IPART Energy Sustainability Schemes

Guide - Water Heater Product Acceptance - HEER – V1.1

Guide

June 2025

ESS »

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Tribunal Members

The Tribunal members are:

Carmel Donnelly PSM, Chair
Dr Darryl Biggar
Jonathan Coppel
Sharon Henrick

Enquiries regarding this document should be directed to a staff member:

ESS Enquiries (02) 9290 8452

The Independent Pricing and Regulatory Tribunal

IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website.

Contents

About this document

This guide provides product applicants with application guidance for acceptance of eligible water heating products under the Energy Security Safeguard schemes (**Safeguard**) in New South Wales.

Overview

The Safeguard provides financial incentives to install, upgrade or replace equipment to use less energy, and reduce electricity use at peak times. Where the activity involves installation of new or replacement water heating products, these must be on the list of products 'accepted' by the Scheme Administrator (Accepted Products List).

Water heaters must be accepted prior to the registration of energy savings certificates.

This document provides information on the requirements and process to get products published on the list.

Purpose

The purpose of this document is to help businesses or individuals planning to supply or install water heating products under the Safeguard. It offers guidance on the product requirements outlined in the *Energy Savings Scheme Rule of 2009* (**ESS Rule**). It also provides instructions to apply for acceptance.

This guide provides instructions on how to apply for acceptance of the following:

- Heat pump water heaters (Activity definitions D17 and D19)
- Electric boosted solar water heaters (Activity definitions D18 and D20)
- Gas or LPG boosted solar water heaters (Activity definition D21)

Different standards and evidence are required depending on the product type.

The guide only provides general information and should not be relied on as legal advice specific to your circumstances.

Is this guide for you?

You should use this guide if you are an:

- **Accredited Certificate Provider (ACP):** to understand product acceptance and ensure your implementations comply with the Safeguard's requirements.

- **Equipment manufacturer and/or distributor:** to supply equipment for use in the Safeguard, you need to understand product acceptance procedures and requirements.

  Note: You must hold a TESSA account to apply for product approval.

  You must be an authorised signatory to sign the declarations. You must provide authority evidence for this, either at initial TESSA account registration, or later when adding users to your account.

If you are an **individual or business interested in activities** under the Safeguard, while not essential, understanding the product acceptance process can provide you with valuable insights into acceptable equipment and contribute to informed decision-making.

How to use this document

Before you apply for acceptance, you should read and understand all the relevant sections of this guide that apply to your water heater type. A good understanding of the application process and our requirements will assist you to lodge a complete application and aid a smoother application process.

- Section 1 – Equipment and performance requirements
- Section 2 – Evidence requirements and supporting documentation
- Section 3 – How to apply for product acceptance

Document Control

Version Number	Change Description	Date Published
V1.0	Initial publication after ending the combined application process with the Essential Services Commission via the VEU Registry. Applications must be submitted directly through TESSA. Information in the guide was adapted from the Commission's *Water Heating and Space Heating and Cooling Product Application Guide* which included NSW requirements. Changes include: • NSW specific requirements for electrical safety • Applying in TESSA • Updated modelling requirements to incorporate new (Type 104) model released in TRNAUS 24.6 version • Use of template declarations for all applications • Requiring a User Manual • Warranty requirement to comply with relevant legislation	23 June 2025
V1.1	Minor changes to authorised signatory requirements for application submissions	27 June 2025

1 Product equipment requirements

This section provides general information on product eligibility that must be provided as part of your application.

Key points

- Your application must meet all product performance, safety and evidence requirements to be listed on the Accepted Products List.
- Detailed equipment requirements are specified in each activity definition of the ESS Rule.

Products must meet the specified requirements in the ESS Rule to be listed on IPART's Accepted Products List and be eligible to create Energy Savings Certificates (**ESCs**).

We assess products to check whether they meet the minimum equipment requirements of the ESS Rule.

All water heater products installed under Activity Definitions D17-D21 must:

- Meet their definition per AS/NZS 4234 for the relevant product category
- Comply with AS/NZS 2712 as certified by an accredited body
- Have an insulated storage volume not exceeding 700 litres, and
- Meet the specific requirements based on the activity definition outlined in Table 1.1 and the ESS Rule.

