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California Energy Commission **STAFF REPORT**

Home Energy Rating System Provider Application and Recertification Process

Staff Recommendations Regarding Application Requirements

California Energy Commission

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ABSTRACT

This document is intended to assist organizations that want to become certified or recertified by the California Energy Commission (CEC) to provide Home Energy Rating System services and operate a residential data registry for documents demonstrating compliance with the Title 24 Building Energy Efficiency Standards. It describes the mandatory requirements for new applications and recertifications to existing, approved applications. This document provides a checklist for applicants to use when developing applications and describes the process and criteria that CEC staff will use in reviewing each application. Staff's review and recommendations will be considered by the CEC commissioners or executive director to approve or deny each application.

Keywords: Home Energy Rating System Provider, HERS, HERS provider, registry, data registry, residential data registry

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EXECUTIVE SUMMARY

The California Energy Commission (CEC) approves Home Energy Rating System (HERS) providers to offer home energy rating services and operate residential data registries. Home energy rating services include training, testing, and certification of raters (raters perform field verification and diagnostic testing, as well as whole-house home energy ratings). Home energy rating services also include HERS rating software, quality assurance programs, and data collection and maintenance of rated homes or field verification and diagnostic tests for residential construction projects. A residential data registry authenticates, verifies, and records residential building project compliance documents. Before offering home energy rating services or operating as a data registry, a Home Energy Rating System provider must apply to the CEC for approval.

The application requirements are specified in Title 20, Chapter 4, Article 8, Sections 1670 *et seq.*, of the HERS Technical Manual, the Building Energy Efficiency Standards, and the Reference Appendices. To become a HERS provider, two applications must be submitted together: a Title 20 application for approval as a HERS provider (including HERS rating software) and a Title 24 application for approval of a residential data registry. CEC staff recommends (but does not require) that each HERS provider application and residential data registry application organize required information and materials in the following sections:

- An introduction
- A complete copy of all training materials
- A complete copy of all rating materials
- Detailed explanations of quality assurance procedures
- Detailed explanations of the rating system and functionality of the data registry
- Complete copies of the raters and building performance contractor registry
- Rater and building performance contractor agreements
- Evidence of compliance with conflict-of-interest requirements.

This document also describes the review process and evaluation criteria that CEC staff will use to determine if the proposed home energy rating services, HERS rating software, and data registry meet the regulatory requirements for approval. Staff will base its recommendation on this review, and the CEC Commissioners will make the final decision to approve or deny a provider's application.

Applicants should note that, if they believe any portion of their application packets contains confidential information, they must submit their HERS provider and data registry applications with an application for confidential designation to the CEC Dockets Unit (email for the CEC Docket Unit: Docket@energy.ca.gov) to maintain confidentiality of the information.

CHAPTER 1: Introduction

Overview of the Application Process

The California Energy Commission (CEC) adopted a statewide California Home Energy Rating System (HERS) program for residential dwellings in 1999. This program certifies HERS providers to train, test, certify, and oversee HERS raters. Additional HERS provider responsibilities include implementation of a quality assurance program and collection and maintenance of data associated with the program implementation. HERS providers are also typically residential data registry providers that register compliance documents required by the Building Energy Efficiency Standards (Energy Code). To be a residential data registry, an entity must also be a certified HERS provider.

HERS raters are trained, tested, and certified to conduct California Whole-House Home Energy Ratings, California Home Energy Audits, or field verification and diagnostic testing (FV&DT) services for demonstrating compliance with the Energy Code. HERS raters must use a CEC-approved residential data registry for FV&DT compliance document validation, authentication and verification, and CEC-approved HERS rating software for a whole-house rating or audit.

