

Microsoft Cloud for Sustainability in a Day

Lab 04: Insights and reporting

Step-by-Step Lab

45 minutes

April 2023

Contents

Overview	3
Background	
Learning Objectives	
Prerequisites	3
Solution Focus Area	
Personas and Scenarios	4
Exercise 1: Sustainability Dashboards	5
Task 1: Explore Sustainability Dashboards	6
Exercise 2: Generate Quantitative preparation report	
Task 1: Generate emissions report	16
Task 2: Generate activity report	19

Overview

Background

In the previous lab, the ingested Activity data was taken through calculation designs using calculation models and the output was reviewed in terms of CO_2E unit. In this lab, we will perform a set of activities to generate emissions reports, activity reports, and review Power BI dashboards.

Finally, this lab will help us gain insights into the emission activity trends and identify the opportunities to set scorecards and carbon reduction goals that are detailed in the next lab.

Learning Objectives

In this lab, you will do the following:

- Analyze various Sustainability Dashboards
- Generate Emissions Report
- Generate Activity Report
- Review Power BI Insights

Prerequisites

- Microsoft Sustainability manager environment is set up with sample data
- Lab 01 organization and reference data is entered
- Lab 02 activity data is ingested
- Lab 03 emissions are calculated

Solution Focus Area

Analytics reports present calculated emissions in an organized way to detect trends and perform further exploration of data. These reports are updated soon (within approximately 30 minutes) after the calculations are run and allow the users to review the outcome of calculations in an aggregated format. Data can also be exported in predefined report formats that include groupings for emissions and activity, and other dimensions. These formats can be used to do deeper analysis and prepare many different types of reports.



Personas and Scenarios

In this lab, Amber Rodriguez – Sustainability specialist for Contoso Corp reviews the data in the Insights section of Microsoft Sustainability Manager, noticing that Wide World Importers was a large contributor to Scope 2 emissions in 2022. Amber informs Jessie Irwin - Sustainability lead for Contoso Corp that the Activity and Emission Reports are available for review. Jessie opens the reporting section and creates a new Activity report and a new Emissions report. Jessie reviews the generated report and includes the report in the sustainability reporting procedures for Contoso Corp.



Sustainability Lead

"I provide the requested data from my department to our sustainability team partners"

Jessie Irwin
Contoso Corp



Sustainability Specialist

"I am responsible for all emissions reporting tasks at my company"

Amber Rodriguez
Contoso Corp



Emissions Analyst

"I analyze emissions data & send results of analyses to other stakeholders"

Alex Serra
Wide World Importers



IT Admin

"I'm involved in collecting emissions data and inputting it into our database."

Reed Flores
Wide World Importers

In this lab exercise, we will focus on the scenarios illustrated below:



Amber & Jessie introduce Sustainability Manager to Alex and then asks them to fill out the Inventory Plan. Alex does the scoping and with Reed's help, starts setting up the Wide World Importers Organization data and Reference Data.



Reed uses the data connectors to import the excel spreadsheet Alex gave them for 1) Electricity Purchased for all of Year 2021 2) Miles driven by Fabrikam Electric Trucks.



Alex sets up the Factor Mappings for Purchased electricity and a Factor Library for Miles driven by Electric Vehicles including the Calculations. They then set up calculation profiles for Purchased electricity for facilities, and Miles driven by Electric Vehicles Lab 4



Amber validates and reviews the data in the Insights section and tells Jessie that the Wide world data is available for them to review. **Jessie** opens the Reporting section to create a new Emissions report.



Amber goes into the Scorecards section to set up goals for Wide World Importers to reduce their carbon emissions to 600 mtCO2e by end of 2025.

