

DOCKETED

Docket Number:	19-HERS-01
Project Title:	2019 HERS Providers' Application for the 2019 Building Energy Efficiency Standards
TN #:	240945
Document Title:	Staff Report CHEERS Application to Use Archon Energy Solutions Compass External Digital Data Source
Description:	This staff report summarizes the CHEERS application to use Archon Energy Solutions Compass external digital data source and is intended for review and public comment following Section 10-110(b) of the Energy Code.
Filer:	Daniel Wong
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	12/15/2021 1:27:46 PM
Docketed Date:	12/15/2021



**CALIFORNIA
ENERGY COMMISSION**



California Energy Commission

STAFF REPORT

ConSol Home Energy Efficiency Rating Services: Application to Use Archon Energy Solutions Compass External Digital Data Source

**Nonconfidential Summary of Application for
Public Disclosure**

December 2021 | CEC-400-2021-018-SF

California Energy Commission

Daniel Wong
Primary Author

Lorraine White
Office Manager
STANDARDS COMPLIANCE OFFICE

Michael J. Sokol
Deputy Director
EFFICIENCY DIVISION

Drew Bohan
Executive Director

DISCLAIMER

Staff members of the California Energy Commission prepared this report. As such, it does not necessarily represent the views of the California Energy Commission, its employees, or the State of California. The California Energy Commission, the State of California, its employees, contractors, and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the California Energy Commission, nor has the Commission passed upon the accuracy or adequacy of the information in this report.

ABSTRACT

The *2019 Building Energy Efficiency Standards* allow a registration provider to use an external digital data source service as an alternative to keyed-in data entry for authorized users of the data registry. The registration provider must apply to the California Energy Commission (CEC) for approval to use the service (Title 24, Part 6, Reference Joint Appendix JA7.8).

ConSol Home Energy Efficiency Rating Services, Inc., a CEC-approved registration provider, applied to use Archon Energy Solutions Compass external digital data source service with the associated data registry on July 20, 2021.

In accordance with Title 24, Part 1 Section 10-110(a) of the California Building Code, on September 27, 2021, the executive director of the CEC determined that the application is complete with all the supporting information required under Section 10-109(i) and Reference Joint Appendix JA7.

The executive director will provide a public comment period to give interested parties an opportunity to review the application and provide public comments. The executive director will also schedule a workshop to provide an additional venue for public comments following Title 24, Part 1 Section 10-110(d). The public comment period and workshop will be announced in a notice issued by the CEC.

This staff report summarizes the submitted application intended for public review and comment under Title 24, Part 1 Section 10-110(b) but does not contain any confidential information. This report also describes the requirements for external digital data source applications and provides an overview of the application review and approval process.

Keywords: Registration provider, data registry, external digital data source, Building Energy Efficiency Standards, Home Energy Rating System

Wong, Daniel. 2021. *ConSol Home Energy Efficiency Rating Services: Application to Use Archon Energy Solutions Compass External Digital Data Source*. California Energy Commission. Publication Number: CEC-400-2021-018-SF.

TABLE OF CONTENTS

	Page
Abstract	i
Table of Contents.....	iii
List of Tables	iv
Executive Summary.....	1
CHAPTER 1: Background	3
Overview	3
Minimum Application Requirements.....	3
Evaluation and Success Criteria	5
EDDS Application Compliance Elements	5
Live Demonstration	7
CHAPTER 2: EDDS Application Summary	9
Summary of the CHEERS Application to Use Archon Energy Solutions Compass EDDS Service	9
Cover Letter	9
Introduction	9
EDDS Detailed Description	10
Data Exchange Procedures.....	10
Best Practices for Data Security and Data Integrity.....	11
Self-Testing Procedures and Summary of Results – Application Appendix A.....	11
Disclosure of EDDS Contractual Agreements – Application Appendix B.....	12
Data Registry and EDDS User Instructions – Application Appendix C.....	12
Data Registry Provider Statement – Application Appendix D	12
Working Agreement Between EDDS Service Provider and Data Registry Provider – Application Appendix E	12
EDDS Service Provider Signatures – Application Appendix F	13
Live Demonstration of the EDDS Features.....	13
CHAPTER 3: Application Review and Approval Process	15
Full Approval.....	15
Streamlined Approval	16
Milestones and Timeline	16
APPENDIX A: Glossary.....	A-1
APPENDIX B: EDDS Application Checklist.....	B-1
APPENDIX C: List of Compliance Documents that will Utilize Transmitted Data From the EDDS	C-1

LIST OF TABLES

	Page
Table 1: EDDS Application Requirements.....	4
Table 2: Example EDDS Live Demonstration Checklist	7
Table 3: EDDS Service Live Demonstration Checklist	13
Table 4: Milestones and Timeline for Staff Review and Possible Approval of Application (Title 24, Part 1, Section 10-110).....	17