Any organization desiring certification as a HERS provider (including approval of HERS rating software) and residential data registry must submit two applications to the CEC simultaneously: a HERS provider application that satisfies the requirements of Title 20, Chapter 4, Article 8, Sections 1670 *et seq.*³ and a residential data registry application that satisfies the requirements of Title 24, Part 1, Section 10-109, and Reference Joint Appendix JA7. CEC staff is tasked with reviewing both applications in parallel and confirming they meet all regulatory requirements for compliance with the HERS regulations and the Energy Code.

The timeline for the CEC's evaluation of provider applications includes process milestones and time limits (see Table 2) for staff to review and respond to an application. The milestones include:

- The executive director's finding that the application is complete and that responses to requests for further information and clarifications are satisfactory.
- A public comment period and optional public workshop.

¹ Title 20, Sections 1670 et seq.

² Title 24, Part 1, Section 10-109 and Reference Joint Appendix JA7.

This guidance document assumes the HERS Rating Software is included with the HERS provider application. See Title 20, Section 1674(d).

- Staff finding of compliance with applicable Title 20 and Title 24 requirements and recommendations regarding application approval (positive or negative).
- Consideration by the CEC at a regularly scheduled business meeting.

When the Energy Code or the HERS regulations are significantly changed or updated, existing HERS providers must submit new applications to the CEC for review and approval – this is referred to as recertification. Staff's recommendation for recertification of current HERS providers will be reviewed by the CEC's executive director, who will determine if the changes as compared to the original application are substantive. If the changes are determined to be nonsubstantive, the executive director may approve the changes and waive the requirements for recertification by the full commission.

Intended Audience

This document is intended for any organization seeking approval as a HERS provider and residential data registry. It describes the application requirements, as well as CEC staff recommendations, evaluation criteria, the review process, and estimated review timelines (see Table 2).

This document does not provide comprehensive guidance for amendments to approved applications. This document assumes that the application will follow the full application review.

What Is a HERS Provider?

A HERS provider is an organization that administers home energy rating services in compliance with Title 20, Chapter 4, Article 8, Sections 1670 *et seq.* of the California Code of Regulations (CCR) (HERS regulations).⁴

What Is a Residential Data Registry?

A residential data registry is a web-based service with a user interface and database maintained by a HERS provider that complies with the applicable requirements in CCR, Title 24, Part 1 and Reference Joint Appendix JA7, with guidance from the Data Registry Requirements Manual (DRRM). A residential data registry is used for registering residential and a limited number of nonresidential compliance documents used for demonstrating compliance with Title 24, Part 6, of the Energy Code.

What Is HERS Rating Software?

HERS rating software is developed by a HERS provider and must be approved by the CEC. It is used to calculate the California HERS Index, generate recommendations on how to improve the energy performance of the rated home, and analyze customers' utility bills.

⁴ Reference Joint Appendix JA7.2.

An application for HERS rating software may be submitted with an application to become a HERS provider or as an amendment to an existing certification. However, approval of HERS rating software is subject to an independent timeline as described in Title 20, Section 1674(d). Before HERS rating software can be approved as part of an application, it must be approved as compliance software for the Energy Code in accordance with the requirements of the Alternative Calculation Method (ACM) Manual.

CHAPTER 2:

Requirements and Recommendations

Requirements for Provider Applications

To offer services as a HERS provider and maintain a residential data registry, organizations must submit two applications simultaneously to the CEC for approval. The HERS provider application must contain all the required information as outlined in Title 20, Sections 1670, *et seq.* The residential data registry application must contain all the information as outlined in Title 24, Part 1, Section 10-109, and the Reference Appendices adopted as a part of the Energy Code.

The HERS provider requirements are specified in Title 20, and the residential data registry requirements are specified in Title 24. Because of this, any organization desiring both to become a HERS provider and maintain a residential data registry must submit two applications simultaneously to the CEC. The HERS provider application must contain all the information required by Title 20, Section 1674(a), and should also include the HERS rating software materials. Only HERS providers can be residential data registries. The residential data registry application (see Title 24, Part 1, Section 10-109[b]) must contain all the information required to be approved as a residential data registry. The HERS provider and residential data registry application packages will be reviewed in parallel by CEC staff, and both applications must be approved at a business meeting for an applicant to become a HERS provider and residential data registry.