Set up Organization and Reference Data Ingest Emissions Activity Data

Design Calculation
Models and Jobs

Build Reports and gather Insights

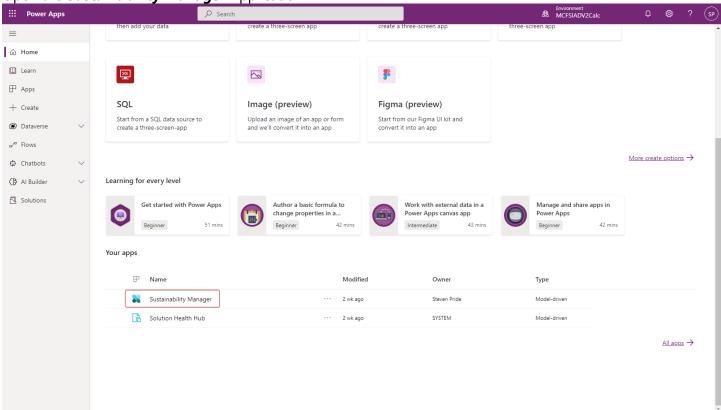
Reduction Goals and Scorecards

Exercise 1: Sustainability Dashboards

In this exercise, you will take on the persona of Amber Rodriguez – Sustainability Specialist for Contoso Corp. utilizing the various Sustainability Dashboards to gain insights into the organization.

Log in to your Cloud for Sustainability environment at https://make.powerapps.com

Open the **Sustainability Manager** Application



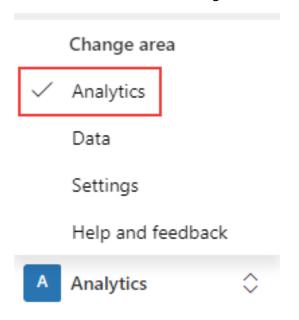
Important

Please make sure that you have completed the previous labs to ensure that the dashboards and reports show meaningful data.

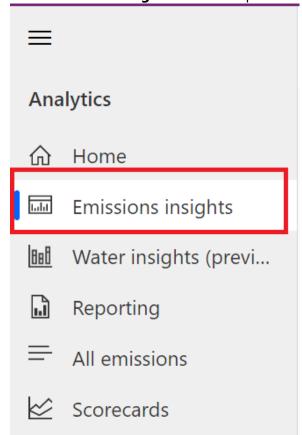
Task 1: Explore Sustainability Dashboards

In this task, Amber explores the various **Sustainability** dashboards which provide an overview of total emissions, revenue intensity, and renewable energy broken down by scope, geography, organizational unit, and facility.

1. In the bottom left corner, change the Area to **Analytics.**



2. Select **Emission Insights** on the left pane.



3. The page displays the **Emissions overview** dashboard, the dashboard is filtered by selecting a reporting period and accounting method. The top tile in the dashboard has three tabs: Emissions, Emissions by scope, and Emissions by scope (line chart). Each tab has a toggle that is used to **show a comparison by year**. When the toggle is off, data for the selected reporting period is shown in a monthly view. When the toggle is on, all available years are shown on a trend chart.

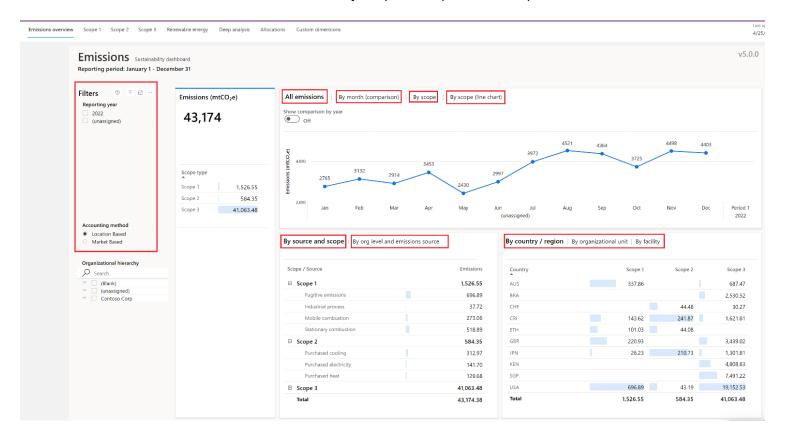
The details around each of the tabs in the top tile are as follows:

- All Emissions This tab shows total emissions over time.
- By month (comparison) This tab shows the emissions breakdown by each month to compare.
- By scope This tab shows a breakdown of emissions by scope 1, scope 2, and scope 3. It includes
 a chart for each scope.
- By scope (line chart) This tab shows each scope as a separate line on one chart. Therefore, you can easily compare emissions by scope over time.

The **By source and scope** tile at the bottom shows a further breakdown of data in each scope. It shows specific sources and their contribution to emissions overall.