EXECUTIVE SUMMARY

The California Energy Commission (CEC) authorizes a registration provider to operate an approved data registry to record building project compliance documents for demonstrating compliance with the *Building Energy Efficiency Standards* (Title 24, Part 1 Chapter 10 and Part 6). A registration provider is an organization that administers and maintains a data registry. A data registry is a web service with a user interface and database that allows authorized users to record compliance data, register compliance documents, and verify the authenticity of the retained compliance documents. The data that is recorded includes building project information that is used to complete compliance documents. These documents are required for all newly constructed buildings, and additions and alterations to existing buildings. They contain the information necessary for local building departments and enforcement agencies to verify that a building project meets the *Building Energy Efficiency Standards*.

Data registries must be capable of receiving keyed-in data entry from a personal computing device via the data registry user interface. The *2019 Building Energy Efficiency Standards* provide an alternative method of data entry by using an external digital data source service. An external digital data source is a software or diagnostic tool that allows a user to record compliance data and transfer it to a data registry at a later time.

Before using an external digital data source service, a registration provider must apply to the CEC for approval. The application requirements are specified in Title 20, Section 1670 (et seq.) and Title 24, Part 6, Reference Joint Appendix JA7.

ConSol Home Energy Efficiency Rating Services, Inc. applied to use Archon Energy Solutions Compass external digital data source on July 20, 2021. On September 27, 2021, the executive director determined that the external digital data source service application was complete (Title 24, Part 1, Section 10-110[a]). The executive director will provide a public comment period to give interested parties an opportunity to review the application and provide public comments. A public workshop will be scheduled to accept further public comments and information regarding the application. The public comment period and workshop will be announced in a notice issued by the CEC.

This staff report summarizes the submitted application intended for public review and comment but does not contain any confidential information regarding the submitted application.

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

CHAPTER 1:

Background

External digital data source (EDDS) services are optional data entry systems used by a data registry. A registration provider¹ may provide an alternative to manual keyed-in data entry into a data registry for completing and registering compliance documents by authorized users² via an EDDS service provider. The compliance data recorded by an EDDS service provider may originate from a data recording from field diagnostic instruments or from other types of data collection devices used by a data registry authorized user. To use this data input alternative, the registration provider must apply to the California Energy Commission (CEC) in accordance with the applicable requirements of Joint Reference Appendix JA7.8 to use an EDDS service. This is a new option provided by the *2019 Building Energy Efficiency Standards* (Energy Code).

Overview

Staff reviews applications from the registration provider to demonstrate compliance with EDDS requirements under the data registry provisions in JA7.8 either as a full data registry application (JA7.8.3.1) or as an amendment to an existing approved data registry application (JA7.8.3.2).

The review and approval procedures are subject to a timeline³ that identifies milestones and time limits that staff must observe to respond to an application (Table 4). The milestones include a determination that the application is complete, satisfactory responses to requests for further information, a public comment period, a workshop, and staff recommendations regarding the approval of the application (either positive, negative, or with conditions).

Minimum Application Requirements

Table 1 summarizes the minimum required contents of a registration provider's application seeking to use an EDDS service provider. A detailed list of the requirements is provided in the EDDS application checklist included in Appendix B.

1 A "registration provider" is an organization that administers a data registry service that conforms to the requirements in Joint Reference Appendix JA7 and may conform to the guidance given in the *Data Registry Requirements Manual*.

2 An "authorized user" is a person who has a user account with a data registry and is required to provide their correct username and password in order to access the data registry. Data registry users may be required to provide professional licensure, certification or credential information, or other qualifying information as condition of receiving authority to provide signatures for certain types of documentation.

3 Milestones and schedule for the consideration of applications are detailed in Title 24, Part 1, Section 10-110.

Table 1: EDDS Application Requirements

Reference Appendices	Titles	Summary Requirements
JA7.7.1.2	Digital Data Sources External to a Data Registry	A registration provider must apply to the CEC for approval to use an EDDS service as an alternative to manual keyed-in data entry (approval process is provided by Section JA7.8).
JA7.7.1.2.1 (a) – (j)	EDDS Data Exchange Requirements	Specifies the requirements for the data uploads to an EDDS database, the data exchange between the data registry and the EDDS, and other requirements for the EDDS that the registration provider must provide to ensure compliance.
JA7.7.1.2.2	EDDS Types	EDDS may include but are not limited to three basic types of services: diagnostic instrument manufacturer services, third-party quality control programs, or internet-based datastores. The data registry application must describe the EDDS service type.
JA7.8	Data Registry Approval	The approval process for the data registry includes requirements for staff to perform acceptance testing of the EDDS service. This acceptance test will be part of the verification of all requirements in JA7.7.1.
JA7.8.1	[Approval] Overview	The approval process for the data registry includes a “self-testing” requirement. The application will include self-testing results of the EDDS data exchange.
JA7.8.2.6	Disclosure of Contractual Agreements with EDDS	If a registration provider chooses to use a third-party EDDS service provider, a working agreement or contract must be executed between the registration provider and an EDDS services provider before applying to the CEC for approval.

