

Renewable heat solutions

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Renewable heat planning starts with process temperatures, demand profiles and operating constraints. Northmore Gordon compares electrification and other heat options through feasibility, commercial analysis and measurement planning.

Renewable Heat that delivers cost and carbon reductions

At Northmore Gordon, we help Australian industrial and commercial clients decarbonise their thermal energy use through proven, technically rigorous renewable heat solutions. From advanced heat pump design to hybrid electrification strategies, and deep understanding of biomethane markets, our work turns heat into a lever for cost savings and carbon reduction.

Thermal energy makes up a significant portion of industrial energy use - particularly in manufacturing, food and beverage, and processing sectors. Traditional systems (boilers, steam, gas-fired equipment) are energy-intensive and carbon-heavy.

Electrifying this heat - or integrating renewable thermal systems - offers compelling benefits:

Reduce Scope 1 emissions

Improve energy efficiency

Lower operating costs

Tap into VEEC, LGC, and ACCU certificate revenue

Improve ESG reporting and regulatory compliance (e.g. NGERs, ASRS)

Leverage financial incentives

But renewable heat is not one-size-fits-all. It demands precise engineering, deep understanding of industrial processes, and strategic thinking. That's where we come in.

Our Approach: Engineering-Led, Strategy-Focused

We bring together expertise on technology and commercial models to create optimal solutions for each site

We are independent consultants and accredited certificate providers

We have helped customers achieve over \$220 m funding to improve the ROI

We have senior consultants that have worked in water, steel, food and beverage and other manufacturing organisations

We are constantly monitoring technology and market incentives to find better ways to decarbonise.

If you are looking for new ways to decarbonise we are ready to partner with you

Our renewable heat services include:

For medium to low-temperature process heat, electric heat pumps are an efficient alternative to gas boilers. We design systems that integrate with existing infrastructure while delivering optimal performance and payback.

Thermal load modelling

Integration into production cycles

Hybrid designs with backup systems

Detailed ROI and payback forecasting

High-Efficiency Steam & Boiler Upgrades Where full electrification isn't yet viable, we optimise or replace existing systems for maximum efficiency and lower emissions. - Fuel-switching (e.g. from coal to gas or biofuel) - Condensing boiler upgrades - Heat recovery integration

Electrification Feasibility Studies We assess technical and financial viability for replacing or supplementing fossil-fuel heat with electric or renewable alternatives. - Comparative modelling: gas vs electric vs hybrid - Grid connection and power quality analysis - Capex/opex modelling and downtime mitigation

Certificate & Grant Optimisation Our certificate experts ensure every qualifying activity generates value. - VEECs and ESCs for heat pump and boiler upgrades - LGC creation for biomass or renewable steam - ACCU generation from thermal fuel switching

- **Technical Depth:** Every solution is backed by engineering-grade feasibility, not generic energy reports. - **Australian Regulatory Mastery:** We maximise returns through deep knowledge of VEECs, NGERs, ASRS and more. - **Senior Expert Access:** Your project is led by a partner or senior advisor with decades of relevant experience. - **Tailored Strategy:** No templates. We customise each approach to your site, sector, and goals.

Our renewable heat services are tailored for: - Manufacturing & Processing - Food & Beverage - Agriculture & Cold Storage - Government & Institutions

Each has unique challenges - each benefits from deep technical expertise and financial strategy.

Let's start the conversation. Call or email Craig Morgan or submit your interest here today.

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What renewable heat services does Northmore Gordon offer to industrial and commercial clients?

We help Australian industrial and commercial clients decarbonise thermal energy use through renewable heat solutions including Industrial Heat Pump Design, High-Efficiency Steam & Boiler Upgrades, Electrification Feasibility Studies, and Certificate & Grant Optimisation. We combine engineering assessment with implementation support, funding evaluation, and ongoing performance management across industrial facilities, commercial buildings, and utilities to improve energy performance while protecting operational outcomes.

Why does renewable heat matter for industrial energy use?

Thermal energy makes up a significant portion of industrial energy use, particularly in manufacturing, food and beverage, and processing sectors. Traditional systems like boilers, steam, and gas-fired

equipment are energy-intensive and carbon-heavy. Renewable heat and electrification can reduce Scope 1 emissions, improve energy efficiency, lower operating costs, tap into certificate revenue through VEECs and ESCs, improve ESG reporting and regulatory compliance under schemes like NGER and ASRS, and leverage financial incentives including grants and environmental certificates.

