

The Support Scheme for Renewable Heat

Example Design Report

Version 1, May 2022

Introduction

The purpose of this document is to give an applicant for the SSRH Tariff an indication of what is expected in a design report and to provide a structure or layout for them to follow that will include every heading that needs to be addressed and provide a template for multiple applications for applicants that are doing them on behalf of clients.

Example Design Report

1. Details of Design Engineer

Credential of the design engineer

Certificates should be copied and uploaded if this is the first time a designer is being used.
Copy of PI insurance in the name of the company/ individual if self employed.

Appointment of the design engineer.

Company name:

SSRH No.:

I, (name of the applicant), hereby appoint (name of the appointed individual(s)/ company) to prepare my design report required for the SSRH scheme.

I also confirm that have explained all aspects of the design report and their implications.

Signed: (applicant)

Signed: (design engineer)

2. Summary proposal information

The design report shall state:

- The name or business name of the applicant
- The address of the proposed installation
- The SSRH application number (as assigned by the on-line application portal)
- The buildings/process that the biomass installation is designed to heat

Project Description:

20 lines max in three paragraphs one paragraph the operation of the business to be heated, (process, DHW etc) one paragraph on the existing equipment one on the planned "new" installation including make model heat capacity etc. Clearly identify any of the existing heating system components that will be retained either as back-up or ancillary heat source in the final heating proposal.

This must include a description of the points of connectivity between the old and new components to ensure the combined system is fit for purpose and components are compatible.

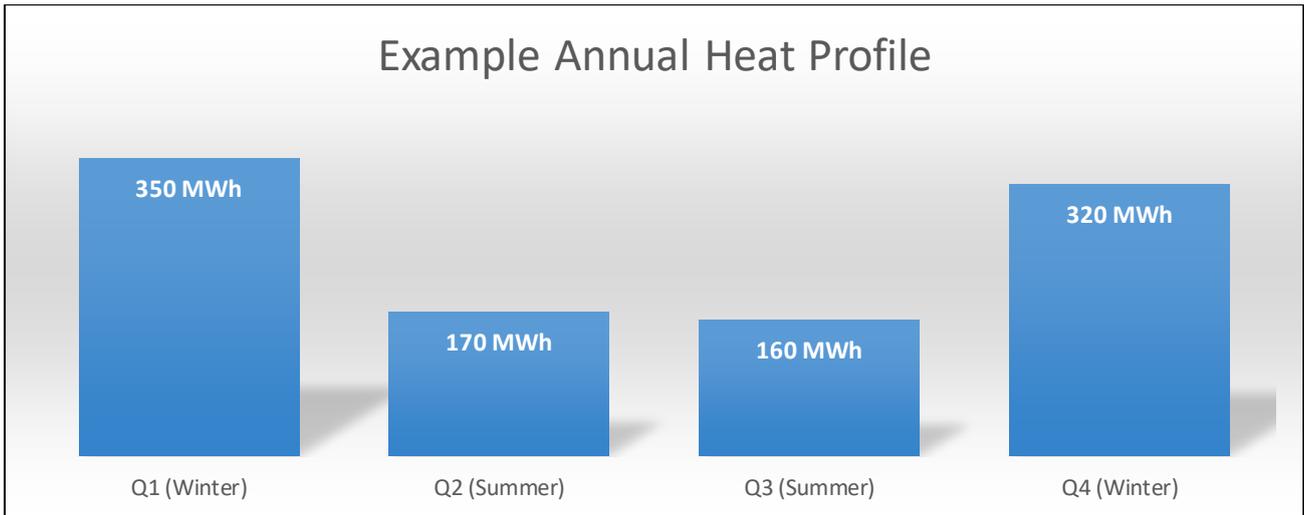
3. Description of Scope of Works

Design Assumptions/Calculations:

Note: Keep It Simple

Annual Heat Profile – Most commonly, using fuel analysis one graph and one table.