Source: California Energy Commission, Standards Compliance Office

Evaluation and Success Criteria

The application must detail each of the following compliance elements to provide staff with the necessary means to evaluate the application and the ability of the registration provider to successfully satisfy the regulatory requirements. Staff evaluates the detailed description of the compliance elements based on the Energy Code requirements and incorporation into the existing registration provider program (if applicable). These compliance elements include available training for authorized users, validating and reporting compliance documentation for authorities having jurisdiction, and quality assurance programs enforced by the registration provider.

EDDS Application Compliance Elements

1. Describe the full procedure of the data exchange from the point of view of the authorized user. Include what necessary training is needed for the authorized user, how the data entry system will effectively limit the EDDS data exchange to authorized users (JA7.7.1.2.1[a]), how the data registry will effectively protect against falsified data entry via the data exchange (JA7.7.1.2.1[d]), and how the trained authorized user will review the data to be exchanged prior to signature (JA7.7.1.2.1[c]).
 - a. The registration provider is responsible for certifying the reliability and accuracy of the data registry when used for registration of compliance documents in accordance with the requirements of Section 10-103(a), Appendix JA7, and may reference the guidance given in the *Data Registry Requirements Manual*⁴ (JA7.8.2.1).
 - b. The registration provider must ensure that all data exchanged from an EDDS to the data registry are limited to authorized users of the data registry and only under the following conditions (JA7.7.1.2.1[a]):
 - i. An authorized user of the data registry must initiate the data exchange.
 - ii. The authorized user must be logged into a data registry to initiate the data exchange.
 - iii. The authorized user will be limited to using the data exchange feature managed and made available by the data registry user interface.
 - c. The registration provider must ensure that an unattended automatic electronic data exchange from the EDDS to the data registry is not permitted (JA7.7.1.2.1[b]).
 - d. The registration provider must ensure that it will provide the authorized user with the opportunity to review and revise the information transmitted to the data registry before making electronic signature controls available to the user (JA7.7.1.2.1[c]).
 - e. The registration provider must manage the security and integrity of the data exchange with the EDDS (JA7.7.1.2.1[d]). The registration provider must provide

⁴ California Energy Commission staff. *2019 Data Registry Requirements Manual*. June 2020. Publication Number: CEC-400-2018-022-CMF. Available at <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-022-CMF.pdf>

all necessary procedures and protocols used to comply and demonstrate its integrity.

2. Describe the full procedure to gather, store, verify, and exchange data from the point of view of the EDDS service provider. Include a full description of any field data-gathering or -testing equipment, ways the equipment is used, required training, and employed antitampering protections. Describe how the EDDS will ensure only trained and authorized users will have access to the data gathering equipment (if applicable) and EDDS data storage systems (JA7.7.1.2.1[a] and [e]), and the means by which the authorized user will upload the field data to the EDDS data storage system (JA7.7.1.2.1[b] and [g]).
 - a. The registration provider must perform self-testing of the data exchange features proposed for approval and confirm that the data exchange from the EDDS to the data registry provides accurate information to all applicable compliance document data fields for each compliance document for which the EDDS is proposed to be used for data input (JA7.8.1).
 - i. The registration provider will identify the specific compliance documents and data fields optioned for EDDS data inputs. This list may be referenced and placed in an appendix, if necessary.
 - b. The registration provider must ensure that the authorized user's compliance data may be uploaded to the EDDS data storage system such as by network-connected diagnostic field verification instruments, or it may be keyed-in by the user using an EDDS services software user interface (JA7.7.1.2.1[g]).
3. Describe all relevant published or standardized industry best practices used for EDDS data input, storage, and transmittal; why they are applicable and specifically how the registration provider's and EDDS service provider's respective systems comply. Describe any additional best practices used, how they are applicable, and how the registration provider's and EDDS service provider's respective systems comply (JA7.7.1.2.1[f]).
 - a. The registration provider must ensure that user data uploads to the EDDS, and subsequent storage and maintenance of compliance data in the EDDS, are done using best practices for secure data exchange and secure data storage (JA7.7.1.2.1[e]).
 - b. The registration provider must ensure that the data exchange processes that import data into the data registry from the EDDS are performed using best practices for secure data exchange (JA7.7.1.2.1[f]).
 - c. The registration provider must ensure that the data transmitted from the EDDS to the data registry conform to the XML schema for each respective Title 24, Part 6 compliance document for which the data are to be used (JA7.7.1.2.1[h]).
 - d. The registration provider must make the current compliance document XML schemas, as approved by the CEC, available to the EDDS service provider for each Title 24 Part 6 compliance document to clarify document data requirements (JA7.7.1.2.1[i]).