The **By org level and emissions source** tab shows the breakdown of the emissions based on the organization level and emission source.

The tile at the bottom right has three tabs: **By country/region**, **By organizational unit**, and **By facility**. Each tab shows a breakdown of emissions by scope 1, scope 2, and scope 3.



4. Select **Scope 1** on the top tab to view the Scope 1 emissions dashboard. Scope 1 emissions are emissions that are owned or directly controlled by the organization. Like the Emissions overview, the **Scope 1 emissions** dashboard lets users view scope 1 emissions by reporting period.



Summary statistics can be viewed in the left tile. These statistics include the total scope 1 emissions for the current reporting period compared to the previous period. They also include emissions by source type and emissions broken down by greenhouse emissions. Greenhouse emissions include the following gases:

- **CO₂** Carbon dioxide
- **CH**₄ Methane
- **N₂O** Nitrous oxide
- **HFCs** Hydrofluorocarbons (that is, manufactured compounds that contain hydrogen and fluorine atoms)
- **PFCs** Perfluorocarbons (that is, manufactured compounds that contain carbon and fluorine atoms)
- **NF**₃ Nitrogen trifluoride
- **SF**₆ Sulfur hexafluoride

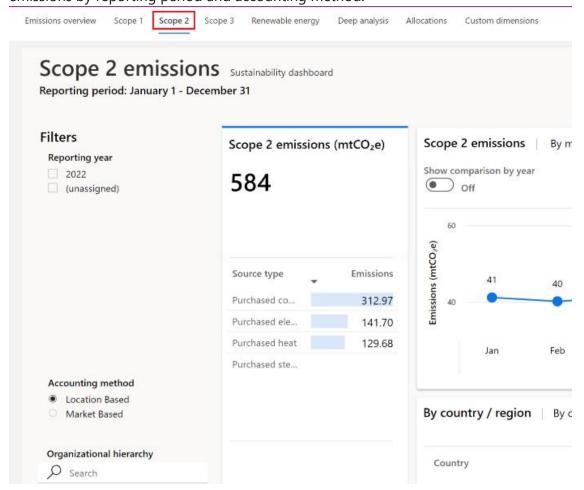
The top tile has four tabs: **Scope 1 emissions**, **By month (comparison)**, **By source**, and **By source** (**line chart**). Apart from the **By month (comparison)** tab, all other tabs has a toggle that you can use to show a comparison by year. When the toggle is off, data for the selected reporting period is shown in a monthly view. When the toggle is on, data for all reporting periods is shown on a trend chart.

The bottom-left tile provides a deeper dive into the source of the scope 1 emissions by category. It has a tab for each category of scope 1 emissions:

- **Stationary combustion** This category includes emissions from electricity, heat, steam, or energy to power industrial or commercial uses. The tab shows emissions by fuel type.
- **Mobile combustion** This category includes emissions from cars, trucks, and other motor vehicles; boats and other water vessels; locomotives; and aircraft. The tab shows emissions by vehicle type.
- **Industrial processes** This category includes emissions from various non-energy-related industrial events or manufacturing activities, or from consumers. The tab shows emissions by process type.
- **Fugitive emissions** This category includes emissions that were accidentally released into the atmosphere. These emissions include gases and vapors. The tab shows emissions by activity type.

The bottom-right tile has three tabs: **By country/region**, **By organizational unit**, and **By facility**. Each tab shows scope 1 emissions for the corresponding delineation of data.

5. Select **Scope 2** on the top tab to view the Scope 2 emissions dashboard. Scope 2 are emissions that a company causes indirectly when the energy it purchases and uses. For example, for Wide World electric fleet vehicles the emissions from the generation of the electricity they're powered by would fall into this category. Just as with other dashboards, the **Scope 2 emissions** dashboard lets users view scope 2 emissions by reporting period and accounting method.



