

CASE STUDY – Building a Greener Future — An ISO 14001 Certified Green Tier 4 Data Centre

How Quo Group leveraged deep expertise in infrastructure, network, and data centre design to build a solar-powered, lithium-battery-enabled, ISO 14001 certified Tier 4 data centre — delivering secure, high-performance, ESG-compliant cloud solutions for modern business.

Executive Summary

The Opportunity

Legacy data centres are ageing, energy-hungry, and increasingly incompatible with corporate ESG commitments — yet demand for secure hosting and AI-ready compute is rising fast.

The Solution

Quo Group designed and built a next-generation **Tier 4, ISO 14001 certified green data centre** powered by **on-site solar** and **lithium battery storage**, engineered for efficiency, resilience, and AI workloads.

The Results

- ✓ **70%** lower carbon emissions vs traditional data centres
 - ✓ **45%** reduction in energy consumption
 - ✓ **30%** lower operating costs
 - ✓ **Power Usage Effectiveness (PUE) of 1.25** — industry-leading efficiency
 - ✓ **100%** renewable energy from on-site solar + battery
 - ✓ **Tier 4** uptime resilience & **ISO 14001** environmental certification
 - ✓ **AI-ready** — high-density GPU, edge inference & on-premise AI enabled
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From Expertise to Innovation

Quo Group didn't arrive at green data centres by accident. This offering is the natural evolution of decades of hands-on capability across three foundational disciplines:

- **Infrastructure Design** — robust, scalable, and efficient physical infrastructure honed across countless enterprise deployments.

- **Network Design** — high-availability, low-latency, secure connectivity architectures.
- **Data Centre Technologies** — Tier 4 architecture, advanced cooling, and intelligent systems management.

These strengths gave us a unique vantage point: we could see precisely **where older data centres waste energy** — and how to engineer that waste out. The result is a new offering built on a simple thesis: *older, inefficient data centres can be replaced with dramatically more efficient, sustainable systems — without compromising performance.*

The Challenge: The Cost of Ageing Infrastructure

Many organisations remain tethered to data centres that were never designed for today's realities:

- **Rising data demands** outpacing legacy capacity.
- **ESG commitments** that ageing, fossil-reliant facilities simply cannot meet.
- **Escalating energy costs** driven by inefficient mechanical cooling and poor power utilisation.
- **AI adoption pressure** — legacy racks can't support the density or thermal loads modern GPU workloads require.

Businesses were being forced to choose between **sustainability, cost, and performance**. Quo Group set out to eliminate that trade-off.

Our Green Data Centre at a Glance

Feature	Specification
 Renewable Energy	100% from on-site solar and ACT's renewable grid feed
 Battery Storage	Lithium BESS
 Efficiency (PUE)	1.25 — industry-leading
 Cooling	Free-air + advanced efficient systems
 Resilience	Uptime Institute Tier 4
 Environmental	ISO 14001 certified EMS

How Solar + Lithium Work Together

On-site **solar generation** powers the facility during daylight, while **lithium battery storage** captures surplus energy to deliver clean power around the clock — smoothing demand peaks, providing seamless failover, and keeping the facility genuinely green 24/7. A renewable-backed grid connection provides an additional layer of assurance, underpinning **Tier 4 availability**.

Efficiency That Delivers

Power Usage Effectiveness (PUE): Old vs Green

The single clearest measure of data centre efficiency — and where legacy facilities bleed the most cost and carbon.

By driving PUE down from a typical legacy **1.85** to **1.15–1.25**, Quo Group delivers roughly **38% greater power efficiency** — energy that goes to compute, not waste.

100% Renewable Energy Mix

Solar leads the mix, with lithium storage and a renewable-backed grid ensuring continuous, green-aligned power.

Carbon Emissions Reduction Over Time

The gap between legacy baseline and the green facility represents real, measurable carbon savings — the kind that stand up to ESG reporting scrutiny.

AI-Ready, Today and Tomorrow

A common misconception is that "green" means "less powerful." Quo Group proves the opposite. **Efficient power delivery and advanced cooling are precisely what modern AI workloads demand.**

Because our facility runs cooler and more efficiently, we can support **higher rack densities** and sustained thermal loads — enabling:

- **Edge AI inference at the source** — low-latency processing close to where data is generated.
- **On-premise AI for data sovereignty** — keeping sensitive corporate data in-country and in-control.
- **Low-latency, high-throughput GPU compute** for real-time applications.
- **Scalability for training and inference** as AI adoption grows.

Cooling Efficiency & AI Readiness

Efficient cooling isn't just a sustainability win — it's the enabler for high-density AI compute.