4. Describe the self-testing procedures of the data exchange for each of the applicable compliance documents and data fields, the argument for why the applicant believes the procedures are satisfactory, and the results of self-testing (JA8.1). The self-testing procedures should include the entire process from data input to the EDDS to final signature on the compliance document (JA7.7.1.2.1[h]).
 - a. The registration provider must self-test and demonstrate that all data provided to complete compliance documents are subject to validation by the data registry software after the data are transmitted to the data registry (JA7.7.1.2.1[h]).
5. The registration provider must include documentation to disclose the details of all contractual agreements with the EDDS service provider before submitting (or with) an application to the CEC for approval. (JA7.8.2.6).

Live Demonstration

To perform the staff acceptance test for the data registry to use an EDDS (JA7.8.1), the registration provider shall perform a live demonstration of the EDDS service in a laboratory or field setting securely gathering and storing actual data, and securely transferring those compliance data to the data registry. Staff will use a checklist such as the one provided in Table 2 to observe and evaluate the demonstration of each compliance document optioned for EDDS data entry. However, staff will tailor each checklist to the intended EDDS application.

Table 2: Example EDDS Live Demonstration Checklist

PASS	Elements	Benchmark/Example
<input type="checkbox"/>	EDDS 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 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.

PASS	Elements	Benchmark/Example
<input type="checkbox"/>	EDDS upload options JA7.7.1.2.1(g)	Automatic upload, such as by network-connected diagnostic field verification instruments, or manually keyed-in by the user using an EDDS services software user interface.
<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"/>	Produce compliance document JA7.7.1.2.1(h)	The user is able to submit the compliance data from the EDDS data exchange, through the data registry system to the report generator and produce a valid compliance document.

Source: California Energy Commission, Standards Compliance Office

CHAPTER 2:

EDDS Application Summary

ConSol Home Energy Efficiency Rating Services, Inc. (CHEERS) applied to use an EDDS and amend the CHEERS data registry on July 20, 2021, with EDDS service provider Archon Energy Solutions. The CEC executive director found the application complete with all required information on September 27, 2021.

The executive director will provide a 30-day public comment period to give interested parties an opportunity to review the application and provide public comments. Staff is preparing a request for further information to include a live demonstration of the EDDS services as well as other needed clarifications. A public workshop will be scheduled to accept further public comment and information regarding the application. Interested parties will have 15 days after the workshop to submit additional comments or information regarding the application. The public comment period and workshop will be announced in a notice issued by the CEC.

The following summarizes nonconfidential information contained in the submitted application. The intent of this report is to make information available to the public for the public comment period, which is required under Section 10-110(b), while protecting the information deemed confidential. This report summarizes the application without revealing any confidential information. The application is separated into three sections: cover letter, introduction, and EDDS detailed description. The application also includes Appendices A through F.

Summary of the CHEERS Application to Use Archon Energy Solutions Compass EDDS Service

Cover Letter

A cover letter addressed to the CEC executive director is included describing the proposed changes to the CHEERS data registry for use of an EDDS from EDDS service provider Archon Energy Solutions. CHEERS seeks a streamlined approval of the application following JA7.8.3.2. The proposed EDDS will provide an alternative to keyed-in data entry for residential prescriptive alteration documents, which account for less than 30 percent of all residential compliance documentation.

Introduction

The application's introduction includes a signed certification that the data registry provider will follow all requirements of Title 20, Sections 1670 (et seq.) and JA7, a signed certification that the EDDS service must be approved by the CEC in accordance with JA7.8 before making the EDDS service available to authorized users, and a signed certification that the data registry is reliable and accurate when used for registering compliance documents. The EDDS service provider certifies that the compliance document schemas have been made available to the EDDS service provider by the data registry provider. The contact information for the data registry provider and the EDDS service provider is included in the application.

A summary of the features of the EDDS service is described and the type of EDDS is stated. The proposed EDDS service is an internet-based datastore and software user interface that allows authorized users to input compliance data and transmit the data to the data registry as specified by JA7.7.1.2.2(c). The proposed EDDS service will allow only authorized users of the data registry to transmit data to the data registry.

The proposed EDDS service will provide an alternative to keyed-in data entry for 24 of the 134 residential compliance documents, thus necessitating acceptance testing of 18 percent of compliance document templates used in a CEC approved data registry. A list of all CEC compliance documents that use transmitted data from the EDDS is included in the application and Appendix C (List of Compliance Documents That Will Utilize Transmitted Data From the EDDS) of this report.