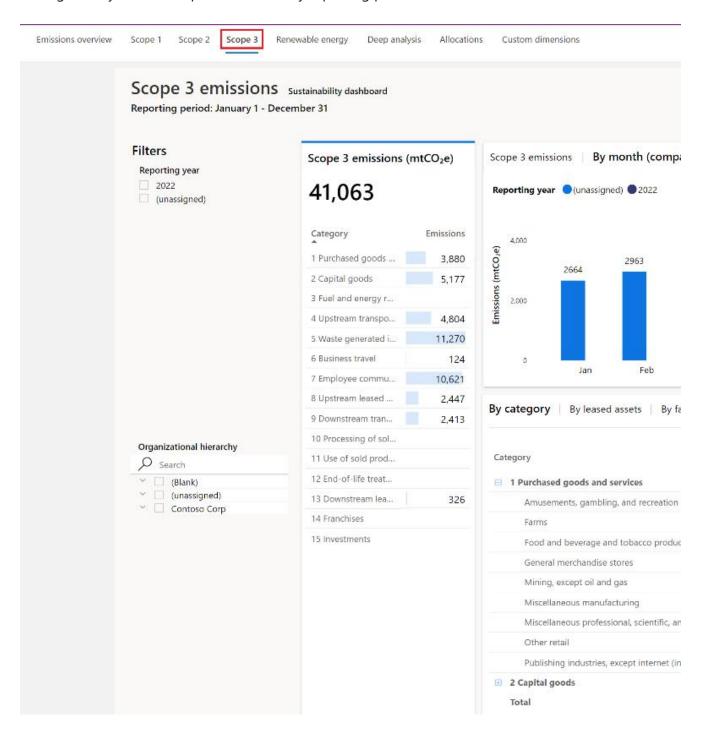
The summary statistics can be viewed in the left tile. These statistics include the total scope 2 emissions for the selected reporting period compared to the previous period. They also include scope 2 emissions by source. Scope 2 emissions have the following sources:

- Purchased heat
- Purchased cooling
- Purchased electricity
- Purchased steam

The top tile has four tabs: **Scope 2 emissions**, **By month (comparison)**, **By source**, and **By source** (**line chart**). Apart from the **By month (comparison)** tab, all other tabs has a toggle that you can use to show a comparison by year. When the toggle is off, data for the reporting period is shown in a monthly view. When the toggle is on, data is shown for all available reporting periods.

The bottom tile has three tabs: **By country/region**, **By organizational unit**, and **By facility**. Each tab shows scope 2 emissions for the corresponding delineation of data.

6. Select **Scope 3** on the top tab to view the Scope 3 emissions dashboard. Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts its value chain. Scope 3 emissions include all sources not within an organization's scope 1 and 2 boundary. The **Scope 3 emissions** dashboard in Microsoft Sustainability Manager lets you view scope 3 emissions by reporting period.



Summary statistics can be viewed in the left tile. These statistics include the total scope 3 emissions for the reporting period compared to the previous period. The tile also shows all categories of scope 3 emissions classified as either upstream or downstream. Scope 3 emissions have the following fifteen categories.

Upstream

- Purchased Goods and Services
- Capital Goods
- Fuel and energy related activities
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets

Downstream

- Downstream transportation and distribution
- Processing of sold products
- Use of sold products
- End-of-life treatment of sold products
- Downstream leased assets
- Franchises
- Investments

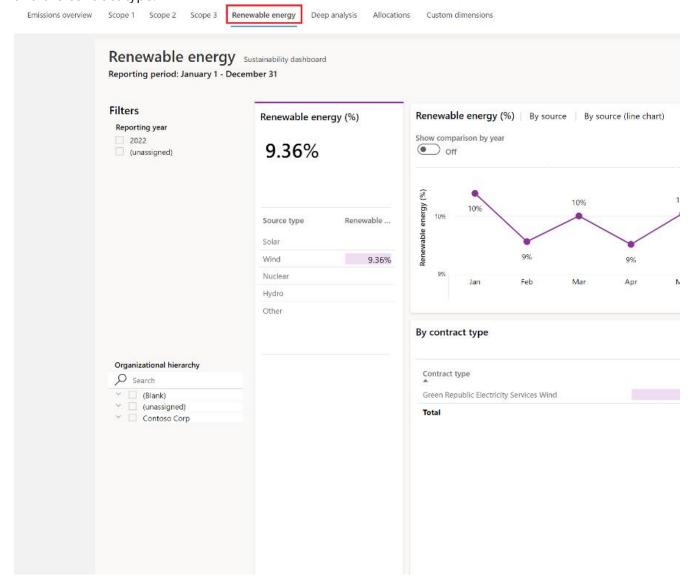
The top tile has four tabs: **Scope 3 emissions**, **By month (comparison)**, **By category**, and **By category** (**line chart**). Apart from **By month (comparison)** tab, all other tabs has a toggle that you can use to show a comparison by year. When the toggle is off, data for the selected reporting period is shown in a monthly view. When the toggle is on, the data that is shown represents all available reporting periods.

