

03 · DATA CENTRES · COLOCATION · ENTERPRISE · HYPERSCALE



BATTERY STORAGE FOR

Data centres.

Always on. Always billed.

A data centre buys power every half-hour of the year, at whatever Eskom charges for it. AMPROTEQ storage takes the campus out of the peak windows, holds its demand under the ceiling and shares the load with the standby sets when the grid goes. The UPS stays as it is.

THE SYSTEM

APEX battery
NEXUS MV skid
PULSE switch
Solaris™ EMS

7.20 R/kWh

HIGH-SEASON PEAK

Megaflex 500 V – 66 kV,
2026/27, ex VAT

8 760 h/yr

THE LOAD NEVER STOPS

IT halls run flat, cooling follows
the heat

62.55 R/kVA

EACH MONTH, ON THE NMD

Capacity charges, before any
energy

≤ 10 ms

PULSE TRANSFER

Inside the 20 ms IT supplies ride
through

CHEMISTRY

Liquid-cooled LFP · ≥ 88 % RTE

ENCLOSURE

IP55 · C5 · –30 ... +55 °C

SA GRID CODE · PCS MODULE

NRS 097-2-1

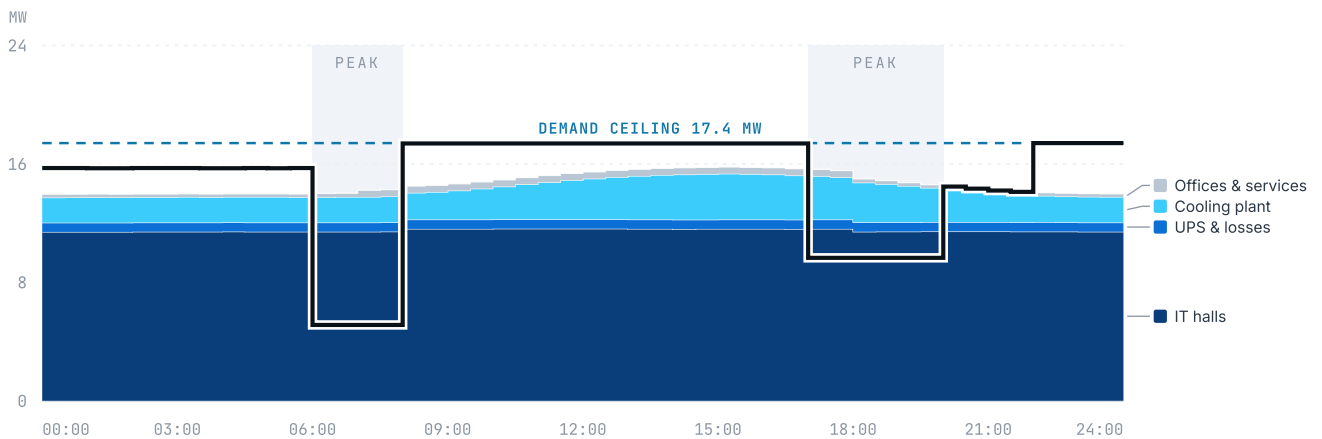
02 • WHERE THE MONEY IS

A load that never sleeps, priced by the half-hour.

The IT load is flat, so a data centre buys as much energy in the peak windows as at night. The battery earns in that gap, and in the demand the cooling plant no longer sets.

FIG 02-1 • AVERAGE HIGH-SEASON WEEKDAY, 20 MVA COLOCATION CAMPUS

MODELLED • MW



The black line is grid draw with a 10 MW / 20 MWh plant: lower through both peak windows, refilled at midday and overnight, never above the 17.4 MW ceiling.

MEGAFLEX 2026/27 • 500 V - 66 KV C/KWH EX VAT

High-season peak		720 c
High-season standard		180 c
Off-peak, all year		120 c
Low-season peak		299 c
Low-season standard		168 c

Active energy, transmission zone 0. A kilowatt-hour moved from off-peak into a winter peak is worth about five times what it cost, after losses.

