ORIJTECH ENERGY

energy made easy

Monthly Energy Report

What the meters recorded last month, what it cost, what caused it, and the three things worth changing — with the measurements behind each one.

PREPARED FOR

A 4-star hotel, Kampala

Client name redacted

REPORTING PERIOD

1 – 30 June

Month 7 of monitoring

METERING IN PLACE

7 three-phase meters

6 sub-circuits and the main · 21 sensors

PREPARED BY

Orijtech Energy

Analyst review and walkthrough included

SPECIMEN DOCUMENT

This is a specimen. It shows the structure, depth and standard of an Orijtech Energy monthly report so that you can judge the deliverable before commissioning one. The facility is not identified, and every figure in it is illustrative rather than any client's actual data. A real report carries your meters, your tariff and your month.

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Executive summary

Consumption rose 4.1% against May on one more occupied room-night per day. The cost rose 6.8%, faster than the consumption, because a larger share of the month's electricity was drawn inside the peak band. That gap between the two percentages is the subject of this report.

CONSUMPTION	ELECTRICITY COST	PEAK DEMAND	PEAK-BAND SHARE
148,620	**119.9M**	**412**	**27.9%**
kWh · +4.1% vs May	UGX incl. VAT · +6.8% vs May	kVA · 82.4% of the 500 kVA transformer	of kWh · 36.1% of the energy charge

Where the month's cost came from

Consumption and energy charge by time-of-use band. Illustrative rates — see Basis of report.

BAND	HOURS	KWH	SHARE OF KWH	ENERGY CHARGE (UGX)	SHARE OF CHARGE
Off-peak	00:00 – 06:00	24,180	16.3%	10,397,400	10.8%
Shoulder	06:00 – 18:00	82,910	55.8%	51,404,200	53.1%
Peak	18:00 – 24:00	41,530	27.9%	34,885,200	36.1%
Total energy charge		**148,620**	**100%**	**96,686,800**	**100%**

From energy charge to the invoice total.

LINE	BASIS	UGX
Energy charge	148,620 kWh across three bands	96,686,800
Demand charge	412 kVA at the illustrative demand rate	4,944,000
VAT	18% of the subtotal	18,293,544
Total for the month		**119,924,344**

Decision required this month

One decision, and it costs nothing to make: whether the laundry schedule moves out of the 18:00 – 24:00 band. Action A1 on page five sets out the measured basis and the indicative saving. The other two actions are investigations we can carry out ourselves and report on next month.

Cost attribution by area

Each area below is a separately metered part of the building, not an apportionment of the total. This is the table that makes a reduction target something a department manager can be held to, and the table a finance office can put beside a budget line.

Metered areas, June. Percentages are of the month's total consumption.

METERED AREA	METER	KWH	SHARE	COST (UGX)	VS MAY
Guest rooms and corridors	M-01	44,590	30.0%	28,300,000	+2.8%
HVAC and chiller plant	M-02	29,720	20.0%	19,480,000	+1.1%
Kitchen and food preparation	M-03	26,760	18.0%	17,150,000	+5.4%
Laundry	M-05	22,290	15.0%	16,600,000	+14.2%
Conference and public areas	M-06	11,890	8.0%	7,420,000	+9.7%
Back of house and offices	M-04	8,920	6.0%	5,010,000	−18.4%
Unmetered balance	—	*4,450*	*3.0%*	*2,726,800*	*−0.6%*
Total		**148,620**	**100%**	**96,686,800**	**+4.1%**

What the balance line is, and why it is on the page

The balance is the difference between the incoming main meter and the sum of the six sub-meters: 4,450 kWh, 3.0% of the month. It is not a rounding error and it is not attributed to anybody. Two loads sit inside it — the borehole pump and the staff quarters — and neither is metered. We show the line rather than distributing it across the areas that are metered, because distributing it would make six accurate numbers slightly wrong in order to make one unknown disappear.

The two movements worth explaining

MOVEMENT 1

Laundry, +14.2% on +4.1% occupancy

Laundry consumption grew more than three times faster than the occupancy that drives it. The load profile shows why: the department ran on 19 of 30 evenings inside the 18:00 – 24:00 band, against 6 evenings in May. The kWh growth is real but modest; the cost growth is mostly a question of when the machines ran, not how much they ran.

MOVEMENT 2

Back of house, −18.4%

This is the measured result of last month's corridor and office lighting schedule change. It is reported again on page five, alongside the action that produced it.

Load and demand behaviour

Consumption tells you what you used. Demand and power factor tell you what the utility charges you for having the capacity available, and both are measured continuously rather than inferred from the monthly total.

Measured load and power-quality indicators, June.

INDICATOR	JUNE	MAY	WHAT IT MEANS HERE
Overnight baseload, 02:00 – 04:00	118 kW	116 kW	51% of the 230 kW average daytime load, in a building with no night operation
Weekend daytime average	196 kW	191 kW	Only 20% below the 244 kW weekday daytime average, on far lower occupancy
Peak demand	412 kVA	389 kVA	Recorded Tuesday 14th, 19:40 — sets the month's demand charge
Transformer loading at peak	82.4%	77.8%	Of 500 kVA installed. Headroom is narrowing month on month
Power factor, monthly average	0.87	0.89	Below the 0.95 threshold commonly applied to this class of supply
Power factor, minimum	0.79	0.84	Recorded during the 14th peak event, with chiller and laundry both running