Using historic fuel bill analysis we can provide evidence of a total annual fuel consumption in Kerosene of 98,232 Litres, at 10.18 kWh per Litre as per the SEAI domestic fuel comparison Table available online at <https://www.seai.ie/publications/Domestic-Fuel-Cost-Comparison.pdf> we can see that the total annual fuel consumption is 1,000,000 kWhs. Over multiple heating seasons we can see that the consumption occurs mostly in the winter months with minimal heating needs and direct hot water being supplied during the summer period.



| Annual Heat Profile Table | | | |
|---------------------------|-------------|-------------|-------------|
| Q1 (Winter) | Q2 (Summer) | Q3 (Summer) | Q4 (Winter) |
| 350 MWh | 170 MWh | 160 MWh | 320 MWh |

Figure 1: example of annual heat profile

Description of the heating system:

- Existing heat generators-
- Existing Heat distribution pipework-
- Connections between the existing components and the new boiler-
- Design life of the heating system-
- Operating conditions- Max temperature and flow rate which will lead to sizing of the heat meters in section 4 later.



Figure 2: Example 2: Site map

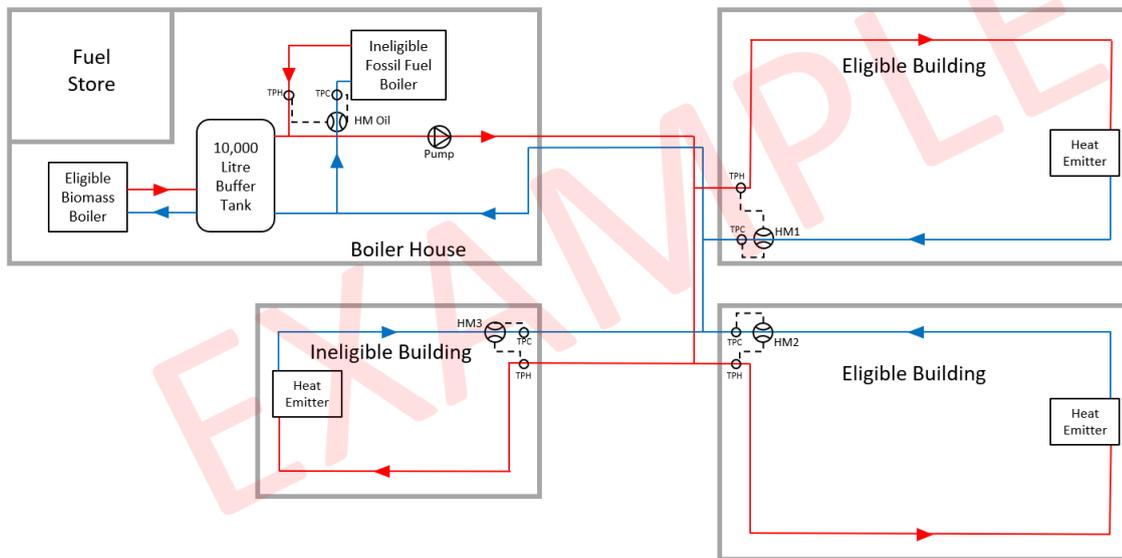


Figure 3: Example of Schematic Drawing

3.2 Flues

Description of the proposed flue(s) and an explanation as to how it was sized, including any relevant calculations (flue height from ground level, distance from the nearest site boundary etc.)

3.3 Fuel Storage and unloading back up

Description of type of fuels, how fuel will be unloaded into the fuel store, the storage conditions (e.g., dry storage or moisture protection requirements), the type and size of the fuel store and the maximum quantity of fuel it will hold, the anticipated frequency of fuel delivery and, Health and Safety requirements for the fuel storage building.

3.4 Estimated Project Costs

These should allow for at a minimum:

- Capital costs
- Design costs
- Consultancy costs associated with Building regulations, health and safety, fire safety certificates, planning permission and environmental permits.