The bottom-left tile has five tabs:

- **By category** This tab shows scope 3 emissions by category and type.
- **By leased assets** This tab shows the scope 3 emissions by the leased assets and type.
- **By facility type** This tab shows the emissions by the facility type and category.
- **By supplier** This tab shows the number of records and emissions by supplier.
- **By waste** This tab shows the emissions due to the waste generated in operations.

The bottom-right tile has three tabs: **By country/region**, **By organizational unit**, and **By facility**. Each tab shows scope 3 emissions for the corresponding delineation of data.

7. Select **Renewable energy** on the top tab to view the summary view of renewable energy, its sources, and the contract type.



The summary statistics can be viewed in the left tile. These statistics include renewable energy as a total percentage of energy that was used for the selected reporting period compared to the previous period. The tile also shows the percentage of renewable energy by source type, such as solar, wind, and water. This tile has three tabs: **Renewable energy**, **By source**, and **By source** (**line chart**). Each tab has a toggle that you can use to show a comparison by year. When the toggle is off, data for the selected reporting period is shown in a monthly view. When the toggle is on, data is shown for all reporting periods.

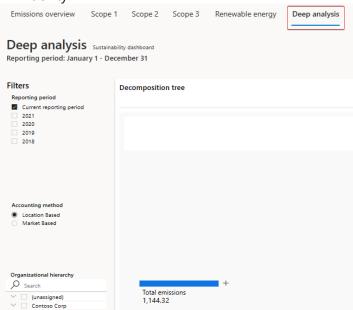
The bottom-left tile shows **By contract type**. It indicates the renewable energy in the appropriate measure, such as kilowatt-hour (kWh), and the percentage of renewable energy.

The bottom-right tile has three tabs: **By country/region**, **By organizational unit**, and **By facility**. Each tab shows renewable energy for the corresponding delineation of data.

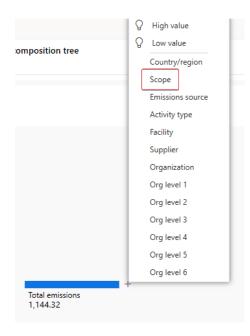
8. Select **Deep analysis** on the top tab to dive deeper into data and uncover insights that might not be available from other reports. The dashboard can be filtered by selecting a reporting period and accounting method.

The **Decomposition tree** can be used to drill down from the company-level to more granular levels of the organization, and to access

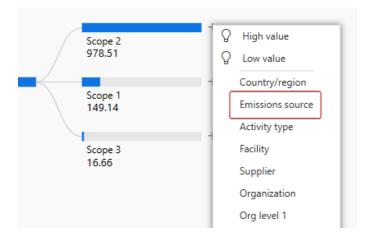
- High value
- Low value
- Emission source
- Country/region
- Organization
- Different levels of scope 1, scope 2, and scope 3 emissions.
- Facility



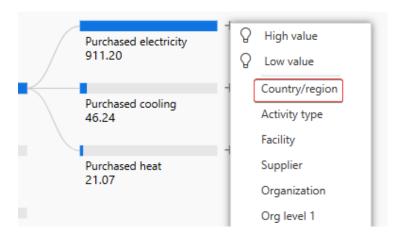
9. Amber drills into our decomposition tree to identify where our high sources of emissions are. **Click the** + next to Total emissions, and select Scope



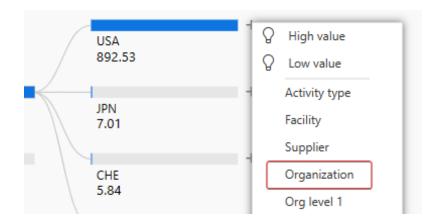
10. Amber can see that Scope 2 has the largest volume of emissions. **Click the + next to Scope 2**, **and select Emission source** to identify which Scope 2 emission source is biggest contributor



11. It seems that Purchased electricity was the biggest contributor of emissions. **Click the + next to Purchased electricity and select Country/region** to identify which regions were contributing to the large Purchased electricity emissions.



