



# Connected Data Specifications (CDS)

LF Energy TAC Meeting annual update for:

- Registration Working Group (WG1)
- Customer Data Working Group (WG3)

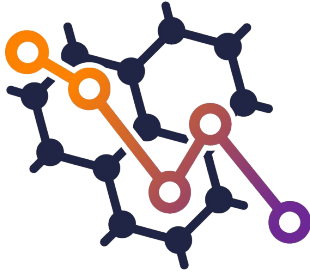
Date: December 9, 2025

Presented by: Daniel Roesler (WG1 & WG3 Maintainer)

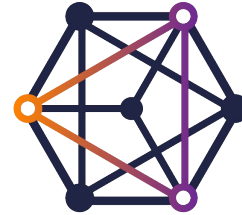
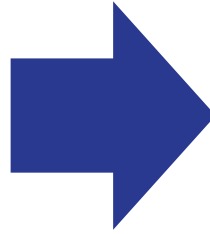
# 2025

## In Review

# Name Change!



**OLFENERGY**  
CARBON DATA SPECIFICATION  
**CONSORTIUM**



**OLFENERGY**  
**CDS**  
(Connected Data Specifications)

# Registration (WG1) - Merged specifications

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## Server Metadata

Looking for a more human-readable summary of this specification? Check out our [overview](#).

Below is a rendering of the original specification source: <https://github.com/lfenergy/standards-specifications/cds-wg1-01.md>

### CDS-WG1-01 - Server Metadata

#### Abstract

This specification defines how utilities and other entities may provide structured "metadata", such as reference information about them, functionality they offer, and how organizations can interoperate with them. The defined base metadata endpoint is intended to act as a starting point for organizations to discover details and capabilities energy utilities and other similar entities.

#### Status

**WARNING:** This specification is a DRAFT and may be changed by the working group.

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- 1. Introduction
- 2. Terminology
- 3. Metadata Endpoint
  - 3.1. Metadata Web Browser (UI)
  - 3.2. Metadata OpenAPI

## CDS-WG1-01 "Server Metadata"

Specifies how utilities and other central entities can publish connectivity capabilities for customers and external orgs

<https://cds-registration.lfenergy.org/specs/cds-wg1-01/>

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## Client Registration

Looking for a more human-readable summary of this specification? Check out our [overview](#).

Below is a rendering of the original specification source: <https://github.com/lfenergy/standards-specifications/cds-wg1-02.md>

### CDS-WG1-02 - Client Registration

#### Abstract

This specification defines how utilities and other central entities ("Servers") may allow external entities ("Clients") to register, configure, and maintain connectivity with the utility or other central entity. This specification extends OAuth 2.0 (RFC 6749) and its related specifications (Dynamic Client Registration (RFC 7591), Authorization Server Metadata (RFC 8446), and others) to create a robust framework for offering secure, streamlined, and standardized connectivity between central entities, such as utilities and energy grid operators, and external entities, such as building owners and energy service providers.

#### Status

**WARNING:** This specification is a DRAFT and has not achieved consensus by the working group.

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- 1. Introduction
- 2. Terminology
- 3. Authorization Server Metadata
  - 3.1. Metadata URL

## CDS-WG1-02 "Client Registration"

Specifies how customers and external orgs can register and connect with utilities and other central entities

<https://cds-registration.lfenergy.org/specs/cds-wg1-02/>

# Customer Data (WG3) - Specification merging soon

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## Customer Data

Looking for a more human-readable summary of this specification? Check out our [overview](#).

Below is a rendering of the original specification source: <https://github.com/daniel-roessler/CDS-Customer-Data/blob/main/specifications/cds-wg3-01.md>

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### CDS-WG3-01 - Customer Data

#### Abstract [↗](#)

This specification defines how utilities and other central entities ("Servers") may allow third parties ("Clients") to access utility account holder data ("Customer Data"), including for use cases that require account holders to authorize the access. This specification extends CDS-WG1-02 ([Client Registration](#)) to add OAuth authorization scopes for Customer Data, as well as defining the APIs used to access Customer Data when authorization is granted.