Table 1.1 Product performance requirements

Product category / Activity Definition	Product criteria
Heat pump water heaters Activity definitions: D17 D19	Be determined in accordance with AS/NZS 4234 and the calculation method in Appendix A must: • achieve ≥60% annual energy savings for products installed in BCA climate zone 2,3,4,5 or 6 when modelled in climate zone HP3-AU, or for products installed in BCA climate zone 7 or 8 when modelled in climate zone HP5-AU.[a] • be modelled using either a small or medium peak hot water load size.[b]

[a] Refer to the Australian Building Codes Board Climate Zone Map to identify the relevant BCA climate zones.
[b] Refer to section 2.5 – Modelling requirements for further information

Product category / Activity Definition	Product criteria
Electric boosted solar water heaters Activity definitions: D18 D20	Be determined in accordance with AS/NZS 4234 and the calculation method in Appendix A must: • achieve ≥60% annual energy savings when modelled in climate zone 3.[a] • be modelled using either a small or medium peak hot water load size.[b]
Gas / LPG boosted solar water heater Activity definition: D21	Be determined in accordance with AS/NZS 4234 and the calculation method in Appendix A must: • achieve ≥60% annual energy savings when modelled in climate zone HP3-AU for products installed in BCA climate zone 2,3,4,5, or 6.[a] • be modelled using either a small or medium peak hot water load size.[b]

You can choose to apply for acceptance for one or both climate zones. In the instance where your product does not achieve ≥60% annual energy savings in a particular climate zone, the product may still be accepted for the other climate zone.

Products are only eligible to create certificates for installations in the climate zone where it was accepted.

Modelling procedures are outlined in Appendix A and discussed further in section 2.5.

2 Evidence requirements

This section provides further details on the evidence requirements for specific activity definitions.

Key points

- Some requirements apply to all water heating products, while each activity definition also has its own requirements to be met.
- Documents submitted must match the product brand and model you apply for and be verifiable.
- Specific evidence is required on safety, product testing, application declarations, user manuals, and energy savings modelling.

Consult the relevant sections of the ESS Rule and this guide when preparing evidence for your application.

The evidence and information submitted in your application must be accurate and verifiable. Clauses 61 and 130 of Schedule 4A to the *Electricity Supply Act 1995* impose a maximum penalty of $11,000 and/or 6 months imprisonment for knowingly providing false or misleading information to the Scheme Administrator in NSW.

2.1 Electrical safety

Under the *Gas and Electricity (Consumer Safety) Act 2017* **(Consumer Safety Act),** some water heaters are identified as declared articles in NSW.[c] Declared articles must be approved by NSW Fair Trading or an approved equivalent, have the appropriate approval mark and follow the relevant safety standard before they can be sold in NSW.[d] You must demonstrate that your product complies with the NSW electrical safety requirements.

Pressure storage water heaters must meet AS/NZS 60335.2.21. Electric heat pumps must meet AS/NZS 60335.2.40.

ACPs and product applicants are responsible for understanding and complying with their obligations under the Consumer Safety Act.

We may remove a product from the Accepted Products List if we determine the product may be unsafe.

Product brands and model numbers entered in TESSA must reconcile precisely with the AS/NZS 2712 certificate and product data plates. If there are differences between documents, you must submit a manufacturers declaration using the template provided (see section 2.3.2 for further details).

[c] Refer: NSW Government Gazette No 347 of 06 September 2024

[d] Refer: www.fairtrading.nsw.gov.au/help-centre/online-tools/approved-electrical-articles-register.

2.2 Test reports

Test reports demonstrate product performance specifications as tested by an authorised laboratory.

Independent test reports help determine if a product meets ESS requirements. You must submit an independent third-party verification of the product performance against established safety and performance standards.

All test reports must be produced by National Association of Testing Authorities (**NATA**) accredited (or equivalent) test laboratories and be less than 10 years old at the time of product application. Australian manufacturers can test their products in their own in-house NATA accredited laboratories.

Tests must be conducted:

- on the products as they are intended to be installed,
- to specifications in the associated standards, and in accordance with the latest updates to those standards, and
- test conditions must be included in the reports provided.

We will accept a representative test report for components if the differences between the tested component and those represented by the report are unlikely to affect the performance of the product(s).

The same principle applies if a prototype product is tested to represent a production unit. If the performance is different between the tested prototype and the production unit, we require test reports for the production unit to confirm the performance of the production unit and this should be further confirmed in the template declaration.

In some instances, we may require test report data directly from the laboratory.