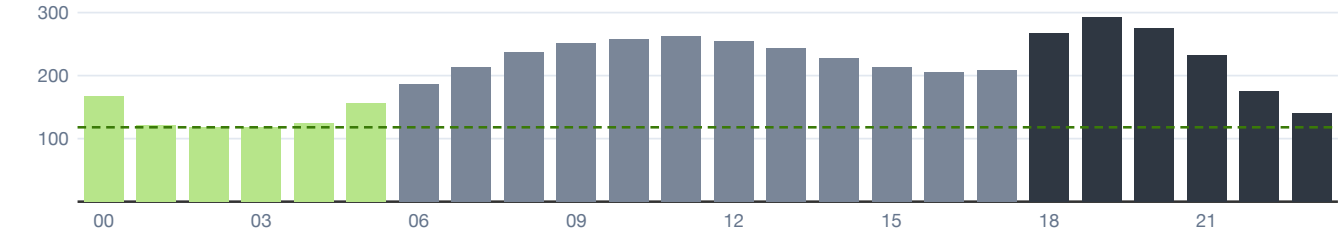
The peak event of 14 June, 19:40

Four loads were running together for eleven minutes: the chiller plant on a post-service pull-down, both laundry machines, the kitchen extract, and the conference hall lighting after an evening function. Nothing was faulty. The month's demand charge was set by a coincidence of schedules, which is the kind of cost that changes without capital expenditure.

The same event reads twice: at 82.4% the transformer is adequate but no longer comfortable, which belongs in the next capital plan rather than in a future expansion.

Average daily load profile

Mean kW by hour, coloured by band. The same numbers as the band table on page two, over thirty days.



Off-peak Shoulder Peak · dashed line: the 118 kW overnight baseload · the two tallest evening bars are the ones worth moving.

Recommended actions

One decision for you, two investigations we carry out. Each names the load, the owner and the meter it will be verified against.

A1 · NO CAPITAL COST

Move laundry cycles to finish before 18:00

The measured basis is 19 evening runs across the month inside the peak band. Rescheduling to the shoulder band moves an estimated 4,100 – 5,400 kWh out of the highest-priced hours.

Indicative saving UGX 2.6M – 3.4M per month — labelled indicative because it assumes the same wash volume and the bands on page six, and has not been measured. Owner: Housekeeping; verified on M-05 next month.

A2 · INVESTIGATION

Account for the 118 kW overnight baseload

Three named candidates carry the load between 01:00 and 04:00: the kitchen cold rooms, the corridor and external lighting circuits, and the standby chiller. We can separate them from the existing meters within one cycle; no additional hardware is required.

No saving is claimed until the load is identified. Owner: Orijtech analyst.

A3 · ENGINEERING REVIEW

Inspect the capacitor bank before the next demand review

Average power factor has fallen for two consecutive months and reached 0.79 under combined load. An inspection determines whether the correction equipment is switching as designed.

Owner: Facilities, with Orijtech present. No cost figure until the inspection reports.

Last month’s actions, and what they actually did

A report that never checks its own previous advice is a newsletter. Every action agreed last month is repeated with its measured outcome, including the ones that did not work.

May actions and their measured June outcome. Verdicts are what the meters showed, not what we hoped.

ACTION AGREED IN MAY	VERDICT	WHAT THE METERS SHOWED
L1 Corridor and office lighting moved to a scheduled profile	MEASURED EFFECT	Back-of-house circuit down 4,120 kWh, –18.4%, roughly UGX 2.55M at the June band mix. Verified on M-04 against the same weekday profile. Permanent; no further attention needed.
L2 Chiller setpoint raised by 1 °C	NO EFFECT	M-02 changed +1.1%, inside normal variation. The plant was already cycling on return-water temperature, so the setpoint had nothing to act on. Revert it and close the action. No saving recorded.
L3 Kitchen extract fans switched off between services	NOT IMPLEMENTED	The kitchen team raised a ventilation concern not considered when the action was written. Carried forward for the walkthrough, not quietly dropped or restated as a saving.

Basis of report

An energy report is only useful if you can trust the parts you did not check. This page states what the numbers rest on, so that you can.

Measurement

Seven three-phase smart meters — six on sub-circuits and one on the incoming main — each fitted with three current sensors, twenty-one sensors in total. Data recorded at one-minute intervals and aggregated to the half hour for reporting. No consumption in this report is estimated from nameplate ratings or inferred from the utility bill.

Data completeness

Twenty-nine of thirty days are complete. A communications outage on the 22nd cost six hours on meters M-03 and M-05; the gap was filled by interpolation from the preceding seven same-weekday profiles. The affected period is 0.8% of the month. It is stated here rather than smoothed into the totals without comment.

Unmetered load

The borehole pump and the staff quarters are not metered. Their consumption appears in the balance line on page three and is not attributed to any department. Metering either of them is a one-day addition if the attribution matters to you.

Tariff and rates

Time-of-use bands are the default periods used in Orijtech analysis unless a client tariff differs: off-peak 00:00 – 06:00, shoulder 06:00 – 18:00, peak 18:00 – 24:00. VAT is applied at 18%. The unit rates and the demand rate behind every UGX figure in this specimen are illustrative and are not any client's actual tariff. In a real report the rates are your own, printed here in full, so you can check the arithmetic against your bill line by line.

Facts and recommendations

Observations state what the meters recorded. Recommendations state what we think you should do about it. Where a saving is estimated rather than measured, it is labelled indicative and the assumption behind it is written next to it. No saving is guaranteed.

Anonymisation

The client, the site and all identifying detail have been removed from this specimen, and the figures are illustrative. It is published to show the structure and standard of the deliverable, not to report on any organisation.

Next step

If this is the standard of reporting you want against your own meters, the starting point is a site assessment: we establish what is worth metering, what it would take, and what the first report would be able to tell you. There is no charge for it and no obligation attached to it.

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