



An Coimisiún
um Rialáil Fóntas
**Commission for
Regulation of Utilities**

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Certification of Combined Heat and Power Plants for High Efficiency: CRU Audit Procedure

Reference

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Introduction

The Commission for Regulation of Utilities (CRU) is the designated authority responsible for certifying High Efficiency Combined Heat and Power (HE CHP) in Ireland. As part of this role, the CRU conducts audits to ensure that sites meet the required criteria for certification. The auditing regime was established in the CRU's 2012 decision (CER/12/125)¹, which provided a foundation for ensuring compliance and operational transparency among HE CHP operators. That decision outlined key principles and objectives governing the audit process.

This paper provides additional information on the CRU's auditing regime, setting out the CRU's process for identifying sites and carrying out audits.

Selection Procedure

The CRU intends to, at least annually, undertake campaigns of audits of combined heat and power (CHP) sites certified as high efficiency CHP (HE CHP) or for which an application for certification has been made. The CRU has typically availed of expert technical contractors to assist it in assessing if CHP plants meet the high-efficiency criteria defined in legislation. The CRU's contractor will usually undertake and lead the audit campaign. This section describes the sequence of how the CRU and its contractor select sites for audit.

1. Each campaign will be initiated by the CRU. The CRU will consider the following:
 - Approximate number of CHP sites to be audited;
 - Indicative timeframe within which the audits should be completed;
 - Guidance on the CRU's preferred balance of audits between different categories of site (e.g. plant size, fuel type, economic sector, etc); and
 - Any specific sites that the CRU has identified as being a high priority for audit due to concerns or anomalies arising during the certification process or from other intelligence of which the CRU has become aware.
2. Taking due account of the CRU's considerations, its contractor will draw up a draft priority list of sites to be audited. For each site, this list will include the following details:
 - Site name
 - Operator
 - Address, incl. Eircode
 - Economic sector
 - Prime mover

¹ *Certification Process for High Efficiency CHP* - CRU Decision ([CER/12/125](#)) – is available [here](#).

- Primary fuel type
- Rated electrical output, kW
- Rated thermal output, kW
- Priority level (Priority or Reserve)

Additional sites will be identified to form a reserve list. This acts as a backup, and these sites will be selected for audit in the event a priority site cannot be contacted, or if the CRU cannot gain access to a priority site at the selected date and time.

3. The priority and reserve list will be informed based on the following (in no particular order of importance) as identified in CER/12/125²;
 - Large-scale sites certified as HE CHP will be audited from time to time based on random sampling;
 - Audits of selected HE CHP sites may be triggered by anomalies in submitted performance data or other matters brought to the attention of CRU that it is deemed merit the carrying out of an audit; and
 - Newly commissioned HE CHP sites may be specifically selected for audit.
4. In addition, the following may help to inform the selections;
 - How close a site comes to meeting or failing the HE CHP threshold criteria as identified during the assessment process, or in prior assessment processes; and
 - Auditing sites with the most to gain from renewable support mechanisms.
5. The contractor will provide the draft list to the CRU for its approval.

² *Certification Process for High Efficiency CHP* - CRU Decision (CER/12/125) – is available [here](#).

Audit Notifications

6. To initiate each audit campaign, CRU will issue (via e-mail, copied to its contractor), the initial notification letter to the registered contact for each of the sites identified on the agreed priority and reserve list.
7. The contractor shall establish a task tracker (spreadsheet or similar) for each audit campaign, wherein key details and dates will be recorded to support the effective management of the campaign, including monitoring of the status and progress of each audit.
8. No later than 10 working days prior to the intended site visit date, the contractor will send (via e-mail, copied to **hechp@cru.ie**) the main notification letter to the registered contact for each agreed priority site with dates/times as per the campaign schedule.
9. Where there is no response from sites to the main notification within three working days of it being sent, the contractor will follow up via further email and telephone to ascertain the position. The onus remains on the applicant to honour the notified site visit date.
10. Where the site contact provides an acceptably strong written justification as to why neither they nor a suitable deputy can be available for the planned audit date, the contractor will determine whether an alternative date is possible within the constraints of the campaign schedule. Failing that, the contractor will issue a main notification letter to a suitable reserve site. These decisions will be made in discussion with CRU. The CRU reserves the right to carry out a desk-based audit instead of an on-site audit, if deemed appropriate.
11. Copies of all correspondence and any notes of telephone conversations will be saved in the site's folder on the contractor's internal file storage system. All records of telephone conversations and correspondence between the contractor and the applicant will be shared with the CRU upon completion of the audit. These records will accompany the final Audit Report, which will be issued by the contractor to the CRU.