2.3 Declarations

Declarations are required by applicants to confirm that the details provided in your applications are complete and correct. Detailed instructions are included in the templates on our website.

2.3.1 Combined Application and Controller Declaration

This mandatory document is required for all applications. Only a signatory user in TESSA can sign this declaration. An example completed Application and Controller Declaration template is provided in the Appendix C. The declaration has 2 parts to complete and is summarised below.

Application declaration

The application declaration confirms the applicant has read and understood this guidance. It also confirms the information provided is complete, true and not misleading in any way.

The declaration also gives authorisation to IPART to share information with other government agencies and contact them to obtain information on the applicants' products and performance in other schemes.

Controller declaration

Applicants must complete the controller declaration template for each heat pump product model number applied for. The template needs to provide sufficient detail to allow IPART to assess whether the product's operation aligns with the energy modelling and meets the eligibility requirements.

The Controller Declaration (see template) must include a detailed description of the controller operations and variables, list all the pump control set points, information about different modes and operations, including any user adjustable settings that may impact the energy use.

Information must be provided on:

- which mode the product is in by default when installed.
- how and when an electric booster element is used under each mode, if present.
- any seasonal changes to the controller settings and how it is achieved.
- the legionella control method under each mode, including non-modelled modes

Please note that sufficient information must be provided for each model to provide a full understanding of how the product operates.

2.3.2 Combined Manufacturer and Prototype Declaration

This is a combined template for both Manufacturer and Prototype Declaration. You can complete and submit one (or both) declarations as needed. The declaration has 2 parts to complete and is summarised below.

Manufacturer declaration

Manufacturer declarations are required to reconcile product information in some instances. It is required where different brands and/or model numbers are referenced in evidence, the applicant must submit a declaration that clearly reconciles the models applied for.

A manufacturer's declaration will not be accepted for AS/NZS 2712 certification, electrical safety certificates or product data plates.

Supporting documents with unexplained model variations are not accepted.

Manufacturer declarations must be digitally signed by the signatory user in TESSA. Instructions are included in the template.

The applicant must submit a manufacturer's declaration that includes a comparison of product specifications between the tested model and the model applied for in the application. The comparison should cover detailed information about the specifications listed below and any other specifications which might affect the performance of the components referred to in the declaration.

Product specifications for tanks:

- the insulation material and thickness
- the tank dimensions
- the water container material and wall thickness
- the position of fittings (element, thermostat, and openings for water in and out).

Prototype declaration

This form is only required if a prototype was tested. The products tested must have the same design, construction and performance as the final production units of the listed models to be installed under the ESS. This includes specifications of all components of the system, including tanks, heat pumps, solar collectors, etc.

We will use this information to determine whether a representative test report is acceptable. We will accept a product test report if the product specifications remain the same since the test.

2.4 User Manuals

Installation and operation manual(s) must be provided for all product applications. The manual(s) need to be high resolution, digitally searchable documents (not scans or images), cover all brands/models applied for, and be consistent with other documentation. All text and diagrams must be in English.

We assess manuals to ensure they include:

- Sufficient and clear instructions for users to be able to operate products without trouble.
- Descriptions of the products, and their components, specifications and operation.
- Information about controller features and the operating modes. Default factory settings need to be clear and consistent with the controller declaration.
- Information about user adjustable settings, how they can be changed, recommended temperature values/ranges listed for these settings, processes for when/if it goes offline and the impact on user experience.
- A description for legionella control, listed temperatures and recommended actions for users after long shutdown periods.
- Information on warranties that comply with Australian Consumer Law.

2.5 Modelling requirements

Product modelling uses product specifications to simulate performance under standard conditions. It is used to determine whether a product meets ESS requirements and calculates potential energy savings.

2.5.1 Load sizes

The AS/NZS 4234 – Heater water systems – calculation of energy consumption was updated in June 2021. Modelling must be completed under the defined load sizes in accordance with the latest version of AS/NZS 4234.

When submitting applications for use under the ESS, you must ensure products are modelled based on one load size.

2.5.2 Climate zones

A product does not need to meet the ≥60% annual energy savings threshold for both climate zones (HP5 and HP3).

If a product does not meet this requirement in one climate zone, you can apply for acceptance in the other climate zone. However, certificate creation will only be allowed for installations in the accepted climate zone.

You only need to submit modelling outputs for climate zones you are applying for.

