

Energy Efficiency Technologies and Upgrades

Canonical: <https://northmoregordon.com/technologies/>

Details:

On this page: Overview · Assessment · Browse technologies · Related guidance · Next step

Choose technology around the site and the decision

Energy upgrades can reduce operating costs and emissions when the technology suits the load, controls, operating pattern and maintenance capability of the site. The equipment name alone does not establish the saving, payback or certificate outcome.

Begin with the actual energy use and operating problem. An energy audit can compare opportunities across systems, while measurement and verification defines how performance will be evaluated after implementation.

Build the evidence before committing

Define the existing system boundary, load and operating schedule.

Check interactions with production, comfort, water, controls and other equipment.

Compare equipment capacity and part-load performance against actual demand.

Separate energy savings, tariff effects, maintenance benefits and certificate income.

Review scheme requirements and certificate pathways before installation when timing matters.

Plan commissioning and post-project verification.

Browse Energy Efficiency Upgrades

Battery Storage Certificates

Boiler Upgrades

Commercial Lighting

Compressed Air Optimisation

Hot Water Systems

Solar VEECs

NABERS – Technology

Public Lighting

Refrigerated Display Cabinets

Solar PV Small scale

UPS (Uninterruptible Power Supply)

Related guidance

Heat-pump and solar hot-water upgrades

Move from audit findings to implementation

See a technology opportunity assessment in practice

Discuss the site conditions first

Contact Northmore Gordon with the existing equipment, energy records, operating pattern and project timing so the assessment can be matched to the decision.

What is Northmore Gordon's approach to helping businesses identify and fund energy technology upgrades?

We combine technical assessment with funding pathway analysis across energy efficiency technologies. Our six-stage delivery approach—Assess, Build the Case, Capture Value, Deliver, Procure, and Perform—connects engineering evaluation of equipment options with identification of applicable government incentive schemes. By understanding a site's actual operating requirements, energy consumption patterns, and available upgrades, we help businesses select technologies eligible for certificates or grants under Victorian Energy Upgrades, NSW Energy Savings Scheme, or renewable energy schemes. This integrated approach ensures that technology choices are both technically sound and commercially viable through verified funding pathways.

How do boiler upgrades deliver both operational and environmental benefits?

High-efficiency boiler systems reduce fuel consumption and associated costs while maintaining reliable heat supply across industrial and commercial operations. Beyond cutting energy bills, modern boilers deliver lower maintenance and reduced downtime compared to aging equipment, right-sizing capacity to actual current demand rather than historical oversizing. From an environmental perspective, efficiency improvements directly reduce greenhouse gas emissions from fuel combustion. For facilities in Victoria and New South Wales, eligible boiler replacements can generate Victorian Energy Efficiency Certificates or contribute to NSW Energy Savings Scheme outcomes, partially offsetting capital expenditure. Industries from food processing to municipal facilities benefit from this combination of operational reliability, cost reduction, and emissions improvement.

What makes solar PV projects accessible for smaller installations under Australian renewable schemes?

Small-scale Technology Certificates (STCs) make solar PV accessible to facilities across all Australian states by providing financial incentives at the point of installation. Our solar PV small-scale offering removes complexity through simplified evidence collection, pre-validation of panel technologies to avoid ineligible equipment, and dedicated compliance support. Our approach—including an app for solar panel validation and a single dedicated compliance officer—minimizes paperwork and administrative burden. This streamlined process allows businesses to lock in certificate prices and achieve fast payback timelines while maintaining industry-leading expertise in eligibility assessment. The availability of STCs across all states, combined with straightforward evidence requirements, makes small-scale solar accessible for diverse business types seeking to reduce electricity purchases.

How does measurement and verification establish the credibility of energy savings claims?

Measurement and verification (M&V;) determines actual energy improvements by comparing pre- and post-upgrade consumption under comparable operating conditions, separating real equipment performance from changes in production volume, weather, or operating hours. A practical M&V; approach requires defining project boundaries, establishing baseline consumption under representative conditions, specifying measurement instruments and intervals, recording implementation details, and calculating savings with transparent adjustments. This discipline is essential because two consecutive utility bills cannot alone prove an upgrade's effect—consumption may fall due to reduced production,

shortened operating hours, or seasonal factors rather than equipment performance. Our M&V; services, including baseline modelling and savings calculation, establish evidence credible enough for investment contracts, internal performance tracking, and government certificate schemes. This rigor protects project economics and supports reliable performance reporting.

What decision framework should a business use when comparing multiple energy upgrade options?