EDDS Detailed Description

The proposed EDDS service will allow authorized users to key-in compliance data into the EDDS user interface using a computer or mobile device. The EDDS service will provide an alternative data input method to keyed-in data entry using the data registry user interface. Authorized users of the CHEERS data registry and EDDS service can transmit the keyed-in compliance data from the EDDS service to the data registry via a web-based application programming interface made available through the data registry user interface.

A procedural description of the proposed EDDS service describes the process for authorized users to complete CF1R, CF2R, and CF3R documentation using the EDDS service and data registry features. This includes a description of the process for uploading compliance data into the EDDS service, transmission of compliance data from the EDDS service to the data registry, and reviewing and signing compliance documentation that uses the transmitted data. Example screenshots of the EDDS user interface are included to depict the process.

Data Exchange Procedures

To use the EDDS service, the user must first establish a user account and password with the EDDS service provider. The user must contact the EDDS service provider to establish the account. The user must also be an authorized user of the CHEERS data registry to transmit compliance data to the data registry.

Once an account is established with the EDDS service provider, the user can login to the web-based EDDS service user interface using a computer or mobile device. Project information and compliance data can be entered into the EDDS user interface using keyed-in data entry. Data entries are validated by the EDDS using the CEC-approved XML schema.⁵ The compliance data are stored and maintained by the EDDS service provider.

After compliance data have been entered into the EDDS, the authorized user can login to the CHEERS data registry to initiate data exchange. The user must enter their data registry

⁵ Data validation rules or specifications are defined in the XML schema that represents the compliance data for compliance documents. The XML schema standardize the organization of the data, terminology, and data types, thus supporting data integrity and providing built-in data validation. The XML schema are published and approved by the CEC.

authorized user credentials to login to the data registry user interface. The data exchange feature will be available in the data registry user interface, allowing the user to initiate data exchange from the EDDS to the data registry. Data exchange between the EDDS and data registry will not occur until the user has logged into the CHEERS data registry and manually initiates the data exchange from within the data registry user interface. These actions ensure that the data exchange is initiated only by an authorized user of the data registry. Data transmitted from the EDDS to the data registry is validated by the data registry against the CEC-approved XML schema.

After the data exchange is complete, the user can review and revise the transmitted data from the data registry user interface and digitally sign the compliance documentation. Subsequently, the data are submitted to the compliance report generator for digital signing and registration.

Best Practices for Data Security and Data Integrity

The data registry provider has stated that user data uploads to the EDDS, and storage and maintenance of compliance data in the EDDS, are done using best practices for secure data exchange and secure data storage.

Data uploaded to the EDDS uses industry standard encryption protocols for secure communications over the internet. The same encryption protocols are used for communication and data transfer between the EDDS and the data registry.

EDDS data servers also use industry standard encryption protocols for secure data storage. The EDDS service and database are hosted on cloud platforms that conform to industry standard security compliance programs, and implement security measures such as virtual private networks, user access management, regular data backups, and implementation of firewalls to prevent intrusion.

Both the EDDS service provider and data registry provider state that security best practices are in place to ensure data security and integrity. These include best practices for information technology administration, access management, data backups, employee education, and implementation of security software.

The data registry provider certifies that the approved CEC XML schemas have been made available to the EDDS service provider. The data registry provider certifies that the transmitted data from the EDDS to the data registry conform to the approved CEC XML schema for each compliance document for which the data are to be used.

Self-Testing Procedures and Summary of Results – Application Appendix A

Appendix A of the CHEERS application summarizes the self-testing procedures used to test each document that uses transmitted data from the EDDS. A list of compliance documents that will use transmitted data from the EDDS is provided. For each document, testing included verification of data input using the EDDS user interface, data transmission from the EDDS to the data registry, and generation of registered compliance documents through the standard procedures of the data registry (including the use of the CEC report generator). The data registry provider and EDDS service provider state that each compliance document has passed self-testing.

Disclosure of EDDS Contractual Agreements – Application Appendix B

Appendix B of the CHEERS application summarizes the executed working agreement between the EDDS service provider Archon Energy Solutions and data registry provider CHEERS. The full working agreement is disclosed in Appendix E of the application.

Data Registry and EDDS User Instructions – Application Appendix C

Appendix C of the CHEERS application contains the data registry user manual for use of the data registry by authorized users. EDDS user instructions are also included for the EDDS software user interface and the data registry user interface for EDDS data input procedures.

The EDDS user instructions are in video format. The user instructions are narrated and demonstrate use of the EDDS service for input of compliance data using the EDDS software user interface, the process for transmitting compliance data between the EDDS and data registry using the data registry user interface, and process for reviewing and signing compliance documents using the data registry user interface.

