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STAFF PAPER

Approval Process for Use of an External Digital Data Source:

Application Requirements and Staff Recommendations
for Data Registry Providers

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Month Year | CEC-400-2020-011

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ABSTRACT

This paper is intended to assist organizations that want to become certified by the California Energy Commission (CEC) to provide data registration services for energy code compliance documents. Specifically, it describes the mandatory requirements and optional CEC staff recommendations for preparing their application for use of an external digital data source for data exchange transactions. This paper provides a checklist for applicants to use when developing their 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 each application.

Keywords: Home Energy Rating System provider, External Digital Data Source.

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EXECUTIVE SUMMARY

The California Energy Commission authorizes Home Energy Rating System Providers to operate an approved data registry to record residential building project compliance documents. Only authorized users can enter data into a data registry. However, the *2019 Building Energy Efficiency Standards* provides an alternative method for data entry by using an Energy Commission-approved external digital data source service. An external digital data source service allows a user to record field measurements at a project site and transfer those recordings to the data registry at a later time.

Before using an external digital data source service, a Home Energy Rating System Provider must apply to the Energy Commission for approval. The application requirements are specified in Title 20, Section 1670 (et seq.) and Title 24, Part 6, Reference Joint Appendix 7. In addition to these requirements, the Energy Commission recommends that each application include the following four sections: an introduction, a description of the functionality of the proposed external digital data source service, a live demonstration of the proposed service, and appendices for relevant information.

This paper also describes the review process and evaluation criteria that Energy Commission staff will use to determine if the proposed external digital data source service meets the regulatory requirements for approval. Staff will base their recommendation on this review, and the Energy Commission's executive director or commissioners will make the final decision to approve a provider's application.

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CHAPTER 1:

Introduction

Intended Audience

This paper will help a Home Energy Rating System (HERS) Provider prepare an application or an amendment to its existing application to use an external digital data source (EDDS) service. It distinguishes between application requirements and optional staff recommendations for applications.

What Is a Registration Provider?

A registration provider is an organization that administers a California Energy Commission (CEC)-approved data registry. A data registry is used by industry to record and verify that they compliance forms required by the Building Energy Efficiency Standards (Energy Code) are completed correctly. Data entered into the data registry is done so by an authorized user directly, meaning by hand using internet access to the data registry system.

What Is an EDDS Service?

An EDDS service is a data exchange service used by authorized users to upload data to a database that registers Energy Code compliance documents. To use an EDDS service, CEC approved HERS Providers must apply to and receive approval from the CEC. The application to use an EDDS service is a new option provided by the *2019 Building Energy Efficiency Standards*.

Purpose

This document outlines the EDDS service application process as an amendment to an existing provider's application. It describes the application requirements, as well as CEC staff recommendations, evaluation criteria, the review process, and estimated review timelines.

Overview

Only CEC-approved Home Energy Rating System (HERS) Providers can operate a residential data registry. A HERS Provider application consists of two parts: an application for approval as a HERS Provider (Title 20, Section 1670, et seq.), and an application for approval as a registration provider (Title 24, Part 1 [Section 10-109] and Part 6, and Reference Joint Appendix [JA] 7).

A HERS Provider application to add an EDDS service is an amendment to the existing CEC-approved status as a HERS Provider with an accompanying data registry. The proposed EDDS service provider can be, but is not required to be, a separate business from the HERS Provider. In either case, the approved HERS Provider must apply to the CEC to add an EDDS service.

CEC staff will review and determine whether an EDDS service application amendment from an approved HERS Provider demonstrates compliance with the data registry provisions in JA7.7, either as a full data registry application (JA7.8.3.1) or an amendment to an existing approved

data registry (JA7.8.3.2). It is possible, though unlikely, that a HERS Provider's EDDS service application alone would require a full CEC review of the original data registry component of the HERS Provider application.

The timeline for CEC's evaluation of EDDS service applications includes process milestones and time limits for staff to review and respond to an application. These milestones include:

- Staff's finding that the application is complete and that responses to staff requests for further information are satisfactory.
- A public comment period and optional public workshop.
- Staff recommendations regarding application approval (positive, negative, or conditional).

Staff's recommendation will be reviewed by the CEC's executive director, who will determine if the application is approved, denied, or recommended to be heard at a CEC business meeting.