12. The USA contributed the most to the Purchased Electricity emissions. The Country/Region selection is driven by the country region mapping table found in the Settings area. **Click the + next to USA and select Organization** to see which organizations contributed to this.



13. Wide World Importers was the largest contributor to Contoso Corp's carbon emissions. Amber uses this information to create a goal for Wide World Importers to reduce their Purchased electricity emissions by 300 mtCO₂E (In the next Lab)

Decomposition tree



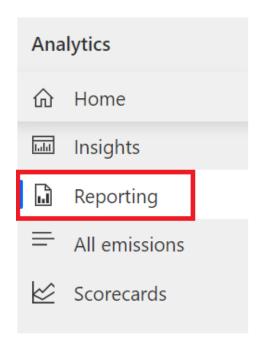
Great job, you have successfully explored various Sustainability dashboards. You can use these dashboards to gain insights into your emissions data. You can see as we drilled down from total emissions to the organization level, we were able to determine that Wide World Importers needs to reduce the carbon emissions from Purchased electricity. This could be achieved in a variety of ways such as switching to renewable energy sources or using more energy efficient devices and vehicles. You can use these insights to drive business decisions and use the information to create scorecards and goals to track your progress. **Please continue to the next task.**

Exercise 2: Generate Quantitative preparation report

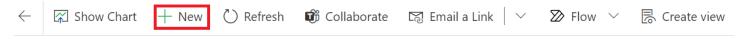
In this exercise, Amber Rodriguez informs Jessie Irwin - Sustainability lead for Contoso Corp that the Activity and Emission Reports are available for review. Jessie generates quantitative preparation reports that extract emission and activity data from Microsoft Sustainability Manager. The reports are in an Excel format that can be used to submit the data for public disclosure.

Task 1: Generate emissions report

1. In the left navigation pane, select **Reporting**.



2. Select New.



Active reports ~

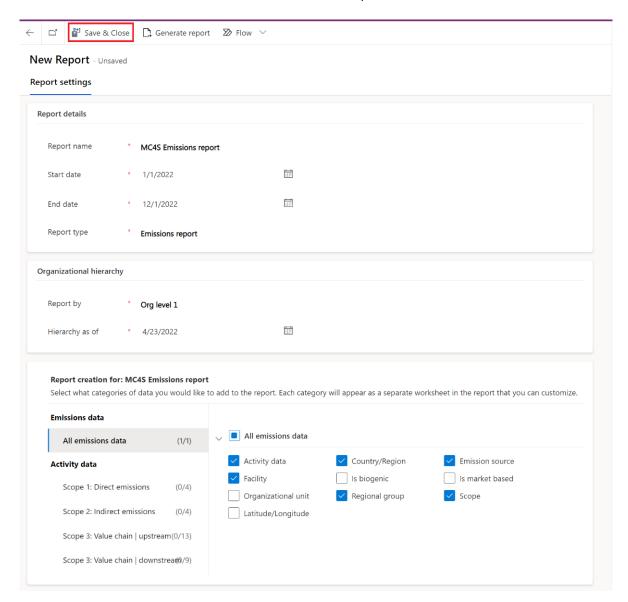
- 3. Set the following fields:
 - Name Enter the name of the report. For example: MC4S Emissions report
 - Report type Select Emissions report.
 - **Start date** 01/01/2022
 - o **End date** 12/31/2022
 - o Report by Org level 1
 - Hierarchy as of 04/23/2022

Fields can be selected to group data by, or column headers for the report. The available fields for Emissions report are **Activity data**, **Country**, **Region**, **Latitude/Longitude**, **Organization unit**, **Facility**, **Is market-based**, **Is biogenic**, **Scope**, **Emission source**.

The **Organization hierarchy** section in the page is visible for inputs if user selects the Report type as Emissions report. This information entered in this section is used to report the data based on the org hierarchy and the **Hierarchy as of** date field for data till the org hierarchy

 For this task, Jessie will just set Country/Region, Regional group, Facility, Scope, Emissions source, and Activity data for use in Contoso Corp's carbon emissions reporting for public disclosure.