2.5.3 Modelling reports

AS/NZS 4234 recommends information to be included in modelling reports. Although it is not a requirement to produce or provide this report, it is strongly encouraged. The modelling report presents information in a more accessible way and simplifies the assessment of your products.

Where applicable, the AS/NZS 4234 report should include a summary outlining the calculation of the frost point penalty parameter FP1 and pump specifications

2.6 Document requirements

The documents identified in Table 2.1 are required for all HEER water heaters applications. Additional documents required for specific product types are detailed in Table 2.2.

Table 2.1 Documentary evidence for all water heater product applications

Document	Evidence requirement
TRNSYS model decks, lists and outputs	TRNSYS files showing all input decks[1], list files generated while modelling and output files showing final modelling results. If appropriate, include a file describing incident angle modifier. An AS/NZS 4234 modelling report is not a required evidence document, however they present modelling data clearly and concisely allowing for a more efficient application process. It is recommended to provide this report if possible.
AS/NZS 2712 certificate	Identifies conformity with AS/NZS 2712. The model number on the certificate must exactly match the product name on the data plate and application.
AS/NZS 4692.1 for heat pumps or AS/NZS 2535.1 for solar collectors (or equivalent) test report	Identifies the thermal performance of all tanks including electric heated tanks in accordance with AS/NZS 4692.1 for heat pumps and AS/NZS 2535.1 for solar collectors. Test report must be digitally signed (verifiable signature) by testing lab.
Declarations	Application and controller declarations are required for all applications. Manufacturer and prototype declarations are required where model numbers are not consistent across application documents or test reports are for a prototype model. See section 2.3 for further details.
User Manual	This document should be a digitally searchable document and include all the information identified in section 2.4. The information must be provided in English so a consumer can understand how the system works and the implications of changing modes/settings. The information must correlate with the information provided in other documents including TRNSYS modelling, Controller Declaration, manufacturers installation instructions.
Schematic of the system and bill of materials	Parts list including insulation or specified piping etc. The schematic diagram must include all relevant control valves and flow meter if appropriate, solar or heat pump flow and return pipes and temperature sensor location/s.
Dimensioned diagram of the tank	Dimensioned inner tank drawing including cold inlet and hot outlet positions, element position (if fitted), flow and return positions for auxiliary heater (if appropriate), solar or heat pump flow and return ports and temperature sensor location/s.
Photograph of relevant data plate(s)	For integrated heat pumps, a photo of the product data plate. For split or separate heat pumps, a photo of the tank data plate and the heat pump unit data plate.
Electrical Safety	Certificate of Approval demonstrating compliance with AS/NZS 60335.2.21:2013 +A1-2 (until 1 December 2026) or AS/NZS 60335.2.21:2023.

Note 1: Template files supplied by IPART upon request. Please email: essproducts@ipart.nsw.gov.au

Table 2.2 Additional required documentary evidence for specific activity definitions

Product category	Document	Document requirement
Heat pump water heater Activity definitions: • D17 • D19	AS/NZS 5125.1 test report	The test report must contain all reporting requirements specified in the standard, including thermal performance of heat pump Coefficient of Performance (**COP**) and power correlations. Test report must be digitally signed (verifiable signature) by testing lab. See Appendix B for additional clarification.
Solar water heaters Activity definitions: • D18 • D20	AS/NZS 2535.1 or equivalent test report	The test report must include performance of solar collector. Test report must be digitally signed (verifiable signature) by testing lab.
	AS/NZS 2712 test report	The test report must include the no load system operation test result for the system or family of systems applied for. Test report must be digitally signed (verifiable signature) by testing lab.
	AS/NZS 4234 modelling report (or other report)	The test report much include pump specifications for measured flow rate and power measured flow rate in standard configuration. For variable flow systems, it must include a description of the flow rate control algorithm.
Gas / LPG boosted solar water heater Activity definition: • D21	AS 4552 or AS/NZS 5263.1.2 test report	The test report must include start up capacity, maintenance rate, burner capacity and efficiency (as appropriate). Test report must be digitally signed (verifiable signature) by testing lab.

2.7 Naming conventions

It is important you apply clear naming conventions when preparing your application. Clear naming conventions facilitate more efficient and timely document assessment.

Table 2.3 provides a list of recommended naming conventions that clearly describe what a document contains.

> The naming conventions in Table 2.3 are not prescriptive and can be varied slightly provided the names facilitate easy identification of each document.
>
> Failure to provide clearly labelled documents may significantly increase the time it takes to process your application.

