

Estate sub-metering — implementation guide.

The governance + technical playbook for moving a residential estate to per-villa water billing. Meter selection, SANS 1529-1 calibration, dispute procedure, trustee briefing pack.

01 - Meter selection

Ultrasonic battery-powered meters with built-in radio (Itron, Diehl, Kamstrup, Sensus) are the modern default for residential sub-metering: $\pm 2\%$ accuracy across the dynamic range, no moving parts, 10–16 year battery life, automatic 15-minute reads. Capital cost difference vs legacy mechanical: R1,800–R3,200 per villa point. Operational cost difference: dramatic — see governance section.

02 - Calibration & certification

Every meter must carry a SANS 1529-1 calibration certificate. Without it, the reading is not legally enforceable in a dispute. Calibration is performed at the manufacturer's facility or by a SANAS-accredited test bench. Renew every 5 years or after any meter swap.

03 - Commissioning protocol

All meters zeroed on the same day with photographic record. Bulk meter installed at the property feed line, sub-meters at every villa boundary. Initial 30-day shakedown reads daily, weekly thereafter. Reconciliation report at day 30 establishes baseline NRW.

04 - Bulk-vs-sum reconciliation

Monthly: compare bulk meter reading to sum of villa sub-meters. The difference is 'estate water' — irrigation, plant losses, leaks. Track the rolling 12-month trend. A persistent rise in estate water is the leakage signal that justifies a leak-detection campaign.

05 - Dispute procedure

Villa raises query → trustee logs ticket → 30-day window for meter swap-out and bench test by SANAS lab → outcome recorded on AGM minutes. Disputes do not vanish; they are processed.

06 - Trustee briefing pack



Quarterly: per-villa consumption distribution, top-10 high-consumers, NRW trend, leak-detection actions taken, total water cost vs budget. Standard one-page format keeps the AGM water agenda below 15 minutes.

Reference: SANS 1529-1, Water meters for cold potable water; OIML R 49; Arregui et al., Integrated Water Meter Management, 2nd ed., IWA Publishing, 2018.