

Energy data model

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Agenda

- Why is energy prioritized?
- Energy model introduction
- Energy data model overview
- Demo scenario
- Energy data model deployment
- What's next
- Q&A

Problem statement



Energy is often the first and most important area that companies prioritize to kickstart their sustainability journey.



Governments and regulatory bodies are implementing stricter standards, requiring companies to prioritize energy reduction and renewable energy targets.



Emissions impact across energy generation and procurement are extremely important for majority of customers to support their renewable energy goals.



Companies recognize that focus on energy provides multidimensional benefits, including cost savings, environmental responsibility, regulatory compliance, and enhanced stakeholder relationships.



All these other areas of the energy lifecycle are critical for customers that are not supported within Microsoft Sustainability Manager.

Use cases for the sustainability energy data model



Report energy quantity for facilities and org-wide to meet regulatory disclosures.



Monitor performance against net zero-carbon goals.



Track energy generation, procurement / transmission, end-use and reduction across facilities and at an org-level.



Report on renewable energy generation, procurement and usage to meet energy reduction/renewable energy targets to meet internal targets / external disclosures.



Introducing the energy data model



Overview

- Expanding the Microsoft Cloud for Sustainability data model to include the energy data model
- Provides entities to unify, standardize, and streamline energy data collection and storage for your organization across generation, procurement, and end use into a single unified data model.



Customer value

- Unify energy measurement data from sites and data sources into an energy sustainability data model
- Store and link energy sustainability metadata required for sustainability use-cases
- Validate the energy sustainability data model for integration opportunities



User personas

- Data Engineer
- Energy engineer
- Sustainability Specialist
- Sustainability Manager



Feature overview

- Entities to store energy generation data based on generation source.
- Entities to store renewable energy data along with validation through contractual agreements.
- Entities to store energy sustainability metadata such as energy source type, generation type, renewable energy structures and energy attribution.

Energy data model overview

Energy Generation Entities

Energy Generation Measurement
Data

Energy Generation Quantity
Metadata
(E.g., generation type, source type, generation
quantity, source quantity)

Energy Procurement Entities

Energy Procurement Measurement
Data

Energy Procurement Metadata
(E.g., energy contract type, PPA, REC,
renewable energy quantity,)

Purchased Energy Entities

Purchased Energy Measurement
Data

Purchased Energy Metadata
(E.g., data source, meter, purchased energy
quantity)

Common Entities shared with Cloud for Sustainability data model

Account

Facility

Geographic Area

Organizational Unit

Demo Scenario

- Contoso is a consumer goods manufacturing organization with five manufacturing facilities in the US.
- Each facility uses energy to support their operations. Two facilities have rooftop solar to generate onsite energy and facility power.
- Contoso has a goal to reduce their energy consumption and power their operations with 100% renewable energy by 2030.
- Contoso wants to prepare its energy disclosure reports.
- Contoso wants to use MSM to record energy consumption across all their facilities, monitor renewable energy progress, and track energy generation for two of its facilities.

Deployment

- Deploy energy sustainability data model
- Populate facility information

Data Entry

- Populate energy meta data such as energy type, source type, generation type, data source etc.
- Enter energy generation and consumption measurement data

Deployment

Step 1: Sustainability manager goes to Microsoft cloud [solution center](#) and deploys the Cloud for Sustainability energy data model.