Recommendations for the Provider Application Format

The following describe and provide further guidance on the minimum content required for the HERS provider and residential data registry applications:

- The HERS regulations
- The HERS Technical Manual
- Data Registry Requirements (JA7)
- Residential HERS Verification, Testing, and Documentation Procedures (RA2)
- Residential Field Verification and Diagnostic Test Protocols (RA3)
- Nonresidential HERS Verification, Testing, and Documentation Procedures (NA1)
- Nonresidential Field Verification and Diagnostic Test Procedures (NA2)⁵

HERS Provider Application Package Recommendations

⁵ JA7, RA2, RA3, NA1, and NA2 are sections within the References Appendices.

To assist applicants and make the CEC's review more straightforward, staff recommends that the HERS provider application use the following format:

- 1. An introduction that includes the following:
 - a. A statement that ratings are accurate, consistent, and uniform; utility bill estimates are reasonable; and recommendations on cost-effective energy efficiency improvement measures are reliable. (Title 20 Section 1674[a][8])
 - b. A statement that the applicant understands and will not knowingly fail to comply with the requirements of the HERS regulations. (Title 20 Section 1674[a][9])
 - c. A statement under penalty of perjury that all statements in the application are true, provided in the form specified by Section 2015.5 of the Code of Civil Procedure. (Title 20 Section 1674[a][10])

2. Applicant identification:

- a. The applicant must list its name, address, telephone number, its principal place of business, and where and upon whom service of legal process can be made. (Title 20, Section 1674[a][4])
- b. If the applicant is a corporation, a copy of the articles of incorporation and current bylaws. (Title 20, Section 1674[a][5])
- c. If the applicant is a partnership, list the names, addresses, telephone numbers, partnership status of all partners, and a copy of current partnership agreement. (Title 20 Section 1674[a][6])
- d. The applicant must list names, addresses, telephone numbers, and business relationships of all the applicants' owners, parents, subsidiaries, and affiliates. (Title 20, Section 1674[a][7])
- 3. A complete copy of all rating procedures, manuals, handbooks, rating system descriptions, and training materials (Title 20, Section 1674[a][1]):
 - a. Whole-house rating procedures including the whole-house procedures as specified in the HERS Technical Manual.
 - b. FV&DT procedures.
 - c. Manuals, handbooks, quick-reference sheets, video, and all other educational resources or training materials.
 - d. A list of exams including the content, duration of each exam, platform, and methods of proctoring.
 - e. A description, location, and pictures of the field house used for training and exams.
 - f. Rating system descriptions including how the system meets the requirements in the HERS Technical Manual and the Reference Appendices.

- 4. A detailed explanation of how the applicants rating system meets each requirement of Section 1672 of the HERS Regulations (Title 20 Section 1674[a][2]) including, but not limited to, the following:
 - a. California Whole-House Home Energy Rating or a California Home Energy Audit.
 - b. Data Collection.
 - c. Data Analysis Requirements.
 - d. Energy Uses Rated.
 - e. Onsite Renewable Generation.
 - f. Rating Scale.
 - g. Method of calculating TDV energy.
 - h. Utility Bill Analysis.
 - i. Recommendations for Energy Efficiency Improvements.
 - i. Greenhouse Gas Emissions.
 - k. HERS Report.
 - I. Field Verification and Diagnostic Testing.
 - m. Provider and Rater Conduct and Responsibility policy.
- 5. A detailed explanation of how the applicant meets each requirement of Section 1673 (Title 20 Section 1674[a][3]) including, but not limited to, the following:
 - a. Training and Certification Procedures for Raters.
 - b. Rater agreements.
 - c. Building Performance Contractor Agreements.
 - d. Rater and Building Performance Contractor Registry.
 - e. Data Maintenance.
 - f. Field Verification and Diagnostic Testing Evaluation.
 - g. Data Submittal.
 - h. Training Materials Retention.
 - i. Quality Assurance.
 - j. Conflict of interest.
 - k. Improvement measures cost database.