WHERE THE BATTERY FITS

OUR VIEW

LOAD	PATTERN	BATTERY ROLE
IT halls	Flat, 24 / 7, growing	Peak shifting
Cooling plant	Afternoon heat	Demand ceiling
UPS	Milliseconds to minutes	Stays as it is
Standby sets	Hours, on an outage	Run lighter, burn less
New halls	Steps of 1 – 2 MW	Room under the NMD

FIVE JOBS, ONE BATTERY

SOLARIS RUNS THEM AGAINST ONE STATE OF CHARGE

01 Peak shifting
Charges off-peak and at midday, and carries the campus through both peaks.

02 Demand ceiling
Discharges when the chillers push demand up, so one heatwave does not set the year.

03 Curtailment cover
Delivers the cut when Eskom asks for less, with no set started and no hall touched.

04 Standby support
Shares the load with the sets in an outage, so they burn less fuel.

05 Power factor
Four-quadrant conversion supplies reactive power and holds the campus at 0.99.

WHAT IT DOES FOR THE MODELLED CAMPUS

FROM THE DATA-CENTRE CASE STUDY

20.2 R m

GROSS SAVING, YEAR ONE
At FY2027/28 prices

34 %

LESS ENERGY BOUGHT IN PEAK
6.6 GWh moved a year

2 MVA

OFF THE NOTIFIED DEMAND
Lower the NMD, or fill it with IT

<4 years

SIMPLE PAYBACK
On an indicative turnkey cost

03 · THE SYSTEM

Beside the UPS, never instead of it.

03

The UPS keeps doing what it was designed for. The battery works upstream, at 22 kV, on the bill every day and beside the standby sets when the grid goes.

BATTERY · APEX

A5000

Liquid-cooled LFP in one 20 ft high-cube. Four sit on two 22 kV bays in the case study.

ENERGY	5.0 MWh · 4.5 usable
DC WINDOW	1 120 – 1 500 V
THERMAL	Liquid · $\leq 3^{\circ}\text{C}$ spread
ENCLOSURE	IP55 · C5
FIRE	Smoke, gas, aerosol

MV SKID · NEXUS

N2500

Converters, step-up and MV switching on one skid, matched one-to-one to the A5000.

POWER	2.5 MW · 2 DC groups
CONVERTERS	12 × 215 kW
CONNECTION	10 – 35 kV
GRID	PF -1 ... +1 · VSG
GRID CODE	NRS 097-2-1

TRANSFER · PULSE

P-series

A static switch for critical 400 V boards: grid and genset ahead, battery and load behind.

FRAMES	P500 · P1000 · P2000
TRANSFER	$\leq 10 - 20$ ms
BUS	400 V · 3W + N + PE
RETURN	Closes back in phase
BYPASS	Manual, for service

CONTROL · SOLARIS™

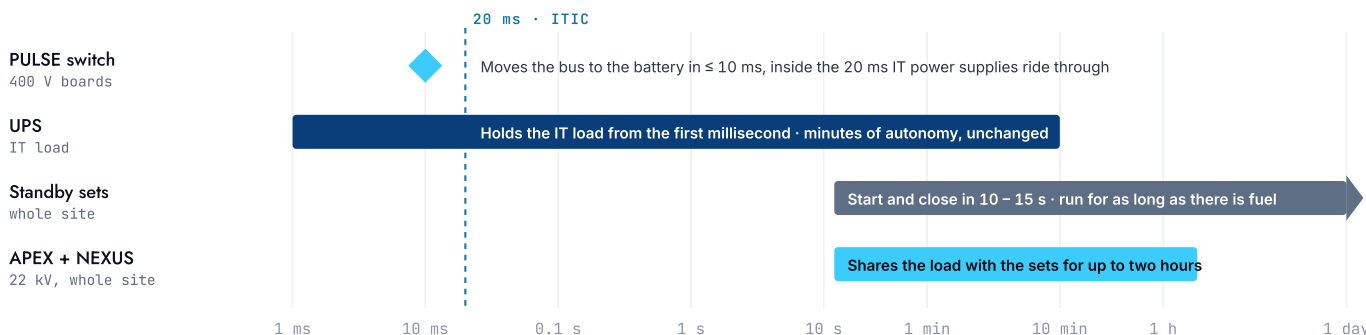
EMS

One controller runs every job against one state of charge and reports to your BMS.