What does a renewable heat feasibility assessment involve?

A renewable heat assessment evaluates the technical and financial viability of reducing gas consumption through renewable heat and electrification options. It requires inputs including temperature requirements, process profiles describing operational procedures, electrical constraints affecting site infrastructure, and fuel use data to establish baseline consumption. The assessment compares complete project options across useful duty, existing performance, heat recovery potential, electrification requirements, reliability, and economics to determine which heating solutions are most viable for the site.

What are the key steps in comparing renewable heat project options?

Our assessment framework examines six components: useful duty (what the process must receive), existing performance (measured versus inferred data), heat recovery (source and destination compatibility), electrification (electrical and integration work needed), reliability (maintenance and backup handling), and economics (options priced against consistent assumptions). This investigation framework avoids technology-only comparisons by including actual operating profiles, installation scope, controls, maintenance, supporting infrastructure, and commissioning. The analysis separates energy, financial, and emissions outcomes, as a fuel reduction does not automatically establish a cost saving.

What makes heat pump technology viable for process heat applications?

Heat pump technology moves thermal energy from a source to a destination, subject to site-specific performance conditions. MainStream Aquaculture provides a published example where heat pumps combined with waste heat recovery were assessed for feasibility. Assessment questions include whether proposed heat sources are available when heat is needed, what redundancy and control strategy will protect operations, whether thermal storage could help while introducing constraints, and how electricity supply changes, demand charges, and maintenance need pricing. These site-specific conditions determine whether heat pumps can deliver required temperatures reliably.

How should measurement and verification be planned for renewable heat projects?

Measurement and verification demonstrates what changed by comparing post-project consumption against baseline under comparable conditions. For renewable heat projects, arrange measurement before the existing system is removed to preserve baseline evidence. Where heat recovery affects both cooling and heating systems, agree in advance how the combined result will be evaluated. Government waste-heat guidance emphasises reducing unnecessary heat generation and losses before investing in recovery equipment. Certificate schemes require different evidence; use the relevant current scheme rules for funding to confirm eligibility before implementation.

What certificates and incentives can renewable heat projects generate?

Renewable heat activities can generate different environmental certificates depending on the technology and jurisdiction. Heat pump and boiler upgrades may create Victorian Energy Efficiency Certificates (VEECs) or NSW Energy Savings Scheme certificates (ESCs). Biomass or renewable steam systems can create Large-scale Generation Certificates (LGCs). Thermal fuel switching may generate Australian Carbon Credit Units (ACCUs). Each instrument has separate eligibility, evidence, and commercial requirements. A proposed technology does not automatically establish eligibility; the activity must be assessed against the applicable scheme and method before detailed calculations.

When is full electrification not viable, what alternatives exist?

Where full electrification is not yet feasible, we optimise or replaces existing systems for maximum efficiency and lower emissions through approaches including fuel-switching (such as coal to gas or biofuel), condensing boiler upgrades that recover latent heat, and heat recovery integration to capture rejected heat. These alternatives reduce Scope 1 emissions and operating costs while preserving operational reliability. Each option should be evaluated through a feasibility assessment considering temperature requirements, available heat sources, electrical constraints, and economic viability before selection.

How does Northmore Gordon integrate renewable heat with funding and certificate strategies?

Our delivery approach connects technical assessment, commercial decisions, and ongoing performance across six stages: Assess (identify opportunities and evidence gaps), Build the Case (determine viability through feasibility studies), Capture Value (identify grants, certificates, and financing), Deliver (implement and verify), Procure (purchase energy and environmental attributes), and Perform (sustain outcomes). We help customers navigate certificate eligibility, funding pathways, and financial incentives. Certificate support includes project registration, evidence gathering, and trading. Measurement and verification establishes credible savings needed to assess funding options accurately.

What information should be prepared before scoping a renewable heat project?

Prepare a heat balance analysis describing temperatures, flow rates, and operating hours required for each process, then identify potential rejected heat including its temperature, flow, and contamination concerns. Document current fuel use, the operating schedule, and electrical constraints that affect feasibility. Gather available energy data, production records, and any existing studies. A short project brief stating the business problem, site location, current stage, equipment details, and decision deadline helps Northmore Gordon scope an appropriate assessment. This preparation prevents unnecessary measurement delays and clarifies whether the project is ready for feasibility study or requires additional investigation first.