The screenshot displays the Microsoft Cloud Solution Center interface. The top navigation bar includes the Microsoft logo and the text "Microsoft Cloud Solution Center". A left-hand sidebar contains a menu with options: Home, Deployment manager, Support, Industry Clouds, Financial Services, Healthcare, Nonprofit, Retail, and Sustainability (which is currently selected). The main content area is titled "Microsoft Cloud for Sustainability" and includes a brief description: "Microsoft Cloud for Sustainability provides capabilities to help accelerate your sustainability progress through automated data connections and actionable insights that allow you to record, report and reduce your environmental impact." Below this, there is a checkbox labeled "Add all Microsoft Cloud for Sustainability". Three data model cards are displayed in a row: "Cloud for Sustainability data model", "Cloud for Sustainability waste data model", and "Cloud for Sustainability water data model". Each card contains a description and an "Add" button. Below these cards, a section titled "Available previews" states: "These Microsoft Cloud for Sustainability solutions are available now for feature preview. Preview features are not complete but are offered to customers who want to evaluate them and provide feedback about them to Microsoft. See how previews differ from general availability solutions". The "Cloud for Sustainability energy data model" card is highlighted with a red border and includes a "Public Preview" badge. Its description reads: "Unify, standardize and streamline energy data collection and storage, encompassing generated energy, renewable energy, and purchased energy from different sources, along with associated consumption patterns across multiple sites and geographic components, within a unified data model." Each card also features a "Quick view" link and an "Add" button.

Microsoft Cloud for Sustainability

Microsoft Cloud for Sustainability provides capabilities to help accelerate your sustainability progress through automated data connections and actionable insights that allow you to record, report and reduce your environmental impact.

Add all Microsoft Cloud for Sustainability

Cloud for Sustainability data model

Break down data silos across emissions sources and centralize disparate emissions data.

[Quick view](#) Add

Cloud for Sustainability waste data model

Standardize and store waste data such as generated quantity by composition/category and their associated disposal method from sites across your organization using a single data model to help meet net zero sustainability goals.

[Quick view](#) Add

Cloud for Sustainability water data model

Unify water measurement data from sites across your organization using a single data model to help meet sustainability goals.

[Quick view](#) Add

Available previews

These Microsoft Cloud for Sustainability solutions are available now for feature preview. Preview features are not complete but are offered to customers who want to evaluate them and provide feedback about them to Microsoft. [See how previews differ from general availability solutions](#)

Cloud for Sustainability energy data model

Public Preview

Unify, standardize and streamline energy data collection and storage, encompassing generated energy, renewable energy, and purchased energy from different sources, along with associated consumption patterns across multiple sites and geographic components, within a unified data model.

[Quick view](#) Add

Deployment


Step 2: Then select the Dataverse environment to which the energy data model needs to be deployed.

← Set up solution

- Select a deployment environment
- Power Platform Environment
- Deployment Summary**
- Required configurations
- Deploy the solution
- Success

Step 2: Deployment summary and nickname

You've selected the following solutions for deployment, which will be deployed on the environments listed. Give this group of solutions a deployment nickname.

Solution Name	Environment	Description
 Cloud for Sustainability energy data model	Power Platform Environment	Unify, standardize and streamline energy data collection and storage, encompassing generated energy. See more

Name this new deployment for easy management ⓘ

Terms of service

I acknowledge that I have read and agree to the [Terms of service](#)

Back Next Cancel

Energy data model entities

Step 3: View all the entities within the sustainability energy data model along with the required and optional attributes.

The screenshot shows the Power Apps interface for a solution named 'Cloud for Sustainability Energy Data Model'. The left-hand navigation pane is expanded to show 'Tables (9)', with a list of table names including Account, Agreement details, Energy contract, Energy contract type, Energy Source, Generated Energy, Purchased energy, Renewable Energy Certif..., and Utility type. The main content area displays a table of these tables with the following columns: Name, Type, Managed, Customizable, and Tags.

Table	Name	Type	Managed	Customizable	Tags
Account	account	Standard	Yes	Yes	Core
Agreement details	msdyn_agreementdetails	Standard	Yes	Yes	Standard
Energy contract	msdyn_energycontract	Standard	Yes	Yes	Standard
Energy contract type	msdyn_energycontracttype	Standard	Yes	Yes	Standard
Energy Source	msdyn_energysource	Standard	Yes	Yes	Standard
Generated Energy	msdyn_generatedenergy	Standard	Yes	Yes	Standard
Purchased energy	msdyn_purchasedenergy	Elastic	Yes	Yes	Standard
Renewable Energy Certificate	msdyn_renewableenergyc...	Standard	Yes	Yes	Standard
Utility type	msdyn_utilitytype	Standard	Yes	Yes	Standard