Audit Implementation

- 12.** Prior to any particular audit visit, the auditor³ shall ensure they have access to all relevant information held on the site to be audited. This shall include the application form, site schematics, supplementary information previously submitted, and any communication records (e.g. e-mails, etc.) that could be considered relevant for the audit. The auditor shall familiarise themselves with all the information, noting in particular any issues that may require special attention during the audit.
- 13.** Prior to any particular audit visit, the auditor shall ensure that the plant operator has a copy of the audit report template plus copies of the following documents: CER/12/125, CER/12/184, CER/16/153, CRU/17/302, CRU/17/303 and CRU/20/142, and any other document considered to be relevant by the CRU.
- 14.** On arrival at the site the auditor shall follow normal procedures applicable to visitors to the site, in particular relating to the use of Personal Protective Equipment (PPE) and shall comply with any local requirements such as attendance at safety briefings. The CRU will provide its auditing staff with their own PPE in advance (hard hat, light eye protection, hi-visibility vest/jacket, safety boots, hearing protection and gloves). It is the individual's responsibility to ensure these are kept in good condition.
- 15.** On meeting with the host and any other site staff, the auditor shall explain the objectives of the audit in a standard briefing. During this discussion, the auditor should be prepared to answer general questions on HE CHP as well as specific questions relating to the audit procedure. The auditor shall note for the record the names and job titles of all site personnel encountered as part of the audit process.
- 16.** The auditor shall then work through the audit report template. In summary, the objective should be to establish that there is a sound and properly documented auditable basis for all the data that have been submitted to CRU as part of the process leading to certification as HE CHP. In particular:
 - The boundaries of the Scheme shall be inspected by "walkdown", and the auditor should be satisfied that the physical installation corresponds to those indicated in the information submitted to CRU. Any apparent discrepancies shall be noted and queried with the host. Photographic evidence should be taken where appropriate.
 - The auditor shall inspect all prime movers and other relevant equipment and should verify that these correspond to those indicated in the information submitted to CRU. In particular, equipment types, nameplate ratings and serial numbers shall be recorded. Any apparent discrepancies shall be noted and queried with the host. Photographic evidence should be taken where appropriate.
 - The auditor should be satisfied that all energy flows crossing the CHP plant boundaries and used in the definition of the heat and power efficiencies of the

³ The term "auditor" refers to both the CRU and the contractor working on its behalf.

CHP plant are monitored or otherwise subject to an appropriate measurement procedure. Meter serial numbers and types should be checked against the information reported by the site to CRU. Any apparent discrepancies should be noted and queried with the host. Photographic evidence should be taken where appropriate.

- The auditors should be satisfied that all reported fuel usage figures are supported by meter readings. If, in the case of non-conventional fuels, metering is not in place, then the auditor shall require documentary evidence that a satisfactory sampling and measurement programme is being carried out (in accordance with industry standard procedures), which justifies the fuel usage data employed in the self-assessment. Fuel usage figures shall be confirmed as based on net calorific value.
 - All fuel metering should be supported by documentary evidence that an appropriate calibration schedule is in place and is up to date.
 - All electricity generation, import and export figures should be supported by meter readings.
 - All electricity metering should be supported by documentary evidence that an appropriate calibration schedule is in place and is up to date.
 - All heat generation, export and import figures should be supported by meter readings.
 - All heat metering should be supported by documentary evidence that an appropriate calibration schedule is in place and is up to date.
 - A check should be made that on-site heat loads are as reported and constitute useful heat. Photographic evidence should be taken where appropriate.
- 17.** The auditor shall make a note in the audit report of relevant documents reviewed on site.
- 18.** The auditor shall make a note of all points raised in the discussion by either the auditors or the site representatives and the responses shall also be noted.
- 19.** The auditor's objective should be to leave the site in a position to complete the audit report and arrive at robust conclusions. There will inevitably be situations where site staff are unable to produce information or respond to specific points raised in questions, at the time of the site visit. In such cases, any outstanding issues shall be noted and a timescale for the provision of any missing information shall be agreed.