4. Metering:

Advise that meters were chosen using the flow and temperature information above.

Meter Location

Environmental conditions – if your meters are going into an environment of high humidity or exposure to the elements how do you propose to protect them? For example, IP 65 enclosures etc

Integrity of metering (tamperproof tagging) SEAI guidance on tagging is available on the SEAI website.

1) Photos showing unique ID



Figure 4: Above extract from SEAI SSRH tagging guidance document currently available on request

Where multiple meters are included, describe the method to calculate eligible heat including a formula for addition of all eligible heat and subtraction of ineligible heat meters, e.g., $HM1 + HM2 - HM3 = HM_{eligible}$.

5. Compliance with Relevant Building Regulations

The Design Engineer must confirm that they understand the principles of the BCAR (Building Control Amendment Regulations), provide their opinion as to whether BCAR is relevant to the proposed building and proposed heating system including requirements for a commencement notice, the need to appoint an Assigned Certifier and the costs associated with BCAR.

- May require BCAR

If the Design Engineer feels that BCAR may not be relevant, they must undertake to clarify this, prior to construction commencing with the Building Control Section of the local authority.

6. Compliance with Relevant Health and Safety Regulations

The Design Engineer will review the Health and Safety Authority's guidance and recommend whether it will be necessary to appoint a Project Supervisor Design Stage (PSDP). If required, the PSDP, will be appointed by the applicant however this will not be required until the applicant is ready to commence construction.

The Design Report will include Stage 1 Design Risk Assessments, as detailed at

https://www.hsa.ie/eng/Your_Industry/Construction/Construction_Duty_Holders/Designers/, to ensure relevant Health & Safety legislation is incorporated into the design, installation, operation and maintenance of the new installation and into any key systems upon which the new installation depends.

7. Compliance with Relevant Fire Safety Regulations

The Design Report will provide an opinion as to whether the proposed installation will require a fire safety certificate.

8. Compliance with Relevant Planning Regulations

Relevance to each project

Note: if a specific exemption is being utilised by a component of the system for example class 9 exemption for agricultural/rural development then that exemption should be identified and quoted here.

9. Compliance with Relevant Environmental Licencing

Is there an environmental licence currently in place? Yes/no

10. Level of Design Warranty

GSORG "37. Each applicant shall procure that they obtain, as a minimum, 2 years for HP and 5 years for Biomass Boilers, full warranty cover in respect of the heat pump and any ancillary works carried out in accordance with the project. Each applicant should produce documentary evidence of warranty cover having been obtained within 7 working days of receipt of a written request for same being received from SEAI and/or as part of the inspection process."

11. Subsequent clarification of design detail

Nobody is right first time and if you receive feedback requesting that you modify your design report or to add a section addressing some point, you can add the clarification or amendment here and refer to the date of the feedback and each specific request to ensure nothing it missed.

12. Design Declaration

"I, The Design Engineer, acting as nominated Competent Design Engineer, declare that all information submitted in this design report is accurate to the best of my knowledge and I warrant the design and all aspects of the Design of the Eligible Installation which includes the Biomass boiler, Fuel feed mechanism, fuel hopper, all heat meters, distribution and heat emitting equipment and all supporting infrastructure, electrical installation for a period of five years, and I declare that the heating installation design is "fit for purpose" and can deliver the required heat. This will be validated during an on-site inspection following system commissioning.

I confirm that the project design has considered all regulatory requirements including:

- Relevant Building Regulations
- Relevant Planning Permissions (including change of use)
- Relevant Environmental Licencing
- H&S Legislation and
- Manufacturer's Instructions

Documented confirmation of compliance with all regulatory requirements will be provided as part of the Commissioning Report.

Signed_____ Date_____

I, the applicant, confirm that the Design Engineer has explained to me the impact of all the items listed as requirements of the Design Report and the TSORG and their implications for the applicant and for the project as addressed in the Design Report."

Signed_____ Date_____