We recommend the use of the following standard document naming convention:

Brandname_ModelNumber_XYZ

Where XYZ is a suffix from the table below that clearly describes the document.

Table 2.3 Recommended naming conventions for your documents

Document	Suffix (_XYZ)	Document type(s)
TRNSYS model(s)	_[*load size*]_[*climate zone*] i.e.: _Medium_Z3 _Medium_Z5 _Small_Z3 _Small_Z5	.lst .DCK .out .txt
Standard test reports or certifications	_[*Insert standard number*] i.e.: _4234 _2712 _2535 _5125 _4692 _4552	.pdf
Pump specifications	_PumpSpecs	.pdf
Controller specifications	_ControllerSpecs	.pdf
User Manual	_Manual	.pdf
No load system operation test result	_NoLoad	.pdf
Schematic of the system and bill of materials	_Schematic	.pdf
Dimensioned diagram of the tank	_Dimension	.pdf
Photograph of relevant data plate(s) including tanks, heat pumps, boosters etc.	_DataPlate	.pdf
Manufacturer's installation instructions	_InstallationInstructions	.pdf
Electrical Safety	_ElectricalSafety	.pdf

3 Submit your application

Key points

- Ensure you have all required documents and information prior to applying.
- Similar products (e.g. from the same series) can be submitted together.

3.1 How to apply

It is essential you complete these steps for a quick and smooth application process:

1. Read this guide to get familiar with the acceptance process.
2. Understand requirements specific to your calculation method and activity definition.
3. Get your authorised signatory designated in TESSA to sign your declarations. See declaration requirements in section 2.3.
4. Gather all required evidence.
5. Name your documents with our naming conventions (in Table 2.3).
6. Check your evidence matches the model(s) you apply for.

   Note: If evidence doesn't match, it will slow down the acceptance process. This will result in a Request for Information (**RFI**).

7. Submit a case in TESSA, input your product data, and attach all required documents.

   Note: Duplicate model numbers are automatically rejected by TESSA.

Note: for security reasons **TESSA does not accept .zip files**. Individual file uploads are required.

Applications require several attachments to be uploaded with your initial application. TESSA is limited to allow up to **75 attachments** in your initial application. Only submit documents required for your NSW application. In addition, TESSA:

- allows a **maximum of 8 products** per application
- allows files sizes **up to 20MB** per attachment, and
- **may run slow** when processing many attachments.

*We recommend you limit your initial application to **only 4 products**, where each product has unique modelling files.*

3.2 Information requests and application reviews

We will issue a Request for Information (**RFI**) if we identify issues that require clarification, explanation or if information is missing.

We issue RFIs through TESSA. You must respond to RFIs within 90 days. We may reject your application if you do not respond within this timeframe. We may also request information if requirements change (e.g. the ESS or PDRS Rule is amended) while we process your application.

We generally give you up to 2 RFIs to provide the required information. You may withdraw your application at any time. We will refuse your application if you are unable to demonstrate that the product meets requirements.

Our timeline for application reviews can vary. It depends on application volumes, information quality, and RFIs needed.

3.3 Apply for multiple products

We encourage applicants to submit multiple similar products in a series jointly for ease of processing (where possible).

Products can share some or all the same evidence documents in certain circumstances where:

- Physical characteristics, modes and control settings are the same
- Differences in products do not impact performance (e.g. booster element always off, different anode types)

In such cases, you may be eligible for a joint application and where applicable, you can submit the same:

- AS/NZS 5125.1 test reports
- AS/NZS 4692 test reports
- AS/NZS 2712 safety certification (if all models are contained in one certificate)
- electrical safety evidence (if applicable)
- TRNSYS modelling, and associated AS/NZS 4234 report
- schematic and tank diagram
- User manuals (all models must be listed in the document)

If you are considering a joint submission but aren't sure the products in your series would qualify, please contact us directly to discuss your application.

In your application, please identify any differences (even minor) in the models you submit. This will help with efficient and timely processing of your application.

3.4 Duplicate models

You cannot apply for duplicate models in TESSA. The system will automatically reject your application.

We do not process applications for products that are already accepted for the relevant activity definition in the equivalent version of AS 4234. For example, if your product was already accepted under AS/NZS 4234:2021, we will not accept a new application with different values.

However, if your product requires acceptance across different calculation methods, please contact our team to discuss the next steps.

