



unica foundation

Schrevenweg 2
P.O. Box 623
8000 AP Zwolle
The Netherlands

T +31 (0)38 456 04 56
F +31 (0)38 456 04 04
E info@unicafoundation.nl
I www.unicafoundation.nl

Dear Jacky,

As informed you today hereby a report after visiting our project in Nuwakot today. During the visit I checked the solar system, installed by Lasersun Pulchowk Kathmandu, and the biogas installations, installed by Universal Consultancy.

The biogas installation was being build during my visit, as it is right now the progress and building looks good.

The solar system has been finished by Lasersun about two weeks ago. In my belief there is some unfinished work, also some things have been done wrong and created even a deadly risk which is not acceptable. In this report I will explain the different issues.

General:

In two of the three systems the fuses where broken, the system didn't work. A fuse is a safety device in a system, if there is a shortcut in the system the fuse will break so that the rest of the system won't be damaged. Because two systems have broken fuses something seems to be wrong:

1. the fuses are not heavy enough
2. there is some wrong wiring with shortcut and broken fuse as result

Lasersun needs to check the system and finds out what is wrong, only replacing the fuse it not enough. Then we still don't know what is wrong with the system. There are also not enough spare parts, at this moment there are no fuses anymore. Let Lasersun provide 5 fuses for every building.



Batteries



As you can see the batteries are standing to low. They contain poison (also mentioned on the sticker on the batteries). Children can easily touch or open them with health risk as result.

Place them high or cover them



The batteries are standing to the metal windowcloser. Because the sun burns onto the metal plate these where very hot, to hot to touch. The temperature of the batteries was quite high. Their lifetime will be shortened and there is even a change of explosion!

Remove as soon as possible!



Wiring



The connections of the wiring is not acceptable. The engineers connected them by hand and put tape on it, inside the building and outside. This tape will get loose within a few months with blank wires as result.

Risk outside low (12V): loose wires

Risk inside big (220V): blank wires + and – close to each other. Fire or electrocution as result.

Use regular joints for it.



This is a picture taken inside. You can see how close the + and – are next to each other. If the tapes are gone the risk is enormous.



Lighting arrestor

The lightning arrestor system is completely insufficient and needs replacement. Even one of the three systems lacked the lightning arrestor.



For a good lightning arrestor system you need a metal pole with a diameter of at least 1cm standing next to the solar panel, about 1 meter higher than the highest point of the solar system. This 'fork' is too small.

Also the cable is too small. This one also needs to be at least 1cm. The cable being used now is even smaller than a 12V cable. If lightning strikes at this moment the whole cable is gone and completely not functioning.



The isolation between the cable and the construction is too thin. If lightning would occur then it will electrify the metal construction.

Replace the whole lightning arrestor system

As you can understand I would like to ask you to contact Lasersun and let them repair and/or replace the mentioned things as soon as possible. As I wrote before, some of them have a deadly risk.

With kind regards,
Unica Foundation

Roy Voss
Project Manager



Dear Jacky,

I just found out something else, please also forward that to Lasersun. If you see the diagram (from Lasersun's report) below the "green line" is the ground connection of the system. This I have not seen at your 3 systems and is missing, but highly needed. As alternative they can use the recent "lightning arrestor" cable for it, but it needs to be fixed in a correct way onto the system. Still, the lightning arrestor system needs to be replaced fully.

Greetings,
Roy