The data registry provider's digital signature public key is provided so that registered documents produced by the data registry can be tested. The data registry provider states that a data registry username and password will be made available to the CEC to allow staff to test data registry functionality.

Data Registry Provider Statement – Application Appendix D

Appendix D of the CHEERS application contains a statement from the data registry provider stating that all items in the application checklist in section JA7.8.2 that are applicable to the proposed amendment have been submitted.

Working Agreement Between EDDS Service Provider and Data Registry Provider – Application Appendix E

Appendix E of the CHEERS application contains the executed working agreement between EDDS service provider Archon Energy Solutions and CHEERS.

The working agreement indicates the parties involved in the working agreement and certifies that all requirements for data exchange in JA7.7.1.2.1 have been met. It also summarizes the specifications of the proposed EDDS service, including a procedural description of the proposed EDDS service, summary of industry standard security features and best practices utilized by the EDDS service provider and data registry provider, and a summary of the technologies and software used by the EDDS service and data registry. The working agreement is signed by the EDDS services provider and the CHEERS data registry.

EDDS Service Provider Signatures – Application Appendix F

Appendix F of the CHEERS application contains the EDDS service provider signature for the working agreement and signature for certification that the approved CEC XML schema has been made available to the EDDS service provider as needed.

Live Demonstration of the EDDS Features

CHEERS and the EDDS service provider Archon Energy Solutions will perform a live demonstration to staff of the features identified in the EDDS application. This demonstration is part of the acceptance testing procedures for staff to evaluate EDDS and data registry functionality and is a required component of the approval process. The live demonstration will include use of the EDDS and data registry to securely gather and store compliance data, securely transfer compliance data to the data registry, review and revise transmitted compliance data, validate compliance data, and sign and complete registered compliance documentation.

Staff will use the checklist in Table 3 to observe and evaluate the demonstration of each compliance document optioned for EDDS data entry.

Table 3: EDDS Service Live Demonstration Checklist

PASS	Elements	Benchmark/Example
<input type="checkbox"/>	EDDS data capture, storage, and upload security and integrity JA7.7.1.2.1(e)	The user logs into their EDDS user account with username and password before inputting compliance data into the EDDS user interface.
<input type="checkbox"/>	EDDS upload options JA7.7.1.2.1(g)	Compliance data are manually keyed-in by the user using an EDDS service software user interface.
<input type="checkbox"/>	Data entry by authorized user JA7.7.1.2.1(a)	Only the authorized user can initiate the data exchange between the EDDS and data registry.
<input type="checkbox"/>	Data entry by authorized user JA7.7.1.2.1(a)	The authorized user logs into their data registry user account with username and password before initiating data exchange between EDDS and data registry.
<input type="checkbox"/>	Data entry by authorized user JA7.7.1.2.1(a)	The authorized user is limited to using the data exchange feature managed and made available by the data registry user interface.
<input type="checkbox"/>	Data entry by authorized user JA7.7.1.2.1(a)	The authorized user can initiate the data exchange between the EDDS and data registry only while logged into the data registry.

PASS	Elements	Benchmark/Example
<input type="checkbox"/>	Data exchange JA7.7.1.2.1(b)	The authorized user initiates data exchange from the EDDS to the data registry. Data exchange between the EDDS and data registry does not occur through an unattended automatic process.
<input type="checkbox"/>	Data validation JA7.7.1.2.1(h)	Transmitted data from EDDS to the data registry conform to the XML schema for each compliance document for which data are to be used.
<input type="checkbox"/>	Data validation JA7.7.1.2.1(h)	All transmitted data provided to complete compliance documents are subjected to data validation by the data registry software after the data are transmitted to the data registry.
<input type="checkbox"/>	Data validation JA7.7.1.2.1(h)	Transmitted data that do not conform to the XML schema does not pass data registry validation and cannot be used to complete compliance documentation.
<input type="checkbox"/>	Authorized user final review JA7.7.1.2.1(c)	The authorized user is prevented from executing the final signature without an opportunity to review and revise the information transmitted to the data registry.
<input type="checkbox"/>	Produce compliance document JA7.7.1.2.1(h)	The authorized user is able to submit the compliance data from the EDDS data exchange through the data registry system to the report generator and produce a valid, registered compliance document.

Source: California Energy Commission, Standards Compliance Office

CHAPTER 3:

Application Review and Approval Process

Only the registration providers are eligible for the data registry approval process described in JA7.8. The CEC does not directly approve EDDS service providers; they are approved only as part of a registration provider application.

The Energy Code allows two approval paths for the registration provider application: full approval before the CEC at a business meeting or streamlined approval for amendments that are not considered major changes that can be approved by the executive director. The Energy Code defines major changes as changes that 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).