Residential Data Registry Application Package Recommendations

To assist applicants and make the CEC's review more straightforward, staff recommends that the residential data registry application package use the following format:

- 1. An introduction including a statement that the residential data registry conforms to the requirements specified in Reference Joint Appendix JA7 (Title 24 Section 10-109[i]1) including, but not limited to, the following:
 - a. Capability to produce and manage registered documents.
 - b. Electronic signature capability and manage authorization of users.
 - c. Document data validation.
 - d. Signer review and signature actions.
 - e. Digital signature and digital certificate actions.
 - f. Capability to transmit secured documents and data to the CEC Compliance Document Repository.
 - g. Document retention capability.
 - h. Capability to receive and process electronic data using best practices for secure data exchange, using data sources and procedures approved by the CEC for registering compliance documents.
 - i. Capability for data exchange with the compliance report generation services made available by the CEC to generate formatted electronic documents.
- 2. A detailed description of the functional or analytical capabilities of the compliance software, alternative component package, calculation method, exceptional method, data registry or related data input software, and alternative field verification protocol. (Title 24 Section 10-109[b]2A)
- 3. A demonstration that the criteria in Section 10-109 are met. (Title 24 Section 10-109[b]2B)

CHAPTER 3: CEC Evaluation Criteria and Applicant Resources

CEC's Evaluation

CEC staff will evaluate applications submitted using the evaluation criteria included in the HERS Provider and Residential Data Registry Checklist for Applicants (Appendix A), which provides a comprehensive list of requirements specified by Title 20 and Title 24. Staff's evaluation criteria are guided by the HERS regulations (Title 20, Sections 1670-1675), the HERS Technical Manual, the Energy Code, and the Reference Appendices. Applications must contain sufficient detail and evidence to demonstrate compliance with all code requirements.

To assist applicants, this checklist also includes optional recommendations, where appropriate, on how to comply with regulatory requirements. While applicants are not required to follow these recommendations, staff hopes that they will help to improve and expedite the application process.

If any portion of a HERS provider application contains confidential information, the applicant must submit the HERS provider application with an <u>application for confidential designation</u> to the CEC Dockets Unit (email for the CEC Docket Unit: <u>Docket@energy.ca.gov</u>) in order to maintain confidentiality of the information.

Residential Data Registry Evaluation

During the application evaluation process, applicants should plan to demonstrate compliance with the residential data registry requirements specified in Reference Joint Appendix JA7.⁶ To accomplish this, the application should describe the process and criteria used for registry self-testing and the applicant should submit evidence of successful self-testing of their data registry. After an organization submits a residential data registry application to the CEC, the applicant will be granted access to a test instance of the CEC's Report Generator (RG) web service to perform the necessary self-testing.⁷ The RG receives standardized document data exchange files from CEC-approved software applications and data registries and produces the document registration package required to complete the registration of compliance documents in data registries. Staff recommends but does not require that the following be submitted as evidence of a successful self-test:

⁶ Title 24, Section 10-109(b)2B and Section 10-109(i)1

A prospective applicant may email the CEC at Title24@energy.ca.gov and request access to the test instance of the report generator prior to submission of a residential data registry application.

