Light Timer

For this “greener” project, I decided to make a circuit that would be able to control a light. The idea is that if the light is left on, after a certain time period designated by the user, the Arduino board will dim the light to save energy. The user designates the time of the delay using a rheostat. After that same amount of time passes while the light is dim, the micro controller will shut the light off. For ease of use, there are also two buttons on the circuit. One button will reset the timer in case the user is not done using the light. The other button is programmed to turn the light off if the user decides that they are done before the circuit turns itself off.

In this specific instance, the light is dimmed using pulse width modulation (PWM) in the Arduino's pin number 11. The rheostat to control the timer is feeding its values to the board through the analog input pin number 2. Both of the switches are wired in the same fashion but to different digital input pins, in this case pins 4 and 5 are used. The switches are wired from the board's 5 volt output, through a 100 ohm resistor, to a push button switch and then to the board's ground. The input is reading the voltage value between the resistor and the switch.

In all, this project represents one thing that can be done to make a greener future. By using a similarly fashioned device, people could control the lights in a room of their house. Were the people to walk out of the room forgetting to turn the lights off, the circuit would dim the lights after a set time and eventually turn them off unless the user were to come back and turn them back to full power. In this means of operation much electricity is saved.