

MEASURING WHAT MATTERS: HIGH-GRANULARITY RAN ENERGY INTELLIGENCE FOR VIRGIN MEDIA O2

Business Challenge

VMO2 needed to validate real-world energy use across modernised RAN sites to assess efficiency, identify high consumption drivers, and test optimisation options.

Key challenges included:

- Capturing precise energy measurements across operational RAN infrastructure
- Deploying the solution across select (5 – 20) **live RAN sites** with minimal disruption
- Monitoring up to **64 different measurement points** per site environment
- Integrating hardware, analytics, temperature sensing, and operational support into one deployment
- Ensuring full commissioning, ongoing availability, and decommissioning after trial closure

Overview

As telecom operators pursue **Intelligent Network Modernisation**, energy visibility across the Radio Access Network is becoming a critical foundation for more efficient, sustainable operations. Virgin Media O2 needed accurate, real-world insight into energy consumption across its live modernised RAN infrastructure to support future optimisation and informed network-wide decisions.

Following a successful VISION Energy deployment on their RAN sites, we were engaged to extend the solution to a set of modernised sites, establishing a high-granularity measurement baseline without impacting network KPIs. The programme supported VMO2's sustainability and network modernisation goals by validating new RAN equipment efficiency and trialing energy optimisation options.

The Cyient Solution

We applied a domain-first approach to deploy VISION Energy across live RAN sites, combining high-granularity measurement, analytics, and operational delivery without impacting network performance.

Site-ready deployment

Delivered full datalogger preparation, shipping, installation, testing, and commissioning across trial sites.

Temperature-aware monitoring

Integrated a measurement kit with 7 indoor and 1 outdoor sensor per deployment for contextual interpretation.

Analytics portal activation

Set up cloud licensing, vendor activation, connectivity validation, and user access for VISION Energy.

Operational support and continuity

Provided ongoing O&M coverage, remote SME assistance, and platform stability during the trial period.

High-frequency power measurement

Captured energy data every 10 seconds with low error rates, supporting module-level consumption analysis.

Controlled decommissioning

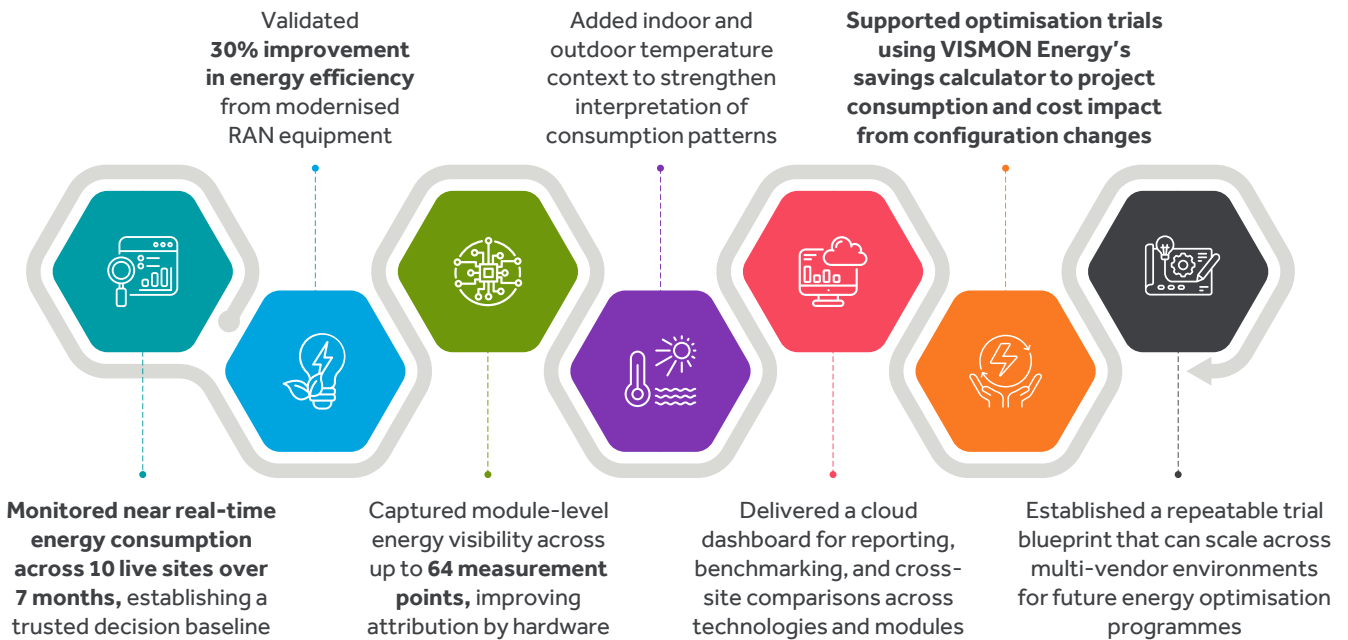
Managed safe dismantling and equipment removal at trial closure.

Through the granular energy consumption data, VMO2 could validate the different sources of energy consumption and identify the causes of unexpectedly high energy consumption at the modernised sites. This allowed VMO2 to take informed decision and perform energy optimisation trials.



Fig 1: Energy Consumption Dashboard

The Results



Designing Tomorrow Together

VISION Energy helped VMO2 measure and benchmark energy efficiency across live RAN sites.

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