



**Becoming an *EnergyMasters* Process Heat Specialist
Applicants Guide**

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Becoming an *EnergyMasters* Process Heat Specialist Applicant's Guide

1. Overview

Applicants for EnergyMasters Process Heat Specialist accreditation are expected to have specific competence and experience in industrial Process Heat System.

The minimum requirements for EnergyMasters Process Heat Specialist include the applicant demonstrating to the Process Heat systems Assessor, appointed by EMANZ, that he/she has general competence in comprehending technical concepts and applying systematic engineering methods to process heat problem solving. The Process Heat Systems Assessor will consider both academic qualifications and experience relating to these technologies. Part of this requirement involves applying their knowledge in the performance of a Type 3: Precision Subsystem ('investment grade' for industrial operations) Process Heat Systems Audit (AS/NZS 3598.2:2014).

An EnergyMasters Process Heat Specialist demonstrates a high degree of competence in this field, and importantly understands that industrial processes are usually comprised of a number of technologies. As such, they understand where their specialist knowledge applies and where it does not.

2. Competence Requirements

Applicants will be required to demonstrate general and specific process heat systems competence, including their ability to:

1. Comprehend and apply knowledge that underpins good practice in the technical aspects of industrial processes and systems;
2. Identify, state and analyse industrial systems problems and risks in accordance with sound scientific and engineering methods;
3. Develop and articulate clear and well-founded solutions to industrial process heat systems problems, by using systematic procedures, sound technical and financial analysis and good judgment; and,
4. Communicate clearly with others in the course of his/her business activities, including the ability to work objectively with large and medium-sized industrial organisations to facilitate positive change (e.g. improved energy efficiency).

The Competency Self Assessment Form must be completed by all applicants.

3. Work Experience

An applicant's practice field of experience is expected to include process heat systems.

Applicants are expected to have specific competence and experience in the review and analysis of the performance of process heat systems relevant to New Zealand industry.

The process heat systems Assessor will require details of an applicant's recent significant practical work experience in the industrial sector with process heat systems and/or comparable technologies and processes.

Applicants should list, in chronological order, details of their project and work history using the Application Form. Details should include:

1. Recent employers and the nature of the type of work undertaken
2. Specific details of work done, including the date, client, and details of each audit or energy management/improvement work done.

4. Academic and Practical Requirements

Given the level of technical competence required for accreditation, applicants are required to have the following combination (and provide details) of **either** A + B **or** A + C + D.

Either:

- A An approved Bachelors Degree or NZQA Level 6 diploma or other equivalent qualification in Engineering or Science from a tertiary education institution which includes at least two courses/papers(0.125 FTE each) of study in thermodynamics, at level 6 or higher, and
- B A minimum of five years experience in fields allied to process heat, such as process engineering system design, system auditing, system troubleshooting and/or system improvement implementation if a level 8 or higher course/paper has not been completed.

Or

- A An approved Bachelors Degree or NZQA Level 6 diploma or other equivalent qualification in Engineering or Science from a tertiary education institution which includes at least two courses/papers(0.125 FTE each) of study in thermodynamics, at level 6 or higher AND
- B Completion of at least one course/paper (0.125 FTE) at level 8 or higher in thermodynamics, or process integration or heat transfer from a tertiary institution, AND
- C A minimum of three years experience in fields allied to process heat, such as process engineering system design, system auditing, system troubleshooting and/or system improvement implementation.

Note: If you believe you are sufficiently qualified in this area through other means, please contact EMANZ.

If you do not have the recommended background above and would like further training, there are a number of courses available within New Zealand to further develop your knowledge. Please contact EMANZ at admin@emanz.org.nz to discuss your training needs.

5. Sample Process Heat Systems Audit Report

Applicants are required to provide a sample of their process heat systems auditing work as evidence of the quality of their auditing, analysis and reporting, to ensure that their knowledge can be appropriately applied.