The efficiency gains directly translate into AI capability: our infrastructure is engineered to support **~5x growth in AI workload capacity by 2028**, giving clients room to scale inference and training without re-platforming.

AI Integration: Green Infrastructure as an AI Enabler

Quo Group didn't simply make the green data centre *compatible* with AI — we designed it so that **efficiency and AI capability reinforce one another**. The same

engineering choices that lower carbon and cost are precisely what unlock dense, sustainable AI compute.

Why Efficiency and AI Are Two Sides of the Same Coin

AI workloads are thermally intense. Legacy facilities hit a wall: they can't dissipate the heat from high-density GPU racks without ballooning energy use and cost. Because Quo Group runs at a **PUE of 1.25 with free-air and advanced liquid-ready cooling**, we can sustain **high rack densities** that would overwhelm a traditional data centre — turning our sustainability advantage directly into AI headroom.

The AI Integration Stack

Our facility supports AI across the full lifecycle, not just as an afterthought:

Layer	Capability	Business Value
Edge Inference	Low-latency processing close to the data source	Real-time decisions, reduced backhaul
On-Premise / Dedicated AI	Isolated GPU environments within the facility	Data sovereignty & compliance
Model Training	High-density, sustained GPU compute	Scalable training without re-platforming
Hybrid AI Orchestration	Seamless burst between on-prem and cloud	Cost-optimised, elastic capacity

Data Sovereignty & Secure AI

For regulated industries — finance, healthcare, government, and defence-adjacent sectors — sending sensitive data to offshore public AI platforms is often a non-starter. Quo Group enables **on-premise and in-country AI inference**, keeping corporate and customer data:

- **Resident in Australia**, aligned to local data sovereignty requirements.
- **Isolated and secured** within Tier 4, ISO-aligned infrastructure.
- **Governed** under the client's own compliance and ESG frameworks.

This lets organisations adopt AI **without trading away security or regulatory posture**.

Sustainable AI: Lowering the Carbon Cost of Compute

AI's energy appetite is one of the fastest-growing concerns in corporate ESG reporting. By running inference and training on **100% renewable, solar-and-battery-backed power**, Quo Group allows clients to:

- Deploy AI while **reducing — not inflating — their carbon footprint**.
- Report **green AI compute** as part of their ESG and sustainability disclosures.
- Offset the reputational and regulatory risk of high-emission AI operations.

Built to Scale with AI Demand

Our modular power and cooling architecture is engineered to support approximately **5x growth in AI workload capacity by 2028**, giving clients confidence that their infrastructure can grow with model complexity and adoption — no forklift upgrades, no sustainability compromises.

The Quo Group AI Advantage

-  **Efficient cooling** → higher GPU density → more AI per rack
-  **Sovereign, secure environments** → compliant AI adoption
-  **Renewable-powered compute** → genuinely green AI
-  **Modular scalability** → AI-ready today, future-proofed for tomorrow

Quo Group turns the green data centre from a sustainability statement into a **strategic AI platform** — proving that organisations no longer have to choose between innovation, compliance, and the planet.

Replacing the Past. Powering the Future.

	Traditional Data Centre	Quo Group Green Data Centre
PUE	1.80 – 2.20	1.25
Energy Source	Grid (fossil intensive)	100% Renewable (Solar + Battery)
Cooling	Mechanical (high energy)	Free-air + efficient systems
Carbon Emissions	High	70% lower
ESG Compliance	Limited	ISO 14001 certified

Secure. Resilient. Compliant.

Sustainability never comes at the expense of trust. The facility is built for enterprise-grade assurance:

- **Tier 4 certified** for maximum availability
- **Advanced physical and cyber security**
- **ISO 14001** environmental management
- Built for compliance with **global standards**
- **Business continuity by design**

"Our green data centre proves that performance, resilience and sustainability can — and must — go hand in hand."

— CEO, Quo Group

Why Quo Group

We help enterprise and mid-market organisations move off ageing, inefficient infrastructure and onto a platform that meets their **performance, cost, and ESG goals simultaneously**.

Our capability spans:

- Green Tier 4 data centre design & build
- Infrastructure & network engineering
- Secure data housing & application hosting
- AI-ready, high-density compute environments
- ISO 14001 & ESG-aligned operations
- Edge and on-premise AI enablement

Ready to Build a Greener Future?

Let Quo Group help you transform your infrastructure with sustainable, high-performance cloud solutions that align with your business and ESG objectives.

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Quo Group — Sustainable today. Reliable always. Ready for tomorrow.