- Model residential construction (including newly constructed buildings, additions and alterations) projects using an approved compliance software⁸ and simulate completion of each project. Submit electronic copies of all the completed registered compliance documents.⁹ At least one copy of each compliance document that can be utilized for the performance compliance path should be submitted.¹⁰
- Create eight single family residential newly constructed building projects in a subdivision and model them using an approved compliance software. Use a multiorientation input file for each home. Simulate completion of all homes using a valid sampling method and submit electronic copies of all the completed registered compliance documents. Submit an electronic copy of the project status report for each home.
- Create a newly constructed multifamily building project with at least eight dwelling units. Model the project using an approved compliance software and simulate completion of the project. Submit electronic copies of all completed registered compliance documents
- Create prescriptive residential newly constructed building projects and simulate completion of each project. Submit electronic copies of all completed registered compliance documents. At least one copy of each compliance document that is unique to the prescriptive compliance path should be submitted. Submit an electronic copy of the project status report for each project.
- Create prescriptive addition projects and simulate completion of each project. Submit
 electronic copies of all completed registered compliance documents. At least one copy
 of each compliance document that is unique to the additions compliance path should be
 submitted. Submit an electronic copy of the project status report for each project.
- Create prescriptive alteration projects and simulate completion of each project. Submit electronic copies of all completed registered compliance documents. At least one copy of each compliance document that is unique to the alterations compliance path should be submitted. Submit an electronic copy of the project status report for each project.
- Model nonresidential construction projects (including newly constructed buildings, additions and alterations) and simulate completion of each project. Submit electronic copies of all the completed registered compliance documents. At least one copy of each compliance document that can be utilized for nonresidential FV&DT should be submitted. Submit an electronic copy of the project status report for each project.

⁸ If an approved compliance software is not yet available, applicants will receive instructions on which beta version of the CEC compliance software to use and how to access it.

⁹ A registered compliance document is a compliance document that has been submitted to the applicant's data registry for retention, has been verified as complete by the data registry, and has completed the registration process such that that the document displays all applicable electronic signatures as well as the applicant's digital signature appearance and the document's unique registration number.

¹⁰ Reference Joint Appendix JA7.8.2.2

The intent of the self-testing process described above is to test all the compliance documents required by the Energy Code and submit at least one copy of each compliance document to the CEC for evaluation. ¹¹ The performance approach is one way to test a large number of compliance documents and should be utilized whenever possible. The prescriptive newly constructed buildings, additions, alterations, and nonresidential test projects described above are intended to demonstrate proper implementation of compliance documents that are unique to those types of projects.

Once registry self-testing is completed, staff will perform acceptance testing of the data registry to make a final determination if the registry complies with all regulations and is ready for approval. Acceptance testing will include simulation of normal registry operation, such as creating new projects, entering installation data, entering FV&DT test results, and downloading completed compliance documentation.

If any portion of a data registry application contains confidential information, the data registry applicant must submit an application for a confidential designation separately to the CEC Dockets Unit (email for the CEC Docket Unit: Docket@energy.ca.gov) in order to maintain confidentiality of the information.

¹¹ Not all Energy Code compliance documents need to be tested. Testing of a compliance document is only needed for documents that must be registered by a residential data registry (see Title 24, Part 1 Section 10-109[i]1A).

¹² Reference Joint Appendix JA7.8

CHAPTER 4: Review and Approval Process

As previously stated, the HERS provider and residential data registry applications must be submitted simultaneously and must go through a parallel review process at the CEC; one process is required by the HERS regulations (Title 20, Section 1674[d]) and the other by the Energy Code (Title 24, Part 1, Section 10-110). While the review processes for each application are very similar, they are not exactly the same. CEC staff will utilize a parallel review process that complies with both Title 20 and Title 24 application review requirements so that both applications can be reviewed in one process.

There are also separate triggers for a full review process for new HERS applications and amendments to a HERS application between the Energy Code and the HERS regulations. When the CEC staff receives an amendment application to a previously approved HERS provider application, staff is required to implement the review processes of the Energy Code or HERS regulations (or both) as dictated by the scope of the amendment application.

Full Application Review Process

Full CEC approval is required for any new HERS provider and residential data registry applications.¹³ The CEC shall approve certification of the HERS provider, its rating system, and residential data registry if it confirms the findings of the executive director. The CEC's executive director must find that applicant meets all the requirements of Title 20 Sections 1672 and 1673 and Title 24, Part 1, Section 10-109.