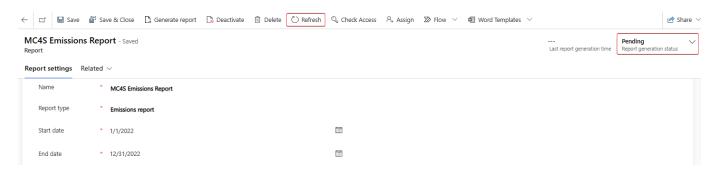
Once these are selected. Select **Save & Close** on the top command bar.



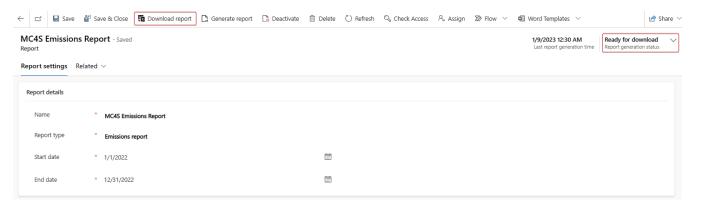
4. Once the report is saved, the **Generate report** button will be visible on the command bar. **Select Generate report** and then the report is queued to be generated.



5. Select **Refresh** button on the command bar until the **Report generation status** is changed from **Pending** to **Ready for download.** This may take a few minutes to generate.



6. Once the status is changed, a button **Download report** is visible in the command bar. Select that button to download the generated report. An Excel report begins to be downloaded. Open the report.



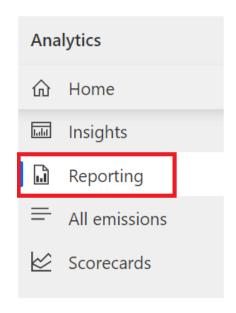
- 7. The reports contain the following information:
 - The **Group by** column headers that were selected. In this case, it is grouped by Country/Region, Regional group, Facility, Scope, Emissions source, and Activity type
 - The following emission metrics: CO2, CH4, N2O, SF6, NF3, CO2E, HFCs, PFCs, and Other GHGs.



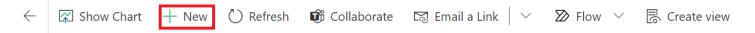
Great job, you have successfully generated an emissions report. Emissions reports are useful for providing information in public disclosures. Microsoft Sustainability provides this information in a tabular format to allow you to adapt it to meet the rapidly changing regulatory requirements. There is a great opportunity for **partners** to assist in the generation of the disclosure documents by configuring an emissions report to export data in a consistent and familiar format for ingestion into a **partner** solution. **Please continue to the next task.**

Task 2: Generate activity report

1. In the left navigation pane, select **Reporting**.



2. Select **New**.



Active reports ~

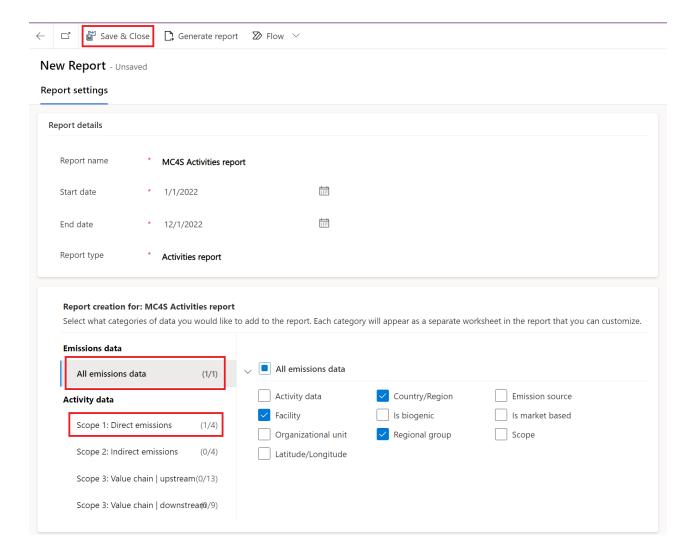
- 3. Set the following fields:
 - Name Enter the name of the report. For example: MC4S Activities report
 - **Start date** 01/01/2022
 - o **End date** 12/31/2022
 - o Report type Select Emissions report.
 - Activity data Select Scope 2: Indirect emissions.