Please note there are different requirements and values to submit for HEER and IHEAB calculation methods. These cannot be submitted jointly.

Appendices

A Annual Energy Calculation Method for Water Heaters

This section provides details on how to carry out product modelling to provide all necessary information about your product.

A.1 TRNSYS

Modelling must be conducted in accordance with AS/NZS 4234:2021 and SA/SNZ MP 104:2021[e] with the following:

1. Use the TRNSYS program or extensions of the software in the TRNSYS modelling package. TRNAUS V24.6 or later must be used for modelling.
2. Templates provided with this version of TRNAUS must be used with minimal changes. Where changes are made to the template decks, a clear description of the reason for the change must be included in the TRNSYS deck.[f]
3. The first two lines of the output file must remain unchanged. If the modeller wishes to report more information, an additional printer unit can be incorporated below the existing units.

It is required to ensure that the product can deliver the selected load above 45˚C, and to determine the annual energy savings in:

- climate zone 3 for solar water heaters
- climate zones HP3-Au and/or HP5-Au for heat pumps.

The heat pump's full operational logic must be modelled, with the TRNSYS deck must be adapted to match the product's control logic. The heat loss values in the model must match the AS/NZS 4692.1 test reports.

Integral heat pump water heaters with wrap-around, micro-channel and submerged condensers must be modelled using type 104 tanks. Types 138 and 238 are no longer acceptable.

Modelling should be carried out using a simulation time step of 0.02 hour or less.

Modelling must employ either the small or medium load size as described in AS/NZS 4234.

The modeller must state in which mode the modelling is carried out and whether that mode is the default mode when installing the hot water heat pump. This mode must correspond with a mode described in the control logic documentation and the user manual.

Weather data to be used in the simulation must be:

[e] SA/SNZ MP 104: 2021 is the Miscellaneous Publication for the Modelling of heated water systems in accordance with AS/NZS 4234, using TRNSYS

[f] Template files supplied by us upon request. Please email: essproducts@ipart.nsw.gov.au.

- climate zone 3 for solar water heaters
- climate zones HP3-Au and/or HP5-Au for heat pumps.

For ~~solar~~ water heaters the calculation of energy consumption must use the collector inclination and orientation set out below.

> Collector inclination = 25°, azimuth = 0° North (as per the 'North Orientation' in AS/NZS 4234).
>
> The alternative 'representative average installation' collector inclination = 20°, azimuth = 45° can also be used.

A.2 Variable thermostats

Products with variable thermostats which facilitate user override are acceptable. The thermostat should be set at the temperature that is stated in the control declaration. Please ensure the modelling:

- is conducted on the systems default setting, unless the system does not reset after boost mode (refer Section A.4)
- accounts for any auxiliary boosting regime
- settings are within the range of settings available for the actual product
- achieves the following related Australian Standards requirements
  - minimum delivery temperature of 45°C is achieved, and
  - products must comply with legionella requirements under AS 3498 for all settings.

Settings must be clear and consistent across the test reports, control declaration and the User Manual.

ⓘ **Note**: If a user manually activates boosting and the system resets to its default boost mode within 24 hours, that manual boost can be ignored in modelling. If it doesn't reset automatically, the boosted mode must be treated as active in modelling.

A.3 Load delivery

The system must report the minimum delivery temperature under the selected load as specified in AS/NZS 4234. The purpose of this requirement is to ensure the consumer has sufficient hot water through periods of low solar gain or low ambient temperatures.

Water heaters must be capable of delivering all hot water above 45°C. Products with large deadbands may be at risk of failing to meet this requirement. If your product has a large deadband that would allow the temperature to fall below 45°C, you must provide information that describes how the product can still meet this requirement.

The modelling procedure allows for the use of auxiliary boosting to meet this requirement.

A.4 User controlled boosting

The boosting regime modelled must be consistent with the way the product will be installed.

The input parameters and control strategies used to calculate the annual energy use for step 2 in the method in Appendix A.1 are subject to modification if the product allows users to manually boost the heating capacity.

User controlled boosting allows a user to manually override the default boost mode to satisfy a short-term high demand for hot water. This feature may only operate once per day.

Where the system:

- automatically resets to the default boosting mode within 24 hours of the user changing it, the boosting can be ignored.
- does *not* automatically reset to the default boosting mode within 24 hours of the user changing it, the boosting mode activated by the manual control must be considered always active.