CHAPTER 2:

Requirements and Recommendations

Requirements for HERS Provider EDDS Service Applications

To offer this alternative EDDS service, the HERS Provider must apply to the CEC for approval (JA7.7, JA7.8, Title 20, Section 1673[e], 1674[a], and 1674[d]). Note that the data transmitted by an EDDS service provider may originate from field diagnostic instruments.

Recommendations for EDDS Application Format

The HERS Regulations (Title 20, Section 1670) and Joint Appendix (JA) 7 outline the minimum content required for a HERS Provider EDDS service application. To facilitate CEC's review of an EDDS service application, staff recommends, but does not require, that applications include these four sections:

1. Introduction - The EDDS Service Application Checklist (Appendix A) lists elements to include here.
2. A detailed description of the EDDS service functionality (JA7.7.1.2.1[a-i]).
3. Demonstration of compliance with the acceptance test requirement prescribed in JA7.8. This involves a live demonstration of the EDDS service successfully and securely gathering, storing, and transferring actual compliance data to the data registry.
4. Appendices, such as:
 - a. Test results (by the HERS Provider) of the transmission of compliance data between the HERS Provider and EDDS service provider (JA7.8.2).
 - b. Details of contractual agreements with the EDDS service provider (JA7.8.2.6).
 - c. User manuals for the EDDS service software, features, and data registry process (JA7.8).
 - d. Providers' checklist of requirements from Joint Appendix (JA) 7 and the HERS Regulations. The EDDS Service Application Checklist (Appendix A) can also be used to ensure the application is complete.
 - e. Other information at the discretion of the HERS Provider, such as a list of the compliance documents and data fields for which the HERS Provider will make an EDDS service available.

CEC Evaluation Criteria

CEC staff will evaluate any application or amendment submitted using the evaluation criteria included in the EDDS Service Application Checklist (Appendix A). This checklist provides the specific evaluation criteria for each requirement and includes suggestions of where in the application they should be addressed. Staff's evaluation criteria are guided by the wording and intent of the HERS Regulations (Title 20, Section 1670; Title 24, Parts 1 and 6; and Reference Joint Appendix [JA] 7).

Staff will also evaluate the EDDS service application based on its successful integration into the existing HERS Provider program, including available training for authorized users, validating and reporting compliance documentation for authorities having jurisdiction, and quality assurance programs enforced by the HERS Provider. Provider applicants must submit any application for a confidential designation separately to the CEC Dockets Unit (email for the CEC Docket Unit: Docket@energy.ca.gov).

Recommended Live Demonstration

To satisfy the staff acceptance test requirements (JA7.8.1), the HERS Provider may perform a live demonstration of the EDDS service feature in a laboratory or field setting to fulfill the requirement of a self-test of the data registry’s capacity for using an EDDS service (JA7.8.1). Staff will use a checklist such as the one in Table 1 below to observe and evaluate the demonstration for each compliance document selected for EDDS service data entry. However, the checklist will likely need to be tailored to the EDDS service features and procedures described in the application. Therefore, while Table 1 gives an outline (or example) of the checklist that will be developed, it is not the final version of the checklist that will be used.

Table 1: EDDS Service Demonstration Checklist

PASS	Elements	Criteria
<input type="checkbox"/>	EDDS service data capture, storage, and upload security and integrity JA7.7.1.2.1(e)	The user calibrates the field data capturing or testing device or provides the necessary documentation of recent calibration.
<input type="checkbox"/>	JA7.7.1.2.1(e)	The user properly connects (or deploys) the field data capturing or testing device to a suitable active test subject.
<input type="checkbox"/>	JA7.7.1.2.1(e)	The user demonstrates the capture and upload of the field or test data to the EDDS service data storage system.
<input type="checkbox"/>	JA7.7.1.2.1(e)	The user connects a traditional measurement device to verify the accuracy of the field data capturing or testing device.
<input type="checkbox"/>	JA7.7.1.2.1(e)	The user is prevented from altering the captured data other than by retesting the physical test subject.
<input type="checkbox"/>	EDDS service upload options JA7.7.1.2.1(g)	Automatic upload, such as by network-connected diagnostic field verification instruments or is manually keyed in by the user using an EDDS service software user interface.