Fields can be selected to group data by, or column headers for the report. The available fields for Emissions report are **Activity data**, **Country**, **Region**, **Latitude/Longitude**, **Organization unit**, **Facility**, **Is market-based**, **Is biogenic**, **Scope**, **Emission source**.

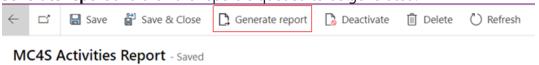
In the Activity data section, there are few activity types for which few additional fields can be selected. Each category will appear as a separate worksheet in the report that you can customize.

For this task, Jessie will just set Country/Region, Regional group, Facility, and Is Renewable for use in Contoso Corp's carbon emissions reporting to organizations like the Carbon Disclosure Project and the Task Force on Climate-Related Financial Disclosures

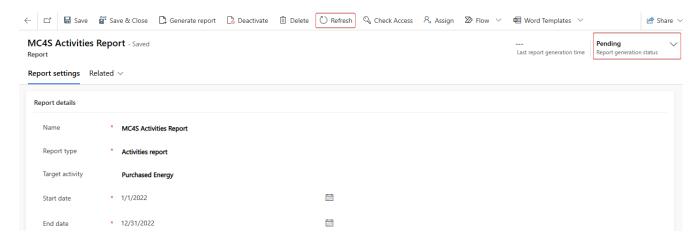
Once these are selected. Select **Save & Close** on the top command bar.



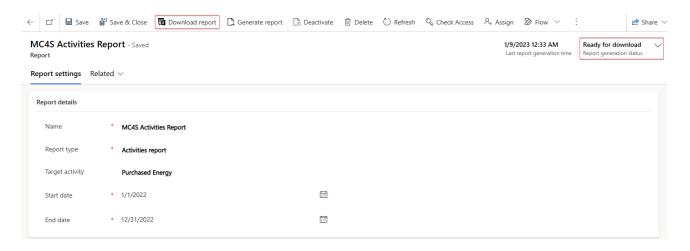
4. Once the report is saved, the **Generate report** button will be visible on the command bar. Select **Generate report** and then the report is queued to be generated.



5. Select **Refresh** button on the command bar until the **Report generation status** is changed from **Pending** to **Ready for download.** This may take a few minutes.



6. Once the status is changed, a button **Download report** is visible in the command bar. Select that button to download the generated report. An Excel report begins to be downloaded. Open the report.



- 7. The reports contain the following information:
 - The **Group by** column headers that were selected in the earlier steps.
 - Quantity and Unit fields

Facility	Country/Region	Group	Latitude	Longitude	Is Renewable	Quantity	Quantity unit
Contoso APAC Japan	JPN		35.604477	139.74858	False	265.010438	MWh
Contoso Farms Costa Rica	CRI		9.909576	-84.05406	False	316.896639	MWh
Wide World Importers - Tampa Office	USA	AMERICAS	27.94483	-82.51405	False	31.994582	MWh
Wide World Importers - Tampa Office	USA	AMERICAS	27.94483	-82.51405	False	4016130718	m
Wide World Importers - Miami Office	USA	AMERICAS	25.75572	-80.19621	False	3629634540	m
Contoso EUR HQ Bern	CHE		46.947445	7.448108	True	43.6470465	MWh
Contoso Farms Ethiopia	ETH		9.033138	38.750076	False	42.97473	MWh
Contoso APAC Japan	JPN		35.604477	139.74858	True	43.429686	MWh
Contoso EUR HQ Bern	CHE		46.947445	7.448108	False	43.6470465	MWh
Contoso HQ	USA	AMERICAS	38.88	-89.75	False	127.725325	MWh
Wide World Importers - Miami Office	USA	AMERICAS	25,75572	-80.19621	False	30.9189574	MWh

Congratulations! You have successfully generated an activity report. Activity reports are useful for providing information in public disclosures. Microsoft Sustainability provides this information in a tabular format to allow you to adapt it to meet the rapidly changing regulatory requirements. There is a great opportunity for **partners** to assist in the generation of the disclosure documents by configuring an activity report to export data in a consistent and familiar format for ingestion into a **partner** solution.