A.5 Presentation of results

Results from your modelling and the associated test reports must be entered into TESSA accurately. You must enter values for all relevant fields.

The following values must be rounded to 4 decimal places:

- Zone 3 annual supplementary energy used by the equipment (**Bs**)
- Zone 3 annual electrical energy used by the auxiliary equipment (**Be**)
- Zone 5 Bs
- Zone 5 Be

All other energy savings values must be rounded to 2 decimal places.

Total thermal capacity is the sum of the thermal capacity of all heat pumps and booster elements. For example, a system comprised of a 60kW heat pump and a 10kW electric element would have a total thermal capacity of 70kW.

A.6 Refrigerant Global Warming Potentials (GWP)

A list of refrigerants (including alternative refrigerants) and their global warming potential (GWP) values can be found in the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report, 2007 and the Department of Climate Change, Energy, the Environment and Water website.

B AS/NZS 5125 reporting requirements

When testing heat pump water heaters, Appendix F of AS/NZS 5125 specifies the minimum data reporting required in the test report. Test reports must have COP and power graphs that are consistent with the values submitted in the TRNSYS modelling.

Test reports should include the "Start and Finish Point Measured Data" from the test to show the end temperature of the test and prove the heat pump can heat up water temperature appropriately.

Clause F6.2 of AS/NZS 5125 requires graphs of measured values (test) against the values established through regression analysis are included in the report. Measurements should be linear. The regression must be a reasonable representation of actual performance and the reported regression r-squared value. If there are any outliers or significant differences this must be clearly explained in the test report. The graphs must show appropriate behaviour for the products submitted.

Where issues are found we may request further information, get test data directly from the labs, or require products to be re-tested. If issues cannot be resolved, we may refuse your application. Examples are shown below.

Figure 1. Example COP regression graph

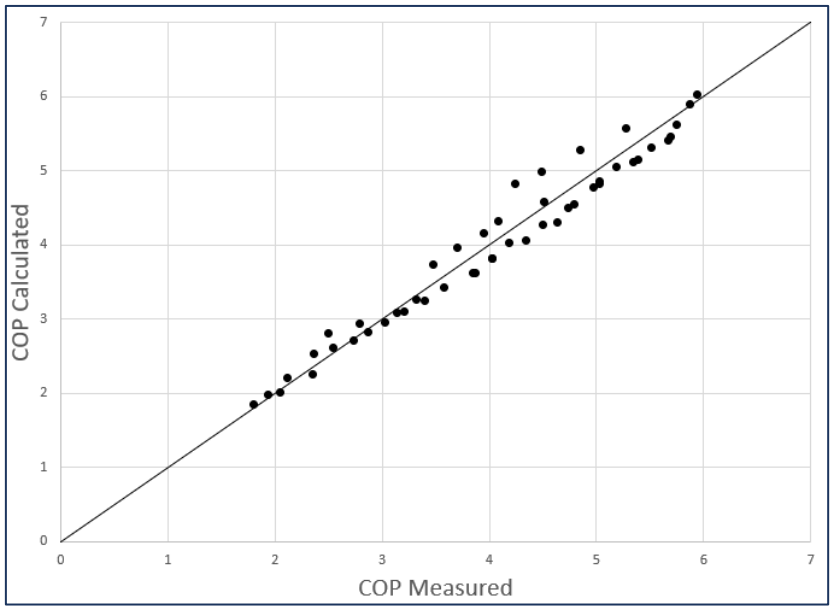
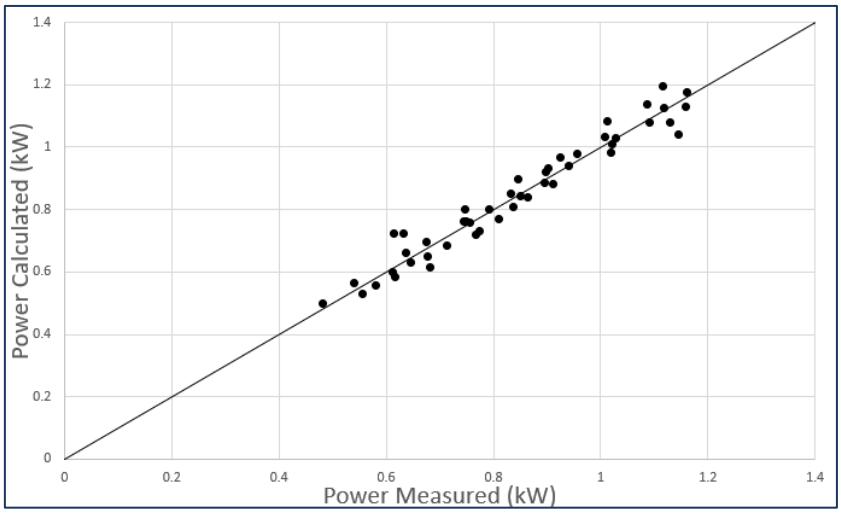


