

Boiler Upgrades, Heat Recovery and Certificate Assessment

Canonical: <https://northmoregordon.com/technologies/boiler-upgrades/>

Details:

Heat duty · Upgrade options · Certificates · Measurement · Business case

A boiler project should begin with the useful heat the site needs, not an assumption that the existing boiler should be replaced like for like. Northmore Gordon assesses steam and hot-water systems, controls, heat recovery, fuel use, operating constraints, electrification options and current certificate pathways.

Define the required heat duty

Record the temperature, pressure, flow, schedule, seasonal profile, production dependency and reliability requirement for each major heat user. Compare that demand with fuel data, boiler loading, cycling, blowdown, stack conditions, distribution losses and maintenance history. A Type 3 energy audit can provide a focused, measurement-based investigation when a major boiler decision is approaching.

Right-sizing matters. An oversized boiler may cycle or operate inefficiently at part load, while an undersized system may constrain production or resilience.

Compare more than replacement

combustion tuning, oxygen trim and control improvements;

blowdown optimisation, insulation and maintenance;

economisers and process or flue-gas heat recovery;

burner replacement or staged boiler plant;

high-efficiency boiler replacement;

heat pumps or other electrification where temperature and electrical constraints permit;

renewable heat or biomass where fuel supply, emissions and operations support it; and

process changes that reduce the required heat duty.

Evaluate options against the same operating requirement, analysis period and energy-price assumptions. If two measures affect the same heat load, model their combined sequence to avoid double-counting.

Check current certificate rules before commitment

In Victoria, eligible heating projects may be assessed under the Victorian Energy Upgrades scheme. In New South Wales, the Energy Savings Scheme rule discontinued listed gas-fired steam boilers, water heaters, hot-water boilers and space heaters from the PIAM&V; and Metered Baseline pathways for implementations from 1 July 2026. This does not determine every heating project in every scheme, but it means old boiler case studies and rebate tables cannot establish current NSW eligibility.

Request the governing activity, rule version, implementation-date test, method, calculation, evidence responsibilities, certificate quantity, price date, fees and customer contribution in writing. Show the

project both with and without unconfirmed certificate support. See the government schemes guide for current pathway context.

Plan measurement before installation

A baseline should represent normal pre-project operation and account for variables such as production, weather, occupancy and operating hours. A practical M&V; plan defines the purpose, equipment and meter boundary, baseline period, instruments, intervals, quality checks, implementation record and reporting method.

Keep the engineering estimate, verified energy result and issued certificate quantity separate. Two fuel bills alone may not isolate the effect of the boiler project.

Build the investment case

| Line | What to include | | --- | --- | | Capital | Equipment, enabling electrical or fuel infrastructure, installation, shutdown and commissioning | | Energy | Fuel and electricity changes, tariff assumptions, operating period and estimate method | | Operations | Maintenance, reliability, water, chemicals, labour and production effects | | Certificates or grants | Current eligibility, quantity, price, fees, timing and approval status | | Emissions | Boundary, factors and whether the result is forecast or verified |

Preserve dated records for feasibility approval, final investment decision, purchase commitment, installation and commissioning. If work has started, use the real chronology to assess whether any pathway remains available.

Related resources include renewable heat , waste heat recovery and the AJ Bush boiler case study .

Contact Northmore Gordon before procurement with the heat duty, equipment details, fuel history, project timing and available measurements.

What should be assessed before replacing a boiler?

Define the useful heat duty first: temperature, pressure, flow, schedule, production dependency and reliability. Then assess current fuel use, boiler loading, cycling, controls, blowdown, stack losses, distribution losses and maintenance. Compare right-sized replacement, controls, heat recovery, electrification and other options against the same service requirement.

Can a new gas boiler still create NSW Energy Savings Certificates?

The NSW Energy Savings Scheme discontinued listed gas-fired steam boilers, gas-fired water heaters, gas-fired hot-water boilers and gas-fired space heaters from the PIAM&V; and Metered Baseline pathways for implementations from 1 July 2026. The exact equipment, method and date must be checked against the current rule; an old case study or rebate table is not proof of present eligibility.

Can Victorian boiler or heating projects create VEECs?

Some projects may be eligible under the Victorian Energy Upgrades scheme, depending on the current activity, premises, equipment, method, implementation date and evidence. Technical merit alone does not create an entitlement. Confirm the governing specification and accredited-provider scope before commitment.

What alternatives should a boiler feasibility study compare?

Options may include tuning and oxygen trim, blowdown control, insulation, economisers, process or flue-gas heat recovery, burner replacement, staged plant, high-efficiency replacement, heat pumps, renewable heat, biomass and changes that reduce the heat duty. Electrical capacity, temperature requirements and operating constraints need to be included.

Why must measurement planning occur before installation?

A credible baseline needs representative pre-project operation and a documented treatment of variables such as production, weather and operating hours. Once the old system is removed, some evidence cannot be recreated. If a scheme requires project-based M&V, its measurement and approval steps may also have to occur before implementation.

How should certificate value appear in a boiler business case?

Show the governing activity, eligibility assumptions, calculated quantity, price date, fees, evidence cost and expected timing separately. Present a base case without unconfirmed proceeds and an incentive scenario. Do not use a historical dollar example as a quote for a new project.

What is the difference between an estimated saving and a verified result?

An engineering estimate predicts performance using stated design and operating assumptions. A verified result compares post-project performance with a documented counterfactual baseline under an agreed M&V approach. A certificate result is the quantity accepted under a scheme process. These are separate outputs.

Can an already committed or installed boiler project still receive certificates?

It depends on the scheme, activity, dates, evidence and prior arrangements. Assemble the real chronology for feasibility approval, final investment decision, purchase, installation and commissioning, then request a timing review. Do not reconstruct dates or assume retrospective eligibility.