## Documentation

1. **Could you understand the purpose of the experiment? Explain.**
   The purpose of the experiment was clear: We could verify the functionality, and thus the decision felt by the group, to use the solar panel, battery and power bank in combination. The group presented their extensive research on which the final decision was based on and the experiments that we performed introduced us to the theory and use of the power supply. The readme offers a great and compact overview, because it immediately refers to the report context and theory tab (where the goals are, together with the canvas, which they also refer to). The goal is extensively, but nicely written. There are some “double contaminations” in the repository. For example parts of the goals that are written in the context and theory part are also identically present in the instructions manual. It would be nice to shorten the information in at least one of the files, such that the reader still gets a short reminder of the goal without re-reading the whole file. The overall project goal is clear and the final decision for the power supply is very reasonable, thanks to the great documentation.

2. **Were the safety instructions clear?**
   The safety instructions are clear. They are in the instruction manual and are properly introduced with a big warning image, and they come before the measurement explanation, so one could not miss it when going to execute this project.

3. **How helpful is the documentation for reproducing the measurement?**
   The documentation is nice, but more images or sketches in the instructions manual would be helpful. An entire page that links to all the components used is present, but you'd have to switch between pages all the time to see what component you would need and what it looks like. Instructions are given to do the datasets, and it is kind of explained why you would do certain steps, but the steps could be explained a little bit more in depth.

4. **Did you get stuck at some point? What extra help did you need to proceed?**
   We got stuck for quite a while when we connected the MC4 connectors. A visualization in the manual would be very helpful, as we did not know which part would go where. We googled some to find out what we had to do, and that helped us further, though it took quite some time.
   We were also stuck for a while when we were connecting the loads, as the powerbank did not charge. We produced some nasty noise and decided to quit the further measurement, because the safety instructions told us to not be too playful with the battery. After a while someone whispered to connect the wires differently and then we could continue.

5. **Are you guided to reproduce previous measurements? How easily could you navigate through the project documentation?**
   Navigating through the project documentation was fine. All their steps and results were easy to find. You are guided but some more images would clarify the wires.

6. **What can be improved in the documentation?**
   More images/sketches or a more detailed explanation concerning the connections.

## Measurements

7. **Can you operate the setup with the provided instructions?**
   Yes, but more images are needed, as stated above.

8. **How close were the results you obtain to the previously reported results?**

For the first step we did not measure that long. The voltage when connecting the multimeter did appear to be in the right range, but we did not measure long enough to see it rise to the desired voltage (that would take us two hours and more groups needed the battery). It did however rise a little, indicating that it did indeed charge. For the measurement of the solar panel, it did exactly as expected: the voltage nearly vanished when covering up the solar panel.

From the instructions itself, we could not understand how to interconnect the multimeter between converter and powerbank, because the wires of them are directly connected. A more detailed description or a picture might be helpful for that measurement.

The Arduino experiment was carried out on Thursday, and it did give us a voltage ~ 8.44-8.46, though it also gave us a constant warning message telling us our voltage was too low. We were unable to “fix” this, and we also do not completely understand what is going wrong here. It would be good, to clarify the goal/result of that particular experiment.

9. **Can you understand and explain the analysis procedure to a third person?**

For the first two experiments this would be a no to the complete theoretical understanding, though we could use the functionality of the battery to measure the voltage and to load the powerbank. The Arduino one we understand setup-wise, but we did get an error value that we could not solve. We could have changed the code to avoid the message but there might be a reason to state the error message when the voltage is in that range.

10. **Is the setup robust and safe to operate?**

Yes it is. The warnings are clear.

11. **Did you encounter any issues? Could you troubleshoot those without contacting the owners?**

We had to check with Maurice during the connection of the powerbank, as we really did not get it working. We had to slightly change the wiring from the converter in order to get rid of the noise.

The Arduino experiment could not be “finished”, but due to it being done on Thursday, we could not ask for help. Maybe the instruction/documentation was a little too loose to understand what the goal of this measurement was.

**12. What part of the measurement procedure did you appreciate most?**

Getting parts of the setup working was nice. Each time you plug something in you get a response :) Apart from that, it is nice to see that the power supply group really did their best in gathering nice material for their setup. Their work ethic is nice!

## Interactions

**13. Could you relate to the stated goal of the project?**

Yes, it sounded suitable for the box, and it takes into account multiple devices it would possibly need to charge for (AC/DC possible, multiple output voltages possible).

**14. Which instructions did you need from the owners on top of the written files?**

We needed help/tips how to wire the converter correctly, when the powerbank would not load. And we are still insecure weather the Arduino experiment was successful or not.

**15. Does the experiment accomplish its stated purpose?**

If this question refers to the small experiments that we performed: We think it does. When working, it does what it is supposed to do.
The general power supply might work as well (at least we hope it).

**16. What do you recommend to the project owners to improve their complete package?**

More images, and a little bit more explanation in the setup steps (instructions). Maybe stating what the outcome of each experiment should be. To shorten the time someone spends on reading the instructions, it would also be nice to reduce the amount of repetitions. For example reducing the project outline in the instructions and link them instead.

-Overall, nice job guys ! We enjoyed the experiments :)