JOB	Peak · ceiling · PF
FORECAST	Load and weather
PROTOCOLS	IEC 61850 / 104
SCADA	To your BMS / NOC
ACCESS	VPN · on-site HMI

FIG 03-1 · THREE LAYERS OF SUPPLY, BY HOW LONG EACH ONE CARRIES THE LOAD

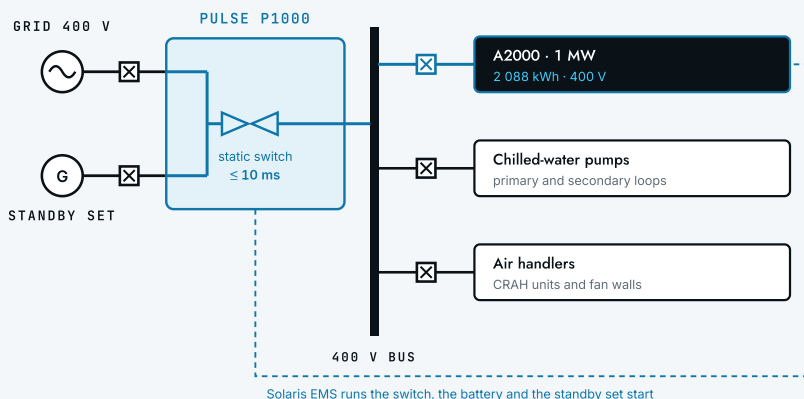
LOG SCALE



Nothing in the critical path changes: the UPS still holds the IT load through the transfer and the sets still start on every outage. The battery adds a fourth layer that shortens the sets' work, and on critical 400 V boards PULSE keeps pumps and air handlers turning through the switch.

OPTION: KEEP THE COOLING RUNNING THROUGH THE SWITCH

A2000 + PULSE ON THE MECHANICAL BOARD



Cooling that keeps moving

PULSE moves the mechanical board to the battery in ≤ 10 ms. Pumps and air handlers keep chilled water and air flowing while the sets start.

No cold start at the worst moment

The cooling board never drops, so there is no restart sequence while the halls are warming.

One frame per board

P500, P1000 or P2000 per mechanical board, with one or two A2000 systems behind it at 400 V.

An option, not in the payback

Added on top of the 22 kV plant where the cooling design calls for it, and priced per board.



04 • THE RETURN

An asset that pays for itself in less than four years.

<4 years

SIMPLE PAYBACK

on an indicative turnkey cost

39 %

PROJECT IRR, 15 YEARS

after O&M and augmentation

8.4 ×

THE INVESTMENT, RETURNED

net cash over the term

THREE WAYS TO BUY

Purchase Most operators

Turnkey supply, install and commissioning. You own the plant; we run it under a 15-year O&M and availability agreement.

Service agreement

We own and run the plant for a fixed monthly fee, for operators who keep storage off the balance sheet.

Phased

Start with two blocks on one bus section and add pairs as new halls are let and the next bay is free.

LOAD STUDY TO POWER IN 38 WEEKS



WEEK 1

Load study

your data, our model



WEEK 6

Proposal

sizing, price, terms



WEEK 14

Studies and order

grid, protection, change control



WEEK 28

On site

delivery, civils, cable



WEEK 38

Power

commissioned

YOUR NEXT STEP

A free load study, in five working days.

Send twelve months of half-hour data, your tariff, your NMD and your standby plant. You get the sizing, the bill before and after, the fuel saved and the payback.

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