The full application review process differs between the Energy Code and the HERS regulations as shown in Table 1.

For the HERS provider application, full approval is the process defined by Title 20 Section 1674. For the residential data registry, the full approval process is defined by Title 24, Part 1, Section 10-110 and JA7.8.

Table 1: Full Application Review Process

HERS Regulations (Title 20, Section 1674)	Energy Code (JA7.8.3.1)
1. A new HERS provider that has not been previously approved by the CEC.	A new registry provider that has not been previously approved by the CEC.
2. When any changes to the application are made, the CEC may require full	For example, a new HERS provider would need full approval.
approval of the entire application.	2. When major changes are made to a CEC approved data registry that necessitate testing more than 30 percent of the compliance documents.
	3. When the Energy Code is updated.

Source: CEC Staff

Full application reviews will follow the review process outlined in Figure 1 below.

Figure 1: Combined (Energy Code and HERS Regulations) **Full Application Review Process** Optional pre-application meeting with applicant Application submitted Determine **Completeness Status** Deficiency Letter

No Yes Application Complete? Comment Period Request for information (if needed) Workshop (optional) Final Staff Evaluation Staff Recommendation Executive No Office Concurrance? Copy of staff Yes recommendation to applicant **Business Meeting** Final Decision

Source: CEC Staff

Table 2 describes the governing regulations and staff actions at each of the full application review process milestones.

Table 2: Full Application Review Process Steps

Table 2: Full Application Review Process Steps		
Milestones	Regulatory Time Limit Title 20, Section 1674(c) Title 24, Part 1, Section 10-110	CEC Staff Actions
Submission of Applications	This is the start of the regulatory time limits.	Begin review process relying on the checklist provided by the applicant.
Determine Completeness Status	1674(c)(1) – no time limit 10-110(a) – determine completeness within 75 days of the submission of the application.	Staff will notify the applicant by letter of the determination of completeness. If additional information is required to make an application package complete, the applicant will be notified in writing.
Comment Period	1674(c)2 – no time limit	Staff will publish:
	10-110(b) – must be between 15-60 days long	Initial Staff EvaluationPublic Notice of Availability
Request for Information	1674(c)(1) – no time limit 10-110(c) – Requests must be made within 75 days of completeness.	Staff will issue a Request for Information letter to the applicant if required.
Workshop (optional)	1674(c)(2) – no time limit 10-110(d) – Workshop is optional but must be held within 75 days of completeness.	Staff will plan the workshop and develop all necessary presentations and other materials needed including a public notice.
Final Staff Evaluation	Not required under either regulation – no time limit	Final Staff Evaluation to be completed as part of the public record and to inform the staff recommendation of the executive director.

Milestones	Regulatory Time Limit Title 20, Section 1674(c) Title 24, Part 1, Section 10-110	CEC Staff Actions
Staff Recommendation	1674(c)(3) – Recommendation and approval must be reached within 90 days of completeness determination.	Staff will develop the staff recommendation based on the final staff evaluation.
	10-110(e) – Staff recommendation and CEC decision must be made within the later of 90 days after completeness is determined, 30 days after response to request for information, or 60 days after the close of comment for the workshop (if held).	
Executive Officer Concurrence	The executive director may concur with the staff recommendation or reject the recommendation. Rejecting the recommendation sends it back to staff for revision.	Revise staff recommendation if necessary. If approved, staff must mail a copy of the staff recommendation to the applicant (1674[c][3] and 1674[c][5]).
Business Meeting Final Decision	1674(c)(5) – The executive director approved recommendation will be acted on at the next CEC business meeting at least 15 days after the recommendation was mailed to the applicant.	Staff will develop all necessary business meeting documents and presentations and place the item on the CEC business meeting agenda for consideration.
	10-110(f) — The executive director approved recommendation will be acted on at the next CEC business meeting.	

