

Energy Audits Are A Critical Step To Cost Savings & Energy Management

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An energy audit provides an end-use energy breakdown for a whole site, underpinning strategic energy and carbon reduction management decisions. It delivers insight into energy improvement opportunities, capital cost estimates, projected annual savings, cost-benefit analyses, greenhouse gas savings, tariff analysis, and other benefits.

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An energy audit provides enormous benefits. If you are determined to maximise energy and carbon performance while minimising operational costs, then an energy audit underpins strategy, tactics, and investment decisions.

Energy waste is invisible. The common expression 'out of sight, out of mind' makes it all too easy for those operating homes, buildings, and industrial facilities to go about business as usual without optimising energy use.

The energy audit

A formal energy audit will provide an end-use energy breakdown for a whole site, which underpins strategic energy and carbon reduction management decisions. The audit provides valuable insight into energy improvement opportunities, capital cost estimates, projected annual savings, cost-benefit analyses, greenhouse gas savings, tariff analysis, and other benefits.

Our specialised team of energy experts and engineers are highly experienced in large-scale commercial and industrial operations and can provide the trained eye necessary to deliver an audit that upholds standards set out in AS/NZS 3598:2014.

Implementing energy efficiency measures directly reduces operating costs and lowers emissions. Yet it takes a trained eye and a thorough inspection to identify waste, inefficiency, and opportunities. This makes energy audits a fundamental part of any effective energy management plan.

Reduce energy costs

We find that businesses that haven't conducted an energy audit in several years are likely spending 10-30% more on energy costs than necessary. This could be from inefficient equipment, poorly sized or specified equipment, poor control strategies, operations and maintenance practices, or a combination of these.

Technology is developing rapidly. Equipment that used to be efficient is now old or outdated, and modern plant control systems can better maintain efficiency at part loads. Plant services are a great place to look for these opportunities. For example, steam, compressed air, and chiller systems are

commonly found to be running at low efficiencies. An energy audit provides performance benchmarking to evaluate their efficiency and determine steps for improvement.

Maintenance practices have a big part to play. For instance, a cooling tower system might have degraded fill, fouling, or poor maintenance of the temperature or pump control systems.

Operational procedures can be a cause of energy waste. For example, a facility with two boilers will operate more efficiently by running one boiler at 100% capacity with the other on standby than by having both boilers running at 50% capacity.

Sometimes relatively simple behavioural adjustments can allow for load shifting that results in significant energy cost reductions. For example, it may be cost-effective to stagger turning on equipment to avoid significant spikes in energy demand. Recognising and determining the impact of such adjustments requires a holistic understanding of the plant's mechanical equipment, operational procedures, and utility rate structure.

The cheapest energy source is a facility's unused energy. Energy audits are a critical step to identifying the flow of energy through a business, highlighting energy-intensive users and areas of waste, providing advice on the best energy tariffs, and recommending strategies to reduce overall costs.

Lower emissions

Maximising energy efficiency is a cornerstone strategy for minimising your carbon footprint. When a facility improves efficiency, it lowers its Scope 1 emissions from onsite fuel combustion and Scope 2 emissions associated with purchased electricity.

Strengthen Energy Management Plan

Addressing energy efficiency is the best starting point for an energy management plan. It promotes measurable onsite improvement and reduces the scale for more costly decarbonisation pathways, such as electrification, fuel switching, or equipment replacement. Because of its direct effect on carbon emissions, energy efficiency measures should always be considered before purchasing carbon offsets. With energy efficiency optimised, a business has less need to purchase carbon offsets to address residual emissions.

Ultimately, executing on energy efficiency recommendations from a formal energy audit demonstrates a strategic and thoughtful approach to energy management and decarbonisation.

Partner with Northmore Gordon to simplify energy management

Northmore Gordon provides a full-service energy management consultancy and supports businesses at all stages of their energy and decarbonisation journey. A partnership with us will help you get there ahead of your competition.

Using this guidance

Check the site's operating conditions, data quality, project stage and current program settings before turning the dated discussion into a scope or investment decision.

Related guidance

Energy audits

Measurement and verification

Contact us

Read the original article for the source publication and its full context.

What is the main benefit of conducting an energy audit, according to Northmore Gordon?

An energy audit provides an end-use energy breakdown for a whole site, underpinning strategic energy and carbon reduction management decisions. It delivers insight into energy improvement opportunities, capital cost estimates, projected annual savings, cost-benefit analyses, greenhouse gas savings, tariff analysis, and other benefits.

How much more might businesses be spending on energy costs if they haven't conducted an energy audit in several years?

We find that businesses that haven't conducted an energy audit in several years are likely spending 10-30% more on energy costs than necessary, due to factors like inefficient or poorly sized equipment, poor control strategies, and operations and maintenance practices.

What standard do Northmore Gordon's energy audits comply with?

Our specialised team of energy experts and engineers deliver audits that uphold the standards set out in AS/NZS 3598:2014.

What plant services are commonly found running at low efficiencies during an energy audit?

Steam, compressed air, and chiller systems are commonly found to be running at low efficiencies, and an energy audit provides performance benchmarking to evaluate their efficiency and determine steps for improvement.

How does an energy audit scope match the business decision being made?

An energy audit is most useful when its scope matches a real decision: finding avoidable waste, ranking investments, or examining a particular system before replacement. The Australian Government distinguishes Type 1 (basic overview for screening where to investigate first), Type 2 (detailed assessment with financial evaluation to prioritize capital investments), and Type 3 (precision subsystem assessment with measurement for equipment replacement decisions like boilers or chillers).

Why should energy efficiency measures be considered before purchasing carbon offsets?

Energy efficiency measures have a direct effect on carbon emissions by reducing Scope 1 emissions from onsite fuel combustion and Scope 2 emissions from purchased electricity. With energy efficiency optimised, a business has less need to purchase carbon offsets to address residual emissions, making efficiency a cornerstone strategy for minimising carbon footprint.

What role can behavioural adjustments and operational procedures play in reducing energy costs?

Relatively simple behavioural adjustments can allow load shifting that results in significant energy cost reductions, such as staggering equipment startup to avoid demand spikes. For example, a facility with two boilers operates more efficiently by running one at 100% capacity with the other on standby, rather than running both at 50% each. Recognising these opportunities requires understanding mechanical equipment, operational procedures, and utility rate structure together.

What should an energy audit's opportunity register include to support decision-making?

For each proposed measure, the opportunity register should identify its boundary, estimated energy effect, assumptions, implementation dependencies, evidence quality and next decision. Keep energy savings, tariff savings, maintenance benefits and certificate revenue separate. Interactions between measures deserve their own treatment: for instance, a smaller heating load after insulation can change the economics of a replacement heating system. This structure ensures opportunities are actionable and properly prioritised.

How does Northmore Gordon help move an energy audit from assessment to action?

After audit completion, our six-stage delivery approach supports moving from assessment through to ongoing performance. The stages include building investment cases, capturing funding value through

certificates or grants, delivering projects with measurement and verification, procuring energy and environmental attributes, and establishing ongoing performance monitoring. Assign an owner to each opportunity, define what must be resolved before approval, and agree how performance will be checked after implementation.

What evidence should be prepared before commissioning an energy audit?

Start with at least one year of available electricity and fuel history, then add interval data, production volumes, operating schedules and equipment information. Flag missing data, major shutdowns and changes in output. Government guidance emphasises energy-use patterns and the relationship between consumption and business activity. A year that included unusual operations may not represent the period the investment will serve. This foundation ensures the audit addresses the decisions that matter to your business.