

1. How many Roberts do we need to light the classroom?

Watch the video "Olympic Cyclist Vs. Toaster: Can He Power It?"



1. How much energy did Robert produce?
2. Count the number of fluorescent tube in the classroom?
3. Each fluorescent tube has a power $P = 65 \text{ W}$. How much energy do we need to light the classroom during one hour?
4. How many Roberts do we need to light the classroom during one hour?

2. Rowing machine

Five years ago, some students developed an electrical rowing machine. This machine converts human energy to electrical one. In a fitness room, the number of rowing machine is important and the electrical energy can be used for lighting the fitness room.



5. According to the wiring diagram on next page, find the following vocabulary

Generator (three-phase squirrel-cage-motor)		Inverter	
Battery		Limitation device	
Charge regulator		Power bridge rectifier	

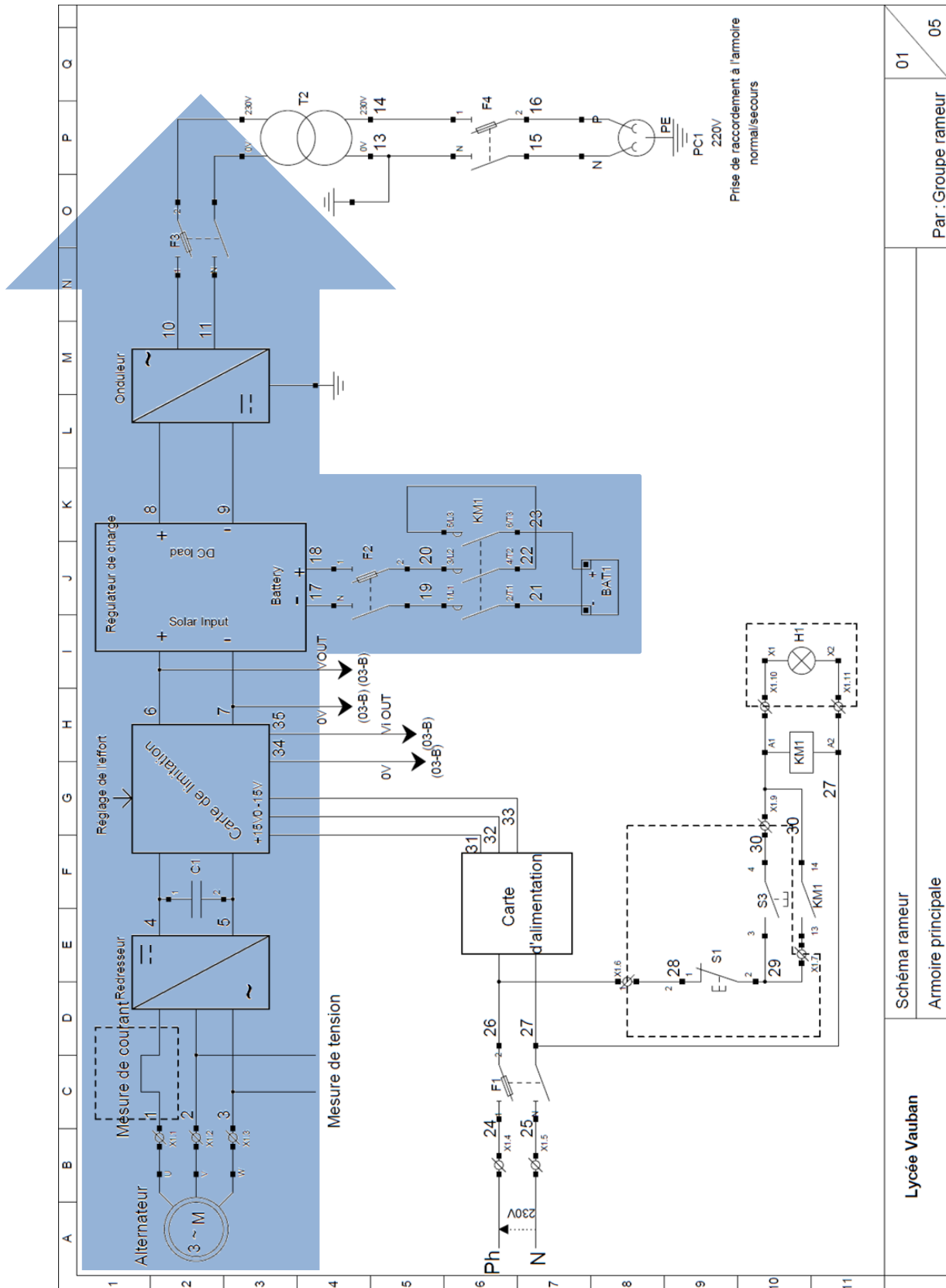
6. You are a team of young technical designers and you want to sell the rowing machine to a company. You have a meeting with the CEO and the technician of that company. Explain the project to them and try to convince them to buy your project.

In pair, you will have to write a paragraph about your rowing machine and to report orally for 5 minutes in front of the CEO and technician.

Your oral report need to contain the following items:

- global presentation,
- functional structure (energy only),
- economic analysis (an estimate of cost and money saved),
- environmental impact.

3. Wiring diagram of the rowing machine



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