Source: CEC Staff

Other Approvals and Processes

Title 20 Section 1674 describes the requirements and CEC consideration processes for a HERS provider application. It also contains two other approval processes: one for the HERS rating

software and another for ratings performed by California Home Energy Inspectors and Building Performance Contractors.

HERS Rating Software

As previously stated, this document assumes that the HERS rating software materials will be submitted as part of the HERS provider application. If this is the case, the rating software review will be done in parallel with the other application materials and approval of the rating software should take place at the same time as the HERS provider and residential data registry applications.

However, Title 20 Section 1674(d) also allows the rating software to be submitted as an amendment. If submitted as an amendment, the HERS rating software will be reviewed and approved separately from the HERS provider and residential data registry applications and use the process described in Title 20 Section 1674(d).

Special Approvals

Title 20 Section 1674(e) requires special approval for California Home Energy Inspectors who perform California Home Energy Audits and Building Performance Contractors who perform California Whole-House Home Energy Ratings. In this instance, a separate application is not required because the HERS provider application should already contain all the necessary information. The parallel review described in this document will include the review and approval for these types of programs, and CEC approval should take place at the same time as the HERS provider and residential data registry applications.

Recertification and Amendments

Recertification of a certified provider and approved registry is required when changes are made to any information, documentation, or materials the provider submitted to the CEC under Title 20, Section 1674(a), or Title 24, Part 1, Section 10-109, as described in Title 20, Section 1674(f), and Reference Joint Appendix JA7.8.3.2.

As specified in code, if the executive director deems the changes as non-substantive or minor, these changes may be approved by the executive director rather than the full commission. The overall process is the same as shown in Figure 1.14

¹⁴ For more information on amendments see Figure 1: Application Amendment Review Process in the staff paper <u>Approval Process for Use of an External Digital Data Source — EDDS Application and Approval Process</u> (CEC-400-2020-011).

APPENDIX A: Checklist for Applicants

The HERS Provider and Data Registry Application Checklist is a separate file designed to assist the applicant. The checklist identifies each requirement by regulation number and provides the regulation itself (as worded), which is the evaluation criteria that staff will use to evaluate the HERS provider and residential data registry applications. The checklist provides optional recommendations to applicants and is intended as a guide and resource. To aid in the review of the applications, staff recommends that the applicant use the columns provided to identify the location in the application that describes how the code requirement is being met. Checklists for different Energy Code years are available as EXCEL® spreadsheets on the CEC website.

CEC staff encourages the use of this checklist for convenience but doing so is not required.

APPENDIX B: Glossary of Terms

Term	Definition
ACM Approval Manuals	Documents establishing the requirements for CEC approval of Compliance Software used to demonstrate compliance with the Building Energy Efficiency Standards for Residential and Nonresidential Buildings currently adopted by the Energy Commission.
Alternative Calculation Method ACM	Compliance software, alternative component packages, or exceptional methods that are approved by the CEC under Section 10-109. ACMs are also referred to as Compliance Software.
Authority Having Jurisdiction AHJ	The entity that issues building permits, performs building inspections, issues building citations, and issues certificates of occupancy. They are generally county, city, or town building departments, but may include state agencies as well.
California Code of Regulations CCR	Official compilation and publication of the regulations adopted, amended, or repealed by state agencies pursuant to the Administrative Procedure Act. Properly adopted regulations that have been filed with the Secretary of State have the force of law.
California Energy Commission CEC	The California State Energy Resources Conservation and Development Commission is the state's primary energy policy and planning agency. The CEC is committed to reducing energy costs, curtailing greenhouse gas emissions, and ensuring a safe, resilient, and reliable supply of energy.
California HERS Index	The ratio of the Time Dependent Valuation (TDV) energy of the rated home to the TDV energy of the reference home as described in Chapter 3 of the HERS Technical Manual.
California Home Energy Audit	A process to determine the energy savings and cost- effectiveness of specific measures together with an evaluation of the energy uses listed in Section 1672(d), and a report to present the information used to evaluate the measures and make recommendations for the inclusion of such measures into the home. An audit need not include a Whole-House Home Energy Rating score.