PASS	Elements	Criteria
<input type="checkbox"/>	Data entry by authorized user JA7.7.1.2.1(a)	Only the user can initiate the data exchange.
<input type="checkbox"/>	JA7.7.1.2.1(a)	The user can only do so while logged into the data registry.
<input type="checkbox"/>	JA7.7.1.2.1(a)	The user is limited to using the data exchange feature managed and made available by the data registry user interface.
<input type="checkbox"/>	Authorized user final review JA7.7.1.2.1(c)	The user is prevented from executing the final signature without a final opportunity to review and revise the information transmitted to the data registry.
<input type="checkbox"/>	Develop compliance document JA7.7.1.2.1(h)	The user is able to submit the compliance data from the EDDS service data exchange, through the data registry system to the report generator and produce a valid compliance document.

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CHAPTER 3:

Review and Approval Process

EDDS Service Application Review and Approval Process

Only HERS Providers are eligible for the data registry approval process described in JA7.8. The CEC does not directly approve EDDS service providers; they can only be approved as part of a HERS Provider's application. Figure 1 explains this process graphically.

The Energy Code allows two paths for approval of a HERS Provider application: full approval at a CEC business meeting or streamlined approval for amendments that involve only minor changes (See Figure 1). The Energy Code defines minor changes as those made to the functionality, security, or technology features that necessitate acceptance testing of no more than 30 percent of the compliance document templates used in a CEC-approved data registry (JA7.8.3.1).

Full Approval

Full approval at a CEC business meeting is required:

1. When a HERS Provider has not been previously approved by the CEC (JA7.8.3.1). For example, a new HERS Provider would need full approval;
2. When major changes are made to the functionality, security, or technology features that necessitate acceptance testing of more than 30 percent of the compliance document templates used in a CEC-approved data registry (JA7.8.3.1);
3. When the Energy Code is updated (JA7.8.3.1). With every code cycle, HERS Providers are required to apply to the CEC for re-approval.

Full approval ensures the data registry conforms to all applicable requirements for functionality and security in JA7.8.3.1:

1. Capability to produce and manage registered documents (JA7.5).
2. Electronic signature capability and manage authorization of users (JA7.6.3.2.1).
3. Document data validation (JA7.6.3.2.2).
4. Signer review and signature actions (JA7.6.3.2.3).
5. Digital signature and digital certificate actions (JA7.6.3.2.4).
6. Capability to transmit secured documents and data to the Commission Compliance Document Repository (JA7.6.3.2.5).
7. Document retention capability (JA7.6.3.2.6).
8. 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 (JA7.6.3.2.7; JA7.7).
9. Capability for data exchange with the compliance report generation services made available by the CEC to generate formatted electronic documents (JA7.2; JA7.7).