#### Status [↗](#)

**WARNING: This specification is a DRAFT and has not achieved consensus by the working group.**

#### Copyright [↗](#)

**TODO**

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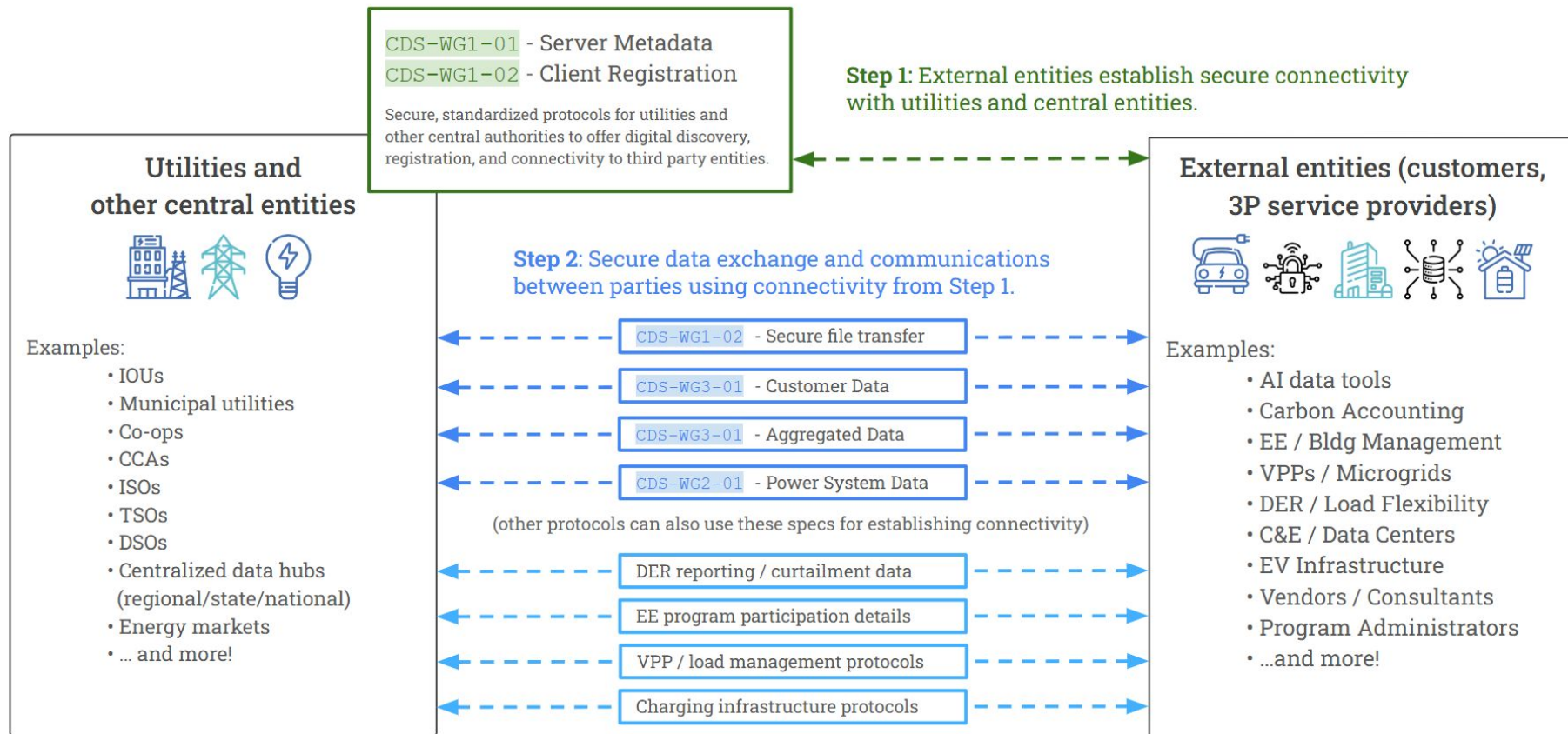
- 1. [Introduction](#)
- 2. [Terminology](#)
- 3. [Authorization](#)
  - 3.1. [Authorization Scopes](#)
  - 3.2. [Defining Requirements for Scope Registration](#)
  - 3.3. [Client Metadata](#)
  - 3.4. [Authorization User Experience](#)

## CDS-WG3-01 "Customer Data"

Specifies how utilities and other central entities can provide secure access to Customer Data (meter usage, bills, account details, etc.).

<https://cds-customerdata.lfenergy.org/specs/cds-wg3-01/>

## LF Energy CDS - Architecture Diagram



# CDS Demo!

**WARNING: This is an experimental website, so things might not work as expected. Please report feedback and bugs to [support@cdsgateway.com](mailto:support@cdsgateway.com).**

CDS Hub Demo   [Public Landing](#)   Your Dashboard

## Welcome to the CDS Demo!

This is a demonstration platform for the LF Energy CDS project.

[Register a new account](#) or [Login](#)

### What are the Connected Data Specifications (CDS)?

The Connected Data Specifications (CDS) are a set of free, open specifications by the Linux Foundation Energy. These specifications define how utilities and other central entities (e.g. ISOs, DSOs, statewide data hubs, etc.) can offer secure, digital, standards-based connectivity to external third party companies and applications.

As the grid evolves and transitions to be clean and flexible, scalable connectivity is required with external third party vendors and technologies to ensure continued grid reliability and stability. The CDS provides a free, open framework of protocols utilities and other central entities can implement to make it easy for third party companies and applications to discover, register, and establish connectivity for the digital communications they need.

Learn more about these specifications: <https://cds.lfenergy.org>

### What is the CDS Demo?

As part of it's support of these open specifications, CDS Gateway has launched a demonstration platform that implement the CDS specifications to show utilities, central grid entities, regulators, governments, and third party service providers how easy it is to use the specifications in practice.

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Are you a utility or central authority that wants secure, standards-based connectivity to third party vendors? Contact [sales@cdsgateway.com](mailto:sales@cdsgateway.com)

Have questions or need support? Contact [support@cdsgateway.com](mailto:support@cdsgateway.com).

[demo.cdsgateway.com](https://demo.cdsgateway.com)

# 2026

## Future Plans



# Plans for 2026 (WG1 & WG3)

- **Finalize specifications and submit to ISO**
  - Achieve LFESS approval for WG1 & WG3 specs
  - Submit the specifications to ISO for formal standardization
- **Launch pilot deployments with multiple utilities**
  - Work with interested utilities and customers to test CDS deployments
  - Iterate specs and implementations based on feedback
- **Start working on open source test suite**
  - Can be used to test CDS deployments for compliance with the specs
  - Enables external testing orgs to support certifying CDS deployments

# Thanks!

CDS main website: [cds.lfenergy.org](https://cds.lfenergy.org)

WG1 website: [cds-registration.lfenergy.org](https://cds-registration.lfenergy.org)

WG3 website: [cds-customerdata.lfenergy.org](https://cds-customerdata.lfenergy.org)

(our mailing lists and meeting calendars are on each website)

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