Term	Definition
California Whole-House Home Energy Rating	A process to determine a California Whole-House Home Energy Rating score representing the relative energy efficiency of a newly constructed or existing residential building as compared to the Reference Home.
Certificate of Compliance CF1R	Compliance documents (forms) required to be completed and submitted to the AHJ at various points during the project life cycle.
Certificate of Installation CF2R	
Certificate of Acceptance or Verification CF3R	
Compliance Approach	Allowable methods by which the design and construction of a building may be demonstrated to be in compliance with Title 24, Part 6. The compliance approaches are the performance compliance approach and the prescriptive compliance approach. The requirements for each compliance approach are set forth in Section 100.0(e)2 of Part 6.
Data Registry Requirements Manual DRRM	A document that provides guidance regarding the functional and technical aspects of the data registry requirements given in Joint Appendix JA7.
Energy Code	California Building Energy Efficiency Standards, California Building Code Title 24, Part 1, Part 6, and the Reference Appendices. Contains energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings; and additions and alterations to existing buildings.
External Digital Data Service EDDS	A data transfer service approved by the CEC to operate in conjunction with an approved data registry that allows authorized users to transfer data from a digital data source external to the data registry as an alternative to the key-in data entry for registering compliance documents.
Field Verification and Diagnostic Testing FV&DT	HERS tests performed and registered by raters in the provider data registry following the prescribed procedures in the Title 24 Reference Appendices.
HERS Provider	An organization that administers a home energy rating system as described in Title 20, Chapter 4, Article 8, Section 1670.

Term	Definition
HERS Regulations	California Code of Regulations Title 20, Division 2, Chapter 4, Article 8, Sections 1670 <i>et seq.</i> The HERS Regulations implement the requirements of Public Resources Code Section 25942. The regulations establish the administrative requirements for the program regarding both the voluntary whole house rating system intended to educate homeowners about energy efficiency opportunities in their homes and the mandatory field verification and diagnostic testing for Title 24 Energy Code compliance.
HERS Technical Manual	Publication number: CEC-400-2008-012, December 2008. This technical manual explains the requirements for the HERS program, including requirements for HERS providers, modeling procedures and assumptions for HERS software, and procedures for California wholehouse home energy raters.
Home Energy Rating System HERS	Described in Title 20, Chapter 4, Article 8, Section 1670. The HERS program consists of providers that train and certify raters to perform whole house ratings, as well as field verification and diagnostic testing as a third-party to the contractor on a construction project. The providers and raters are responsible for registering the testing results in the provider's data registry.
Reference Appendices	Support documents for the Building Energy Efficiency Standards and the ACM Approval Manuals. The document consists of three sections: the Reference Joint Appendices (JA), the Reference Residential Appendices (RA), and the Reference Nonresidential Appendices (NA) currently adopted by the CEC.
Report Generator RG	A process for standardized document data exchange files from CEC-approved software applications and Data Registries that produces the document registration package required to complete the registration of compliance documents in Data Registries.
Residential Data Registry	Registry that is maintained by a HERS Provider that provides for registration, when required by Part 6 of all residential compliance documentation and the nonresidential Certificate of Verification.

Term	Definition
Time Dependent Valuation TDV	The time-varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission, and distribution losses.
XML schema	Refers to XML schema Definition Language, commonly referred to as XSD, which is another standard defined by the World Wide Web Consortium. An XML schema uses XSD to define a set of rules to which an XML document must conform to be considered valid according to that schema. The rules can include definitions of major organizational units, definitions of data elements and attributes data types, constraints on valid values such as upper and lower bounds, and whether data is required or optional.