed under the sunlight. Step 2: Make small strips that will be bent upwards steel sheet Step 3: With a steel brush or sand paper, scratch the surface of the bottle to allow the glue to stick better. Step 4: Apply rubber sealant to the small perpendicular strips Step 5 : Glue to the upper one-third of the bottle. Step 6 : Fill the water/soda bottle with purified water Step 7 : Then add 3 tablespoons of liquid bleach and tightly seal the cap. -Do not use tap water because this will allow the growth of moss. Step 8: Next, make another hole on the roof of the house (same as the bottle's circumference) where you want to put the solar bulb and firmly fix the device. Step 9: Place the bottle with the skirt glued firmly in place directly on the original roof Step 10: Seal the roof with a sealant to prevent raindrops from getting inside the house. Step 11: Protect bottle cap from cracking by sun with a protective plastic tube, and apply rubber sealant over the cap and protective cover. Phase 2. Comparing Bottle Bulb to Regular Bulb: Step 1: At the different times of day-

turn on regular bulb and compare the brightness to the solar bottle bulb using the lux meter

Step 2: Take down observations for data

Step 3: Compare the data for results

Step 4: Verify results with hypothesis | | | Advantages: | |

There are several areas that the Solar bottle Bulb makes sense in creating a low carbon emissions through the program. The plastic bottles used are up cycled and avoids the larger energy use of gathering, shredding, manufacturing and shipping of new bottles, but instead uses them as-is to a higher purpose of a lighting appliance. The process is simple with the cutting of a steel sheet that serves as a metal lock to prevent the slippage of the bottle, then this is sealed with epoxy on to the plastic bottle, which will be simply filled with water and 10 ml of bleach then can be immediately applied through the roof. It is free energy, no carbon emissions, and immediately scalable by social enterprise and lastly is easily replicated by the local government using its more considerable resources. That's it. The household will be bathed in refractive light of 60 watts on a clear day, and the water in the bottle refracts the light 360 degrees to all corners of a 40 square meter room for less than a US dollar in total plus labor. Savings in electricity expenditure every month is at an average of USD \$6. 00 / month . The carbon footprint of manufacturing one incandescent bulb = 0. 45 kg CO<sub>2</sub>, Usage of a 50 watt light bulb running for 14 hours in daytime is still 0. 77 kg per kwh so 30 days is 16. 17 kg a month or 200 kg a year. So far, 15, 000 solar bulbs have been manufactured by grassroots entrepreneurs through funds of local governments and private foundations. Expanded programs through events and volunteers will reach 200, 000 by years end. The WWF Philippines recently assisted us with this email on measuring the CO<sub>2</sub> :

Carbon footprint for the manufacture of one incandescent bulb = 0.45 kg CO<sub>2</sub>, electricity consumption is approximately 0.77 kg CO<sub>2</sub>, per kW-h, so a 50 W bulb that runs for, let's say, 14 hours a day for 30 days releases 16.17 kg CO<sub>2</sub>, a month, or nearly 200 kg a year. Moreover, approximately 90% of the power consumed by an incandescent bulb is emitted as heat rather than visible light. " This deserves more research, but its implications cannot be denied that it has enormous impacts in the local living conditions, economy, and effect on the environment. If this is correct, then at present at 15,000 built bulbs at 200 kgs will reduce pollution at 3 million kgs in a year of use. 200,000 is 40 million kgs. The best part of this strategy is it beginning with a developing country solution where everyone can have access through either building as a donation, building for themselves, or building as a business this energy saving, carbon reduction lighting through a bottom of the pyramid strategy complimenting this with importing the more expensive solar and wind technologies. | | Conclusion about liter of light: Air pollution is controlled Water pollution is controlled Noise pollution is controlled Thermal pollution is controlled Global warming reduces Recycling process carried " Hence we can use this new clean technology for green environment". Go green technology: This is my own idea by applying this technology we can build a green environment this is also technology for making a pollution free world. Our country is facing lot of environmental related problems. In the present scenario we have to concentrate on plant more trees so that we may control pollution to certain extent. In this connection a new system is to be implemented to the school students for inculcating the habit of planting and maintaining more trees in our country. Many types of mini projects has to be

given to the school students. This projects include both planting and maintaining the trees in their living area. The planted trees should be inspected by the teacher or recognized members of the project team and mark to be given based on their effort in the mini project. This mark should be added to their internal mark assessment for encouraging their internal mark assessment for encouraging their voluntary participation. This types of mini projects will increase our natural resources and hence we can create “ pollution free world”. Advantages: Future generation live in a green world Pollution is controlled Children get awareness about plant Global warming reduces Dis advantages: The inspecting team may not be work properly. Place to plant Conclusion about Go green technology: If this " Go Green Technology “ (GGT) is implemented our world get so many benefits tremendous development of our world growth will occur. References: 1. www. aliteroflight. org 2. www. google. com 3. www. wikipedia. com