Preparation of Audit Report

20. The auditor shall within 10 working days complete the first draft of the Audit Report using the Audit Report Template. The Audit Report shall be given a unique file name that identifies the site and file and saved in the site folder in the contractor's HE CHP filing system.
21. The Audit Report first draft ("DRAFT Issue 1") shall be reviewed and signed by a second technical checker or auditor to ensure the report's validity and quality, and that the Observations and Findings are appropriate.
22. The Observations and Findings table from the Audit Summary section of the Audit Report shall be copied into the Audit Outcome Notification template, and the remaining fields completed as appropriate. Normally⁴, a period of two weeks from the date of issue of the Outcome Notification shall be stipulated for the completion of actions requested of the site.
23. The Audit Outcome Notification shall be sent by e-mail from the contractor to the site registered contact and copied to **hechp@cru.ie**.
24. Details of the Audit Outcome shall be recorded in the audit campaign log for the purpose of monitoring site responses.

⁴ Where the resolution to a finding requires an extended period of time – for example the installation/replacement of a meter – it is reasonable to close the audit on the basis that evidence of the completed action is provided with a site's next HE CHP application. This basis should be appended to the submission assessment as a proposed certification condition.

Site Audit Follow-Up

25. The auditor shall review the responses received for each audited site against each issue raised during the audit, referring back to the Audit Outcome Letter issued to the site contact following the audit visit. The auditor shall use best professional skill and judgement to form a view on whether the responses adequately address the issues raised. The auditor may, at their discretion, discuss the responses with the contractor's Project Manager in reaching this view. If considered necessary, the Project Manager will escalate any issues to CRU for an opinion.
26. If following the review set out in the previous paragraph the conclusion is that the issues have been addressed adequately, the auditor shall record this in the audit campaign log.
27. The contractor shall email the site registered contact, copied to **hechp@cru.ie** when all findings are satisfactorily completed, and the audit is considered closed.
28. If any aspects of the responses from the site are unsatisfactory, the auditor shall contact the site by e-mail setting out what further action is required of the site and by when. When a response is received it shall be treated according to the process set out above for reviewing the initial responses.
29. In the event that responses to the Audit Outcome Letter or subsequent communications are not received by the stipulated date(s), then the Auditor shall, within one week of the latest of the due dates set for the responses, issue a formal written reminder by e-mail to the site that information required to close out the audit remains outstanding and shall include a date by which a response is requested.
30. If the issue of the formal reminder fails to elicit a satisfactory response from the site within a further five working days, the Auditor shall draw the matter to the attention of the operators Project Manager who shall decide on the most appropriate course of action to be taken on a case-by-case basis, including escalation to CRU. The Auditor shall be responsible for continuing to monitor the progress of the audit until such time as the audit can be closed.
31. Failure to address or comply with the audit findings will mean that the CRU will not proceed with the assessment any further. As a result, the operator will not be assessed and therefore will not achieve certification as HE CHP. Consequently, the site will not qualify for the renewable energy supports which certification unlocks. This decision will be formally communicated to the operator in writing, with a clear outline of the consequences and detailing any further steps necessary to resolve the issue.

Completion of Audit Report

- 32.** Upon closure of all audit findings, the “DRAFT Issue 1” report shall be updated to include a summary table that records the responses received against each finding. Additional evidence provided can be attached as an appendix to the report.
- 33.** Including any changes necessary, the final Audit Report (“Issue 1”) shall be given a unique file name that identifies the site and file and saved in the site folder in the contractor’s HE CHP filing system.
- 34.** The final Issue 1 report should also be shared with CRU.