Streamlined Approval

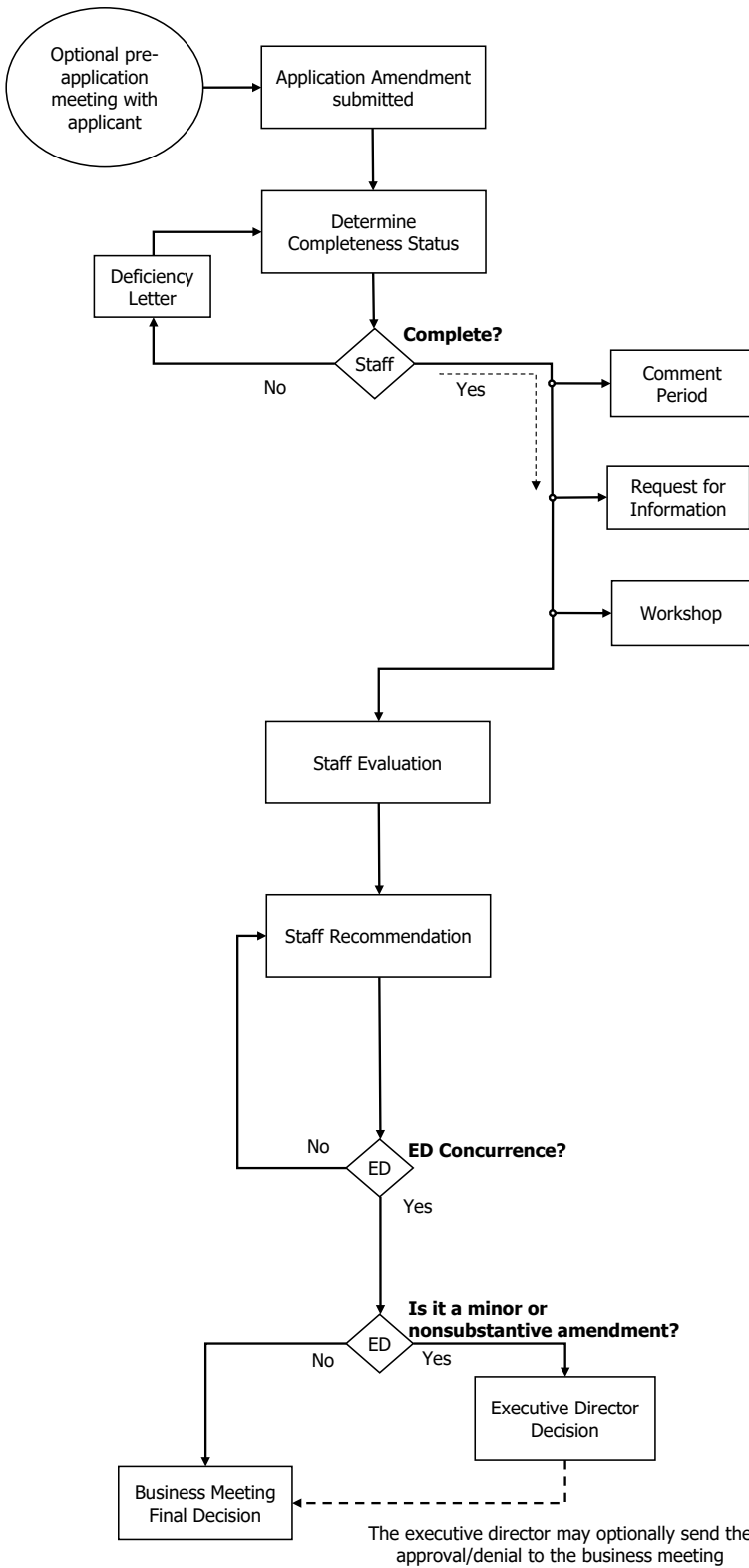
Amendments to approved data registries that do not require full CEC approval may be approved by the executive director through a streamlined process if they meet the criteria for minor changes. As noted above, a change is deemed minor if it does not necessitate acceptance testing of more than 30 percent of the compliance document templates used in a CEC-approved data registry (JA7.8.3.1). For example, changes that have qualified for streamlined approval include minor changes to document registration procedures, data input specifications and procedures, or registered compliance document output.

Any application for an amendment to an approved data registry must be accompanied by a cover letter explaining the type of amendment requested, and any applicable documents necessary to fully describe and justify the proposed amendment. All items on the application checklist in Section JA7.8.2 must be submitted. If the application includes an amendment to add an EDDS service, the applicant should also use the EDDS service demonstration checklist in Table 1.

When a HERS Provider application qualifies for streamlined approval:

1. The HERS Provider must notify the CEC's executive director in writing to provide a description of the change and the reason for the change.
2. The HERS Provider must submit an addendum to its user manual describing the changes to the registry.
3. The executive director will respond to the HERS Provider applicant in accordance with the procedures specified in Title 24, Part 1, Section 10-110.
4. After the executive director approves the change, the HERS Provider may make the modified data registry available for use for registration of compliance documentation. The Provider must notify registry users that the modified registry is available.

Figure 1: Application Amendment Review Process



Regulatory Time Limits

(Title 24, Part 1, Section 10-110)
(Title 20, Section 1674)

The regulatory clock starts with submission of the application.

Determine completeness within 75 days of the submission of the application (Section 10-110[a]).

Minimum 15-day, maximum 60-day comment period (Section 10-110[b]).

Requests must be made within 75 days of "determined complete" ((Sections 10-110[c] and 1674[c][1]).

Workshop must be held within 75 days of completeness (Sections 10-110[d] and 1674[c][2]).

Staff evaluation to be completed and to inform the staff recommendation to the executive director (Section 1674[c][2] – first sentence.)

Staff recommendation and CEC decision must be made within the later of 30 days after response to request for information or 60 days after the close of comment for the workshop (if held) (Sections 10-110[e] and 1674[c][3]).

The executive director can concur with the staff recommendation or reject the recommendation. Rejecting the recommendation sends it back to staff for revision.

