

NFE call 28 Oct 2026: solar first results and trip debrief

NFE call: solar first results and Dansturn's trip, 28 Oct 2026: minutes

When: Wed 28 Oct 2026, 20:58 EAT, about 60 min (called at short notice in NFE leads).

Attendees: Hillary Arinda, Aaron Tushabe, Dansturn Kimbowa.

Summary

The first two days of Sezibwa solar (4.8 kWp, connected 26 Oct) produced 4.5 and 4.6 kWh a day, against a planning figure of about 18 kWh. The team puts this mainly down to cloudy weather. Aaron wants 7 days of data before judging the installation. The night grid charge is down 42% and the sun now refills the battery by late morning. The team agreed to stop hand-tuning settings. NFE will set one goal and let the model find the settings: make as much money as possible while customers never lose power. A first version has one reliability figure (100%), and per-window rules come later. Aaron will crunch the data and bring a proposal on Saturday. Dansturn reported several leads from his trip: the AMDA contact, Arila's pilot and hackathon plans, Ministry of Energy meetings next week, a Kenyan metering company, and SLS battery-as-a-service for the next site.

Decisions

1. **Set the goal, let the model find the settings.** Goal: maximise profit without hurting reliability. Version 1 uses one reliability target, **100%: customers never lose power**, and maximises profit within it. Window-specific targets come later. For example, off-peak (around 3 am) matters less than peak, when people notice outages most.
2. **The model's inputs:** the last 7 days of site data, a weather forecast (weather API), and the outage profile.

3. **Use more of the battery during peak.** The battery has been reaching midnight at 30–35%, well above the 15% floor. Aim to arrive at midnight near the floor. Use the energy in the expensive peak, possibly starting the discharge earlier, rather than leaving it unused. The battery shuts down below 10%, so the floor is not going lower than that.
4. **Automate fully.** Hillary's daily manual review ("how did we do, why, what if") is to be replaced by the system.
5. **Solar discussion paused until Saturday**, with more days of data.
6. **Reports should reach everyone:** besides the daily Element report, share short graph-based reports on WhatsApp.

Discussion

Solar, first results (Hillary)

- Installed: $8 \times 600 \text{ W} = 4.8 \text{ kWp}$. Planning figure: $4.8 \text{ kW} \times \text{about } 5 \text{ peak sun hours}$, less losses, gives **about 18 kWh a day**.
- Measured: **4.5 kWh (27 Oct)**, **4.6 kWh (28 Oct)**. The weather has been cloudy, although the weather app is unreliable for Uganda.
- **Wins:** night grid charge $160 \text{ Ah} \rightarrow 92 \text{ Ah}$ (–42%). The sun took the battery from 75% to 99% by 11:36. Today's 50-minute outage was covered, with the battery never below 89%.
- **How the site uses energy:** about 25 kWh a day, split roughly into shoulder 06:00–18:00 (38%), peak (42%) and off-peak (about 20%). With 18 kWh of solar a day, solar alone can't all be used during the day, which is why the night charge has to leave room.
- **Aaron's questions:**
 - Are customers running on solar at midday? Partly. The grid supplements when solar falls short.
 - Could a panel be faulty? Hillary: the open-circuit voltage was fine (300 V plus), the MC4 connectors snap together, and Dismas cleared vegetation for no shading.
 - Aaron: rather than trusting the installation, use tests that check it, and look at 7 days, not 2.
- **Someone on site to report the weather:** Aaron suggested Daphine.

Optimisation goal (all)

- Dansturn: why not discharge in off-peak too, or extend peak hours? Aaron: discharge where power is most expensive (peak). Peak hours are set by the regulator. Hillary: draining too deep harms the battery.
- It's a trade-off between profit and reliability. Rather than the team working through options by hand, set the goal and let the model test and report the options.

Dansturn's trip

- **AMDA contact:** keen on African solutions built by Africans; contacts taken. Aaron: open to collaborating, but first check with **Vivian** whether NFE would be one of the developers of the open-metering system.
- **Arila:** wants to use the Nansana pilot. She runs energy-IoT pilots on three continents (Auckland, another site, Nansana) to raise funds for scaling. A hackathon is planned for April (San Francisco). She wants NFE's bottlenecks and challenges. **Aaron meets her next week.**
- **Ministry of Energy (Uganda):** officials set up meetings next week in Uganda. Aaron warned they are much harder to reach at home than at conferences; go through their secretaries. The ministry wants to host an event next year and asked about partnering with Makerere University. NFE can connect them.
- **Metro-tel (Kenya):** Aaron knows them and will share their link.
- **SLS (battery as a service):** their earlier price (about US\$4–6 per kWh per month) didn't work for Nansana. It may work for the next, bigger site. Check in with them.
- **EVs:** EVs were everywhere. Ethiopia has set a date to stop importing combustion cars. EV charging on mini-grids may come sooner than expected.
- **Website:** visitors said there are no real photos. Use real site photos (Dismas has good roof photos). Dansturn has more comments on the website.
- **Global Energy Alliance:** didn't answer Aaron's email; he'll follow up another way.

Actions

#	Action	Owner	When
1	Crunch the solar and battery data; bring a proposal for the goal-driven model (max profit, 100% reliability)	Aaron	Saturday 31 Oct
2	Start building the dynamic night-charge target: 7-day history + weather forecast + outage profile	Hillary (agent)	now
3	Arrange for Daphine (or someone at Nansana) to report the weather and any shade	Aaron	this week
4	Check with Vivian whether NFE would be a developer of the open-metering system	Aaron	this week
5	Meet Arila about the Nansana pilot and hackathon	Aaron	next week

#	Action	Owner	When
6	Follow up the AMDA contact	Dansturn	next week
7	Ministry of Energy meetings; offer to connect them with Makerere for next year's event	Dansturn	next week
8	Share the Metro-tel link	Aaron → Hillary	this week
9	Check in with SLS about battery-as-a-service for the next site	Dansturn	when the next site is scoped
10	Send website comments; add real site photos (Dismas's roof photos)	Dansturn	next week
11	Follow up the Global Energy Alliance by another channel	Aaron	this week
12	Share short graph reports on WhatsApp as well as Element	Hillary	ongoing

Next meeting

Saturday 31 Oct 2026, 06:00 Kampala time.

Revision #3

Created 2026-10-28 19:19:16 UTC by hillary.arinda

Updated 2026-10-28 23:09:14 UTC by hillary.arinda