Full Approval

Full approval is required under three conditions:

1. When a registration 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), the registration providers are required to submit an application to the CEC for approval. Full approval ensures the data registry conforms to all applicable requirements for functionality and security in Appendix JA7 including (JA7.8.3.1):
 - a. Capability to produce and manage registered documents (JA7.5).
 - b. Electronic signature capability and manage authorization of users (JA7.6.3.2.1).
 - c. Document data validation (JA7.6.3.2.2).
 - d. Signer review and signature actions (JA7.6.3.2.3).
 - e. Digital signature and digital certificate actions (JA7.6.3.2.4).
 - f. Capability to transmit secured documents and data to the Commission Compliance Document Repository (JA7.6.3.2.5).
 - g. Document retention capability (JA7.6.3.2.6).
 - 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 (JA7.6.3.2.7, JA7.7).
 - i. 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 and revisions to existing data registry for which full approval by the CEC is not required may be approved by the executive director through a streamlined process. Changes that qualify for streamlined approval include minor changes to the data registry document registration procedures, data input specifications and procedures, or registered compliance document output.

Any application for amendment or revision to an existing data registry must be accompanied by a cover letter explaining the type of amendment or revision requested and any applicable documents that are necessary to fully describe and justify the proposed amendment or revision. All items on the application checklist in Section JA7.8.2 that are applicable to the proposed amendment or revision must be submitted. In the context of an amendment to use an EDDS service, the checklist would include all elements as previously described in this document.

When a registration provider application qualifies for streamlined approval:

- (a) The registration provider must notify the executive director in writing to provide a description of the change and the reason for making the change.
- (b) The registration provider must submit an addendum to the user manual describing the changes to the registry.
- (c) The executive director will respond to the registration provider applicant in accordance with the procedures specified in Title 24, Part 1, Section 10-110.
- (d) Upon approval by the executive director, the registration provider may make the modified data registry available for use for registration of compliance documentation.

Milestones and Timeline

The milestones and timeline of the application review (Table 4) are dictated by the requirements in Title 24, Part 1, Section 10-110. The requirements provide five milestones, two of which are optional. Staff must first determine if the application is complete, meaning that all requirements are represented in the application and are sufficient to complete the application review. Once determined to be complete, staff is to post a public notice of the application and initiate a public comment period. Staff must withhold confidential materials from the public notice. Within the public comment period, staff may seek additional information from the registration provider and possibly convene a public workshop. After the public comment period, staff is to develop recommendations regarding the approval of the application, taking into consideration submitted comments and information from the registration provider, interested parties, and the public. The registration provider application will be heard by the CEC at a business meeting for full approval or reviewed by the executive director for approval of an amendment.

**Table 4: Milestones and Timeline for
Staff Review and Possible Approval of Application
(Title 24, Part 1, Section 10-110)**

Milestones	Required Determinations	Prescribed Time Limits	Staff Actions
Application Determined Complete Section 10-110(a)	Staff will determine if an application is complete when all the supporting information required to complete the application review is received.	Within 75 days of receipt of application.	Staff will use a checklist based on the requirements in JA7 to determine if the application is complete. Incomplete applications will result in a deficiency letter from staff identifying the missing compliance elements and resetting the 75-day clock.
Application Public Comment Period Section 10-110(b)	Staff will post the complete application on the CEC website for interested parties to review and comment (except for confidential material).	The comment period will be no less than 15 days and no more than 60 days.	In most cases, staff assumes that the applicant will file for confidentiality to cover all of the application. To make information available for the public comment period, staff will produce a report summarizing the application without revealing any confidential information (this report).
Additional Information Request (optional) Section 10-110(c)	Staff may request additional information needed to evaluate the application. Staff will delay consideration of the application until the applicant submits the requested additional information.	Within 75 days of the application deemed complete.	Staff will issue a request for further information, asking that the applicant perform a live demonstration of the EDDS system or provide additional information regarding any aspect of the application. The 75-day limit applies only to staff and is reset based on the response from the applicant. There is no limit on the amount of time for the applicant to respond. Subsequent requests for information from staff will be limited to the response from the applicant.

Milestones	Required Determinations	Prescribed Time Limits	Staff Actions
Workshop (optional) Section 10-110(d)	Staff may convene a workshop to gather additional information from an applicant and other interested parties. Interested parties will 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 all necessary preparations for a workshop, including the public notice. This is to ensure that the workshop (if held) is on calendar within 75 days following the determination that the application is complete. However, staff may cancel the workshop if it is deemed unnecessary.
Staff Recommendation and Approval	Staff will submit a written recommendation regarding the application to the executive director (Section 10-110[e]).	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 the 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 the full CEC (Section 10-110[f]). Amendment Approval 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 approval (JA7.8.3.2).