The executive director then determines if the amendment is minor/nonsubstantive, which may be approved by the executive director. ((Sections 10-110[e], JA7.8.3.2, and 1674[f])

or

The executive director may determine that the amendment is major/substantive, which requires that the CEC approve it. (Sections 10-110[e], JA7.8.3.1, 1674[c][5])

Source: California Energy Commission

Application Review Milestones and Timeline

Application review milestones and timeline (Table 2) are dictated by requirements in Title 24, Part 1, Section 10-110. Two of the five milestones are optional. Staff first determines if the application is complete, meaning that the application meets requirements sufficiently for the application review process to be carried out. Once the staff determines that an application is complete, it posts a public notice of the application and initiates a public comment period. If requested, staff will withhold confidential materials from the public notice. During the public comment period, CEC staff may seek additional information from the HERS Provider or may convene a public workshop. After the public comment period ends, staff develop recommendations regarding the approval of the application, taking into consideration information from the HERS Provider, interested parties, and the public. Regarding amendments, if a proposed amendment is determined to be a major change that requires the full CEC approval process, it is heard at a CEC business meeting. If it is determined to be a minor change, then the executive director may consider it for executive director approval.

Table 2: Application Review Milestones and Timeline

Milestones	Required Determinations	Prescribed Time Limits	Staff Actions
Application Determined Complete Section 10-110(a)	Staff will determine an application is complete when all the supporting information required to complete the application review is received.	Within 75 days of receipt of the application.	Staff will use a checklist based on requirements in Joint Appendix (JA) 7 to determine if the application is complete. Incomplete applications will result in a deficiency letter identifying missing compliance elements and resetting the 75-day clock.
Application Public Comment Period Section 10-110(b)	Staff will post the complete application (withholding confidential material if requested) on the CEC website for interested parties to review and comment	The comment period will be no less than 15 days and no more than 60 days.	If an applicant seeks to make some or all of their application confidential, they must apply for confidentiality. Staff will produce a report summarizing the application without revealing any confidential information.
Additional Information Request (optional) Section 10-110(c)	Staff may request additional information to evaluate the application. Staff will delay consideration of the application until the applicant submits the additional information.	Within 75 days of the date the application is deemed complete.	Staff will issue a request for further information, asking the applicant to perform a live demonstration of the EDDS service and provide additional information regarding other aspects of the application. The 75-day limit only applies to staff and is reset based on the response from the applicant. The applicant may take as long as it likes to respond.

Milestones	Required Determinations	Prescribed Time Limits	Staff Actions
Public Workshop (optional) Section 10-110(d)	Staff may convene a workshop to gather additional information from the applicant and others. Interested parties have 15 days after the workshop to submit comments or information regarding the application.	Within 75 days of the date the application is deemed complete.	Staff will make necessary preparations for a workshop, including the public notice. These preparations ensure that the workshop (if held) is scheduled within 75 days of the date the application is deemed complete. However, staff may cancel the workshop if staff determines it is unnecessary.
Staff Recommendation and CEC Decision Section 10-110(e)	Staff will submit a written recommendation regarding the application to a CEC business meeting or the executive director (positive, negative, or with conditions).	Whichever is later: Within 90 days of the date the application is deemed complete, or within 30 days after receipt of complete additional information requested, or within 60 days after receipt of additional information submitted by interested parties.	Full Approval: Staff will place the complete application package, any additional information requested or considered by staff, and the staff recommendation approved by the executive director on the business meeting agenda for consideration by a quorum of CEC commissioners (Section10-110[f]). Streamlined Approval (for Amendments Only): Staff will provide the complete application package, including any additional information requested or considered by staff, and the staff recommendation to the executive director for consideration (JA7.8.3.2).

Source: Title 24, Part 1, Section 10-110



APPENDIX A: EDDS Service Application Checklist

The EDDS Service Application Checklist is a separate file designed to assist the applicant in several ways. First, it lists each requirement by regulation number, the regulation itself (as worded) and the evaluation criteria that staff will use to evaluate any HERS Provider’s EDDS service application. The checklist can be sorted two ways: by the order in which the regulations appear in Joint Appendix (JA) 7 or by the CEC staff’s recommended application format. The checklist is an EXCEL® spreadsheet available on the CEC website at the [HERS Provider Application web-section](#).