A robust investment case compares alternatives using identical operating requirements, energy prices, analysis periods, and assumptions about ongoing maintenance and capital replacement. Each option should separately identify equipment and installation costs, enabling infrastructure, commissioning, ongoing operation, and planned maintenance. Benefits must be disaggregated: energy reduction quantities should be stated with their boundary and calculation basis; tariff or demand effects should reflect actual rate structures; maintenance or operational improvements should be quantified; and certificate or grant proceeds should show eligibility, quantity, price date, and any applicable charges. By presenting the project with and without conditional funding, management understands whether the investment remains sound if support is delayed or unavailable. Our investment case guidance emphasizes transparent assumptions and separate comparison of alternatives, ensuring that technology selection reflects both technical merit and financial viability.

Why is project timing critical for securing funding and maintaining eligibility for energy upgrades?

Project timing determines whether baseline data can be collected, whether measurement plans can be implemented, and whether applicable scheme requirements are satisfied. Different programs have different entry points: some require registration before physical work begins, while others assess eligibility based on installation or commissioning dates. For example, ACCU carbon projects have specific newness requirements tied to investment commitments and asset decisions. Energy Savings Scheme eligibility depends on rule versions that change periodically, and Victorian Energy Upgrades has method-specific prerequisites. Recording precise dates for feasibility approval, final investment decisions, equipment purchases, installation, and commissioning reveals which funding pathways remain available. Raising measurement and eligibility questions while the project is still being scoped, rather than after installation, preserves evidence and prevents projects from losing viable incentive options due to timing constraints that could have been avoided.

What types of businesses and facilities benefit from Northmore Gordon's energy optimisation services?

Our energy optimisation applies to industrial facilities, commercial buildings, and utilities across diverse sectors. Industrial sites include food and beverage processing, animal processing, aquaculture, and manufacturing requiring process heat, refrigeration, or compressed-air systems. Commercial buildings encompass offices, hospitality, retail, and data centres with HVAC, lighting, and plug loads. Water utilities operate multiple sites requiring pumping, treatment, aeration, and wastewater handling at scale. Each facility type presents distinct energy patterns and upgrade opportunities. Our assessment services—energy audits, utility benchmarking, metering plans, and feasibility studies—are tailored to each sector's operating constraints and investment criteria. By combining engineering assessment with implementation support, funding pathway analysis, and performance verification, we help diverse organisations turn energy efficiency opportunities into sustained operational and financial improvements.

How should a business prepare to engage with Northmore Gordon for an energy technology assessment?

Begin with a project brief that describes the business problem, site location and operating constraints, current energy consumption patterns, any planned changes to production or operations, and the specific decision that needs support—whether audit scope, feasibility study, measurement plan, or funding pathway assessment. Gather available energy history (bills, interval data if available),

production records, equipment details, and documentation of any prior studies or incentive applications. Clearly distinguish measured information from estimates. Identify who owns the energy-saving attributes if a project involves certificates. This preparation enables Northmore Gordon to establish an appropriate starting scope and timeline without waiting for a perfect dataset. The project brief template and energy audit guidance in the knowledge library provide a structured format for organizing this information, supporting an efficient initial assessment and clear scoping of the next step.

What are the key differences between Victorian Energy Upgrades and NSW Energy Savings Scheme pathways?

Victorian Energy Upgrades (VEU) creates Victorian Energy Efficiency Certificates (VEECs) for eligible activities meeting prescribed equipment requirements or project-based methods including measurement and verification or benchmark rating. Eligibility depends on specific activities, premises type, equipment specifications, and scheme conditions—a technically sound upgrade is not automatically eligible. NSW Energy Savings Scheme (ESS) creates Energy Savings Certificates (ESCs) from eligible energy-saving activities using prescribed calculation methods or PIAM&V; (Project Impact Assessment with Measurement and Verification). Both require careful selection of calculation method before building the evidence file; the method determines what baseline data must be collected and how savings are demonstrated. Scheme rules change periodically, affecting eligibility and evidence requirements. Our knowledge library covers both schemes' specifications, activity requirements, and measurement approaches, helping businesses understand which pathway applies to their proposed technology and site, and what evidence must be gathered at each project stage to secure certificate eligibility.

How can a business distinguish between verified energy savings and estimated forecast benefits when evaluating upgrade economics?

An engineering estimate or modelled forecast represents what consumption could be under ideal conditions, typically prepared during design or feasibility phases. A verified energy result comes from actual measurement and comparison under the agreed measurement and verification approach, establishing what changed after implementation. A certificate result is the quantity formally accepted or issued under a particular scheme's application process—a separate outcome from the verified savings. These three outputs serve different purposes and should never be conflated. A business preparing an investment case should present proposals with separately identified costs, estimated benefits, and any conditional funding, then later update the analysis with verified outcomes after implementation. Our measurement and verification services establish verified results through systematic data collection, baseline modelling, and transparent calculation. This rigor protects investment decisions and supports reliable performance reporting to management and stakeholders.