Source: California Energy Commission, Standards Compliance Office

APPENDIX A:

Glossary

TERM	DEFINITION
Authorized user	An authorized user is a person who has a user account with a data registry and is required to provide their correct username and password to access the data registry. Data registry users may be required to provide professional licensure, certification or credential information, or other qualifying information as condition of receiving authority to provide signatures for certain types of documentation.
California Energy Commission CEC	The California Energy Commission is the state's primary energy policy and planning agency.
CF1R, CF2R, and CF3R	Compliance documents (forms): certificate of compliance (CF1R), certificate of installation (CF2R), and certificate of acceptance or verification (CF3R). These compliance documents are required to be completed and submitted to the Authorities Having Jurisdiction at various points during the project life cycle.
ConSol Home Energy Efficiency Rating Service, Inc. CHEERS	CHEERS is an approved registry provider under the 2019 Energy Code.
Data Registry	Data registry is a web service with a user interface and database maintained by a registration provider that complies with the applicable requirements in Appendix JA7, with guidance from the Data Registry Requirements Manual, and provides for registration of residential or nonresidential compliance documentation used for demonstrating compliance with Title 24, Part 6.

TERM	DEFINITION
External Digital Data Source 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 outside the data registry as an alternative to the key-in data entry for registering compliance documents.
Energy Code	California Building Energy Efficiency Standards, California Building Code Title 24, Part 1, Chapter 10 and Part 6
Home Energy Rating System HERS	HERS is the California Home Energy Rating System as 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 rating 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.
Joint Appendix JA	A supplementary code to the Building Energy Efficiency Standards.
Registration Provider	A registration provider is an organization that administers a data registry service that conforms to the requirements in Joint Appendix JA7 and may conform to the guidance given in the <i>Data Registry Requirements Manual</i> .

TERM	DEFINITION
Extensible Markup Language Schema XML Schema	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 a determination whether data are required or optional.

APPENDIX B: EDDS Application Checklist

The [EDDS Application Checklist](https://efiling.energy.ca.gov/GetDocument.aspx?tn=234639-2&DocumentContentId=67487) is available on the California Energy Commission Docket 19-HERS-01 (<https://efiling.energy.ca.gov/GetDocument.aspx?tn=234639-2&DocumentContentId=67487>). The checklist is filed under docket number TN234639-2.

APPENDIX C:

List of Compliance Documents that will Utilize Transmitted Data From the EDDS

The following is the list of the residential compliance documents that will utilize compliance data transmitted from the proposed EDDS to the data registry.

Document Name	Document Title
CF1R-ALT-02-E	Alterations to Space Conditioning Systems
CF2R-MCH-01b-E	Space Conditioning System – Prescriptive Alteration
CF2R-MCH-20a-H	Duct Leakage Diagnostic Test – Completely New Duct System
CF2R-MCH-20d-H	Duct Leakage Diagnostic Test – Complete Replacement or Altered Duct System
CF2R-MCH-20e-H	Duct Leakage Diagnostic Test – Sealing Accessible Leaks
CF2R-MCH-22a-H	Space Conditioning System Fan Efficacy – Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor
CF2R-MCH-22b-H	Space Conditioning System Fan Efficacy – Newly Installed Single-Speed Compressor Systems
CF2R-MCH-23a-H	Space Conditioning System Airflow Rate – Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor
CF2R-MCH-23c-H	Space Conditioning System Airflow Rate – Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems
CF2R-MCH-25a-H	Refrigerant Charge Verification – Superheat Method
CF2R-MCH-25b-H	Refrigerant Charge Verification – Subcooling Method
CF2R-MCH-25c-H	Refrigerant Charge Verification – Weigh in Observation Procedure
CF2R-MCH-25f-E	Refrigerant Charge Verification – New Package Unit with Factory Charge
CF3R-MCH-20a-H	Duct Leakage Diagnostic Test – Completely New Duct System
CF3R-MCH-20d-H	Duct Leakage Diagnostic Test – Complete Replacement or Altered Duct System
CF3R-MCH-20e-H	Duct Leakage Diagnostic Test – Sealing Accessible Leaks
CF3R-MCH-22a-H	Space Conditioning System Fan Efficacy – Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor
CF3R-MCH-22b-H	Space Conditioning System Fan Efficacy – Newly Installed Single-Speed Compressor Systems
CF3R-MCH-23a-H	Space Conditioning System Airflow Rate – Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor
CF3R-MCH-23c-H	Space Conditioning System Airflow Rate – Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems
CF3R-MCH-25a-H	Refrigerant Charge Verification – Superheat Method

Document Name	Document Title
CF3R-MCH-25b-H	Refrigerant Charge Verification – Subcooling Method
CF3R-MCH-25c-H	Refrigerant Charge Verification – Weigh in Observation Procedure
CF3R-MCH-25d-H	Refrigerant Charge Verification – Fault Indicator Display