ECS Project Information Form

Name: Elliott Andrews

Course : ENGR 489

Supervisor : Jim Hinkley

Project Name: Renewable energy solutions for schools

Project Description:

This project will evaluate the best solution for installing renewable energy generation on schools. Students will conduct simulations to estimate the yield of PV and small wind systems, and then examine the match with expected demand. They will also examine the cost/benefit of providing battery storage to the system. They will need to estimate approximate system costs to determine the potential savings possible to understand the business case.

Theory and practical work will include setting up and running simulations in a free software tool called the System Advisor Model. In addition, contacting suppliers of renewable energy systems to obtain estimates of the installed costs of systems. Furthermore, attempting to approach several schools to obtain data on current daily and seasonal patterns of energy consumption.

RISK ANALYSIS

Does your project contain anything that can cause serious harm or death?
eg building /modifying things with voltages over 60V, Chemicals, Moving machinery (eg Tank/Marvin) , Flying components (eg Phantom UAV, Plane), Bodies of water.

YES ☐ (Major) NO ☑

If Yes
Please contact the School Safety Officer or Electronics Technicians to talk through your Safety Plan

Otherwise

Does your project contain anything that can cause **harm or Injury?**
eg building /modifying things with voltages up to 60V, Moving machinery (.eg. desktop Minions), Flying components e.g. (micro Quad rotor, Parrot AR Drone, heavy items)

YES ☐ (Medium) NO ☑

If Yes, please Complete a Safety Plan, and send to Safety Officer

Everyone to complete.

Computers are an integral part of all projects.

Describe how you will manage computer related risks such as Occupational Over Use, Cable management, etc.
Eg taking breaks, Keeping cables tidy and not messy, etc

Eye Sensitivity and Sleep:
Most computers have a screen orange filter for evening hours. For Windows 10, this is 'Night light'. I will schedule Night light for working after sunset (about 7pm), which will fill the screen with orange light (minimizing the blue light), which will benefit sleep after computer use in the evening.

Taking Breaks:
I estimate that the maximum use (before taking a break) for using the computer should be approximately two hours. After this time, I will encourage myself to take a 20 minute break, to go for a walk, shower, stretching, lunch etc…

Desk Setup:
Dependent on where I am setup, the most common setup will include things such as:

- Water Bottle Filled Up – (For hydration)
- Mouse – (Wireless or wired, charged or cable easily extendable)
- Keyboard – (Wired, and elevated with cable also to be easily extendable)
- Headphones – (For spaces such as the Blue Zone, and general use, extendable cable)
- Phone – (For emergencies, vibration on, focus mode on)
- Desk chair – (Appropriately spaced, forward facing, should have back rest)
- Chargers - (Should be plugged behind or side for each device)

Food and Drink:
As mentioned above, a water bottle is okay to have on the desk, other food should not be consumed near the computer or in the lab. It is recommended to fold away the computer (if portable) or step outside for breakfast, lunch, and dinner, to a table for eating.

Video and Sound:
Generally, I do not listen to music during studying, but if needed to watch videos or join Zoom meetings, my sound should be at a low, comfortable, and hearable level. I trust the computer to automatically adjust my microphone level, and my camera should be at a level well centred.

Room Observation:
Before computer work begins, all object such as books, dishes etc.. should be moved 1 meter away if possible and practical. Cables should be reasonably tied down and should generally follow down the back of the computer to a safe and secure power plug/box

Common Sense:
Perhaps the most important trait for computer use, is common sense. Everything that hasn't been listed can be covered well by common sense and responsibility for using public computers and my own computer.

General Project information –

Is your Project (it may be be both.)

In-house eg internal school project ☑ Industry based or have an external client ☐

In your project will you being working or testing at any industry workplace or external sites.
This includes meetings at client offices, or visits to sites.

YES ☑ NO ☑ *Will try to contact schools remotely first*

Have you been Health and Safety inducted into the industry workplace or external sites

YES ☐ NO ☑

Does your Project use human test subjects?

YES ☐ NO ☑

Will you have Ethics Approval before you start testing?

(Assumed) YES ☑ NO ☐ *Will provide schools with an ethics declaration, including privacy concerns and information use*

If you have any doubts on which category your project falls into please contact the School Safety Officer, to help evaluate the safe risk.