Figure A-1: Screen Shot of the EDDS Service Application Checklist

Origin Order	Applicati Order	Section	Title	Requirement	Staff Evaluation Criteria	Application Sections Recommended by Staff	Applicatio Page Num	Complete (Y or N)	Notes
1	1	JA7.7.1.2	Digital Data Sources External to a Data Registry (First Sentence)	As an alternative to the data entry described in JA7.7.1.1, digital data sources external to a Data Registry may be used by an authorized user of a Data Registry for transmitting information to a Data Registry during document registration procedures.	This is a general statement of functionality for the EDDS. The applicant will demonstrate compliance with this requirement by its compliance with JA7.7.1.2.1.	Cover Letter Optional			
2	2	JA7.7.1.2	Digital Data Sources External to a Data Registry (Second Sentence)	External Digital Data Sources (EDDS) shall be approved by the Energy Commission in accordance with the applicable requirements specified in Sections JA7.8.	The EDDS-Registration Provider application must be approved by the CEC. The applicant will demonstrate compliance with this requirement by compliance with JA7.8.	Cover Letter Optional			
13	3	JA7.7.1.2.1	(i)	The current compliance document schemas approved by the Energy Commission shall be made available to the EDDS services providers as needed in order to clarify the Title 24 Part 6 compliance document data requirements.	The applicant can comply with this requirement with a simple statement of compliance by the registration provider. The registration provider can state that the EDDS has been made aware of the compliance document schema(s) approved by the CEC, their importance to the validation process for compliance documents, and has had the opportunity to gain access to the schema(s) through the CEC.	Cover Letter			
14	4	JA7.7.1.2.2	EDDS Types	EDDS types may include but are not limited to:	The applicant must identify what type of EDDS they are using: (a), (b), or (c) below. The applicant must include a brief explanation as to why it believes that the EDDS is best represented by this type.	Cover Letter			
15	5	JA7.7.1.2.2	(a)	Diagnostic instrument manufacturer services that incorporate wireless or web-based data logging capabilities into their products, capture and store relevant information from field diagnostic testing procedures, and provide digital access to the stored data to the diagnostic tool owners and other parties to the field verification procedure.	These services utilize specialized near-range measurement instruments that may be linked by wire or wifi, and digitally record the measurements. The data may be uploaded to an EDDS cloud-based data store instantaneously as it is collected in the field, or the data may be stored locally on a laptop or data logger for upload to the EDDS cloud service at a later time after the field diagnostic test has been completed. A Rater may subscribe to the EDDS service and have a unique user name and password specific to the EDDS cloud-based	Cover Letter			



APPENDIX B: Glossary

TERM	DEFINITION
External digital data source service; EDDS service	An external digital data source is a data transfer service approved by the CEC to operate in conjunction with an approved data registry that allows authorized users of a data registry to transfer data from a digital data source external to the data registry for data exchange transactions with described in JA7.7.1.1, for registering compliance documents as required by Title 24, Part 6.
Data registry	A 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 Joint Appendix (JA) 7, with guidance from the Data Registry Requirements Manual, and provides for registration of residential or non-residential compliance documentation used for demonstrating compliance with Title 24, Part 6.
California Energy Commission; CEC	The California Energy Commission is the state's primary energy policy and planning agency.
Building Energy Efficiency Standards; Energy Code	State regulations contained in Title 24, Parts 1 and 6, of the California Code of Regulations and the Reference Appendices.
Home Energy Rating System; HERS	A program that provides testing and rating procedures to measure the energy performance of a home, as well as addressing construction defects and poor equipment installation, including central space conditioning systems and envelope insulation.

TERM	DEFINITION
Home Energy Rating System Provider; HERS Provider	A HERS Provider is an organization that administers a Home Energy Rating System as described in the California Code of Regulations, Title 20, Sections 1670 et seq.
Registration provider	A registration provider is an organization that administers a data registry service that conforms to requirements in Joint Appendix (JA) 7 and may conform to the guidance given in the Data Registry Requirements Manual (CEC-400-2018-022-CM).
Residential data registry	A residential data registry is a data registry maintained by a HERS Provider, serving as a tool for the registration of all residential compliance documentation and the non-residential certificate of verification as required by Title 24, Part 6.
XML schema	An XML schema refers to Extensible Markup Language (XML) schema definition language, commonly referred to as XSD, a standard defined by the W3C (World Wide Web Consortium). An XML schema uses XSD to define a set of rules to which an XML document must conform in order to be considered valid according to that schema. The rules can include definition of major organizational units, definition of data elements and attributes of data types, constraints on valid values such as upper and lower bounds, and whether data is required or optional.