Figure 2. Example Power regression graph



C Controller Declaration template

Below is a completed example of the mandatory declaration for water heaters. See section 2.3.1 for details and explanation of the required information.

The Controller Declaration must be submitted on TESSA with your application.

Instructions to use this template:
To use this template, you will need to:

- submit a user manual that is clear and consistent with installation and settings listed below
- provide details and attach any additional information with further descriptions (where relevant)
- complete the relevant sections of the form
- have the form signed by an authorised signatory for the applicant (as designated in TESSA). If the applicant is not the original equipment manufacturer, the applicant has a legal duty to exercise due diligence and confirm the provided information in this declaration form is correct. The applicant is responsible to abide by the relevant laws and regulations, including and not limited to the NSW Energy Savings Scheme Rule of 2009, in their business practice
- provide proof that the signatory is authorised by the company
- the original equipment manufacturer is the name of the company that manufactures the products
- use the available copies (#1 - #4) of this declaration form if different products in the application have different settings and features.

TESSA Account/Applicant Name:	Water Heaters Pty Ltd
Product Type:	Commercial and industrial heat pump water heater (F16/F17)
Original Equipment Manufacturer:	ABC Heaters Inc
Application for State:	NSW only
Application Details:	
Number of products:	6
Brand(s) & Model Number(s):	*Note: it's recommended to include up to 4 product model numbers per application for products that have unique modelling, and up to 8 product model numbers for products that share modelling.*

#	Brand Name	Model Number
1	Water Heaters	300L-W
2	Water Heaters	500L-W
3	Smart Water Heaters	300L-S
4	Smart Water Heaters	500L-S
5	Global Water Heaters	300L-G
6	Global Water Heaters	500L-G

1. Product operation and control logic (complete applicable fields and provide details where required):

a) Heat pump type is:	Non-Integrated		
b) Heat pump (refrigeration cycle only) ambient temperature operating range: minimum:	-10 °C	to a maximum: 45 °C	
c) Heat pump operation is controlled by:	Hot water setpoint value		
d) Default controller operating mode:	Standard		
e) Default temperature setpoint:	Fixed (specify value in cell)	65 °C	
f) Default temperature setpoint deadband:	Other (provide details below)	°C	
	Varies depending on month: 10 (Jan-Jun), 15 (Jul-Dec)		
g) Describe pump operation and modulation:	Pump maintains constant outlet water temperature from heat pump at 65C		

2. Booster operation and control logic (complete applicable fields and provide details where required):

a) Product is equipped with a booster:	Electric element		
b) Simultaneous operation of product and booster is:	Not allowed		
c) Booster operation is controlled by:	Hot water setpoint value		
	Element operates outside heat pump operating range		
d) Default temperature setpoint:	Fixed (specify value in cell)	75 °C	
e) Default temperature setpoint deadband:	Fixed (specify value in cell)	5 °C	

3) Legionella control:

a) Compliance to AS 3498 is achieved by:	Heating at least 45% of the stored water volu		
b) Legionella control is achieved by heating the stored water using:			
i) Heat pump (refrigeration cycle):	Yes		
ii) Booster:	No		
iii) Other *(provide details)*:			

4) Control flexibility:

a) For sections 1, 2 & 3, users can:			
i) Change operating settings:	Yes		
ii) Settings revert to factory default:	Yes (provide details)	Revert every:	24 hrs

Clauses 61 and 130 of Schedule 4A to the *Electricity Supply Act 1995* imposes a maximum penalty of $11,000 and/or 6 months imprisonment for knowingly providing false or misleading information to the Scheme Administrator in NSW.

On behalf of Water Heaters Pty Ltd, I confirm that the information I have provided is complete and accurate. I am aware that there are penalties for providing false and misleading information in this form.

Signature	Sign digitally
Name	John Smith
Position	R&D Manager
Company	Water Heaters Pty Ltd
Date signed	20/06/2025

X _____