For EnergyMasters Process Heat Specialist 'full' accreditation, the applicant must provide a Type 3: Precision Subsystem ('investment grade' for industrial operations) Process Heat Systems Audit Report produced by the applicant and in accordance with the Process Heat Systems Audit Standard published by EMANZ.

The Audit Report must relate to an industrial process heat system (steam or hot water) of not less than 1 MW capacity, and have involved in-depth measurement, analysis and reporting, as described in the Process Heat Systems Audit Standard.

For EnergyMasters Process Heat Specialist 'provisional' accreditation, the applicant may submit a Type 2 report that does not meet the above requirements. Provisional accreditation will remain until a Type 3: Precision Subsystem ('investment grade' for industrial operations) Process Heat Systems Audit Report is provided and successfully 'passed' by the assessor within a 5-year period.

Note that all submitted audits are treated as commercial in confidence.

6. Referees for Assessment Purposes

Applicants are required to provide the details of two referees who are sufficiently familiar with the applicant's work to provide comment on the applicant's competence with regard to process heat systems auditing.

Referees must be independent, i.e. not personally related to the applicant and not expected to gain materially if the application is successful. The applicant's employer may be a nominated referee, provided the interest in the outcome is professional and not personal.

Applicants must forward the Referee Form to the two nominated referees, along with a copy of the applicant's Competence Self Assessment Form, for each referee to complete and then return directly to EMANZ.

7. Application Checklist

The following checklist details the forms and evidence required to make a complete application for accreditation as an EnergyMasters Process Heat Specialist.

Application Form	
Competence Self Assessment Form	
Referee Forms (with copy of completed Competence Self Assessment Form) sent to two Referees	
Type 3: Precision Subsystem ('investment grade' for industrial operations) Process Heat Systems Audit Report	
Other information that you may wish to have considered.	
Copy of certificate or academic record/s as appropriate	

8. Reaccreditation 5-yearly

An Accredited EnergyMasters Process Heat Specialist is expected to remain active in the field of process heat systems auditing to retain continuity of his/her accredited status.

Evidence of current Process Heat Systems competence must be provided at the time of reassessment of accreditation.

Accredited EnergyMasters Process Heat Specialists must submit the completed Reaccreditation Forms as part of the 5-yearly reaccreditation assessment.

For reaccreditation, the minimum requirements consist of:

- Evidence of at least 20 hours of continuing professional develop (CPD) in areas relevant to process heat systems auditing and analysis;
- Details of three Type 3/Level 3 process heat system audits completed in the previous 5 years, one of which was completed in the previous 18 months; and
- A full copy of one of those Type 3/Level 3 process heat system audits.

NB: The details of the other two audits are to include the date of the audit; the thermal capacity of the boiler(s) or furnace(s) concerned; and the name and contact details of the client who received the audit report.

With respect to CPD, accredited EnergyMasters Process Heat Specialists must demonstrate the undertaking of activities that contribute to their understanding and maintenance of their general and process heat systems skills. 'Quality of content' rather than 'quantity of hours spent' is the key measure of suitable professional development.

A fee is payable for reaccreditation assessment.

9. Ethical Conduct Requirement

An Accredited EnergyMasters Auditor is expected to conduct his / her energy auditing activities according to ethical standards generally accepted in New Zealand business and in line with the EMANZ Code of Ethics as follows:

- Members shall ensure that their claims for performance of products, provision of services and expertise are accurate, substantive and independently verifiable.
- In carrying out their activities Members shall ensure that commercial practice, standards and public statements reflect and maintain the highest standards of integrity and consideration for their clients and the public welfare.
- Members shall continue the development of their knowledge, skill and expertise throughout their careers and shall actively assist and encourage those under their direction to do likewise.
- Members shall so order their conduct as to uphold at all times the high reputation of the Association.
- Members shall not injure or attempt to injure, whether directly or indirectly, the reputation, prospects or business of another.

Accreditation may be rescinded by EMANZ if, following a fair and impartial hearing of the parties affected, EMANZ considers that the Auditor's behaviour has not met these standards.