Energy data model attributes

Sample entity table below with the attributes for reference

The screenshot displays the Microsoft Power Apps interface for configuring a table named 'Energy contract'. The interface includes a left-hand navigation pane with 'Objects' selected, showing a search bar and a list of object types: All (9), Apps (0), Cards (0), Chatbots (0), Cloud flows (0), and Tables (9). The main workspace shows the 'Energy contract' table configuration with the following properties:

Table properties		
Name	Primary column	Description
Energy contract	Name	Documented method/approach to source energy.
Type	Last modified	
Standard	5 days ago	

Below the table properties, the 'Energy contract columns and data' section is visible, showing a list of columns with filters like 'Created By', 'Created On', 'Created By (Delegate)', 'Import Se...', 'Modified By', and 'Modified On'. A '+28 more' dropdown is present. A 'Show existing column' dialog is open, displaying a search bar and a list of existing columns with checkboxes:

- Contractual instrument type
- Cost
- Cost unit
- Emission factor
- Energy contract *
- Energy provider *
- Energy source *
- Expiry date *
- Facility
- Geographic area

The dialog also includes 'Save' and 'Cancel' buttons at the bottom.

Import data

Step 4: Import energy specific data for any of the entities either using manual forms, Excel or available Power Query connectors.

The screenshot displays the Microsoft Power Apps interface for configuring a table. The top navigation bar includes 'Power Apps', a search bar, and the environment 'Test Summit'. The left sidebar shows the 'Objects' pane with a search bar and a list of objects, including 'Tables (9)' with 'Energy contract' selected. The main area shows the configuration for the 'Energy contract' table. A yellow warning banner states: 'You cannot directly edit the objects within a managed solution. If the managed properties for solution c... n, you can edit them from another unmanaged solution.' Below this, the 'Import data' and 'Import data from Excel' options are highlighted with a red box. The table configuration is divided into several sections: 'Table properties', 'Schema', 'Data experiences', and 'Customizations'. The 'Table properties' section includes a table with the following data:

Name	Primary column	Description
Energy contract	Name	Documented method/approach to source energy.
Type	Last modified	
Standard	6 hours ago	

The 'Schema' section includes 'Columns', 'Relationships', and 'Keys'. The 'Data experiences' section includes 'Forms', 'Views', 'Charts', and 'Dashboards'. The 'Customizations' section includes 'Business rules' and 'Commands'. Below these sections, the 'Energy contract columns and data' section is highlighted with a red box. It shows a table with the following columns: 'Created By', 'Created On', 'Created By (Delegate)', 'Import Se...', and 'Modified By'. A '+28 more' dropdown is visible on the right side of the table.

Data connectors

Step 5: Select the available data connectors to import the data, configured as per the data model structure. Import the data, map the attributes and publish.

The screenshot displays the Power Apps interface with a 'New source' dialog box open. The dialog is titled 'Get data' and 'New source'. It features a search bar and a grid of data connectors categorized by type: File, Database, Microsoft Fabric, Power Platform, Azure, and Online services. The connectors include:

- Excel workbook (File)
- Text/CSV (File)
- XML (File)
- JSON (File)
- Folder (File)
- PDF (File)
- Parquet (File)
- SharePoint folder (File)
- SQL Server database (Database)
- Access (Database)
- SQL Server Analysis Services (Database)
- Oracle database (Database)
- IBM Db2 database (Database)
- MySQL database (Database)
- PostgreSQL database (Database)
- Teradata database (Database)
- SAP HANA database (Database)
- SAP BW Application Server (Database)
- SAP BW Message Server (Database)
- Snowflake (Database)
- Google BigQuery (Database)
- Amazon Redshift (Database)
- Impala (Database)
- Dataflows (Microsoft Fabric)
- KQL Database (Microsoft Fabric)
- Dataverse (Power Platform)
- Dataflows (Power Platform)
- Azure SQL database (Azure)
- Azure Synapse Analytics (Azure)
- Azure Analysis Services (Azure)
- Azure Blobs (Azure)
- Azure Tables (Azure)
- Azure Data Explorer (Kusto) (Azure)
- Azure Data Lake Storage (Azure)
- Azure HDInsight Spark (Azure)
- SharePoint Online list (Online services)
- Microsoft Exchange Online (Online services)
- Salesforce objects (Online services)
- Salesforce reports (Online services)
- Google Analytics (Online services)
- Adobe Analytics (Online services)
- Web API (Other)
- Web page (Other)
- SharePoint list (Other)
- OData (Other)
- Spark (Other)
- Odbc (Other)
- FHIR (Other)
- Blank table (Other)
- Blank query (Other)

The background shows the Power Apps environment with a table named 'Energy contract' selected. The interface includes a search bar, navigation icons, and a 'Cancel' button at the bottom right of the dialog.

Data connectors

Step 6: View the imported data within maker portal for any of the data model entities. Users can also edit the table, add new rows and delete existing ones.

The screenshot shows the Power Apps maker portal interface. The top navigation bar includes 'Power Apps', a search bar, and environment information ('Environment: Test Summit'). The left sidebar shows navigation options like 'Back to solutions', 'Cloud for Sustainability ...', 'Overview', 'Objects', and 'History'. The main area displays the 'Agreement details' table within the 'Cloud for Sustainability Energy Data Model'.

Table properties:

Name	Primary column	Description
Agreement details	Name	Binding agreement between the energy provider and the customer for the energy being sourced or procured.
Type	Last modified	
Standard	5 days ago	

Agreement details columns and data:

Created By	Agreement details	Expiry date	Name	Owner	Owning Business Unit	Quantity	Quantity unit
# Tafazzul Khan	42a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	3,540.00	kWh
# Tafazzul Khan	43a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	5,430.00	kWh
# Tafazzul Khan	44a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	5,240.00	kWh
# Tafazzul Khan	45a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	7,774.00	kWh
# Tafazzul Khan	46a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	6,745.00	kWh
# Tafazzul Khan	47a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	1,540.00	kWh
# Tafazzul Khan	48a03987-fe07-ef11-9f8a-000d3a...	12/31/2022 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	9,832.00	kWh
# Tafazzul Khan	49a03987-fe07-ef11-9f8a-000d3a...	12/31/2021 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	2,540.00	kWh
# Tafazzul Khan	4aa03987-fe07-ef11-9f8a-000d3a...	12/31/2022 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	10,861.00	kWh
# Tafazzul Khan	4ba03987-fe07-ef11-9f8a-000d3a...	12/31/2022 12:00 AM	PPA electricity	# Tafazzul Khan	org8c12f926	12,919.00	kWh

+ 10 additional rows

Add more rows

What's next?

Adopt the Microsoft Cloud for Sustainability approach

Prioritize the utilization of the energy data model to ensure comprehensive coverage across all areas.

Gather input and feedback on the energy data model components

Identify potential enhancements or adjustments across the energy lifecycle entities.

Incorporate the data model components into MSM

Allows for ingestion, calculation, and reporting of energy data.

Empower customers

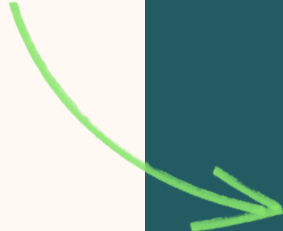
Generate insights on key metrics spanning energy generation, procurement, and conservation.

Refine and Improve

Continue to improve the overall user experience for current and future needs of customers.



Thank you!



→ How was the Summit? Share your feedback!
aka.ms/MCfSTSFeedback

→ Learn more about the energy data model
[Overview of the Energy Data Model](#)

→ Join the Sustainability Community!
aka.ms/MCfSCommunity

→ Learning Resources
aka.ms/CloudforSustainabilityLearnCollection



Q&A

Please type your questions **in the chat** and we will answer them during the Q&A session.

