Microsoft

FastTrack for Dynamics 365

Microsoft Cloud for Sustainability Checklist for Success

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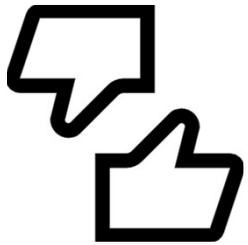
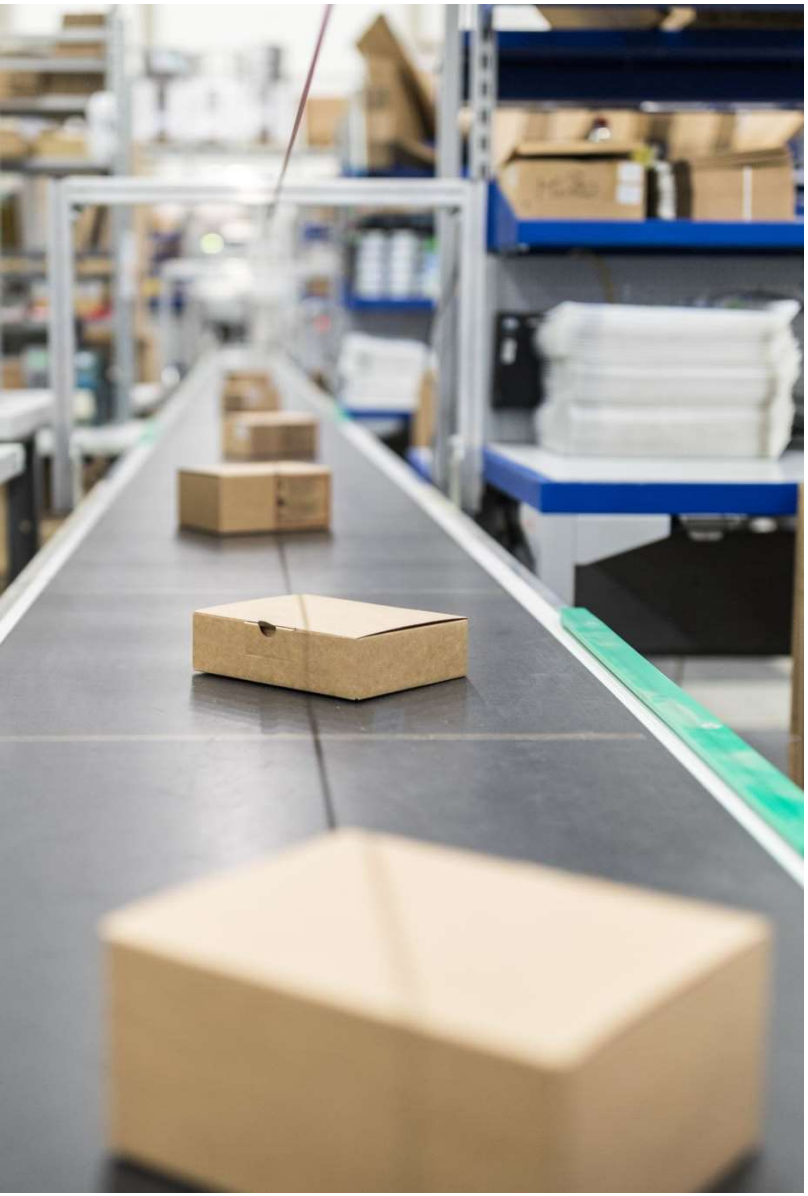
Agenda

Prerequisite Checklist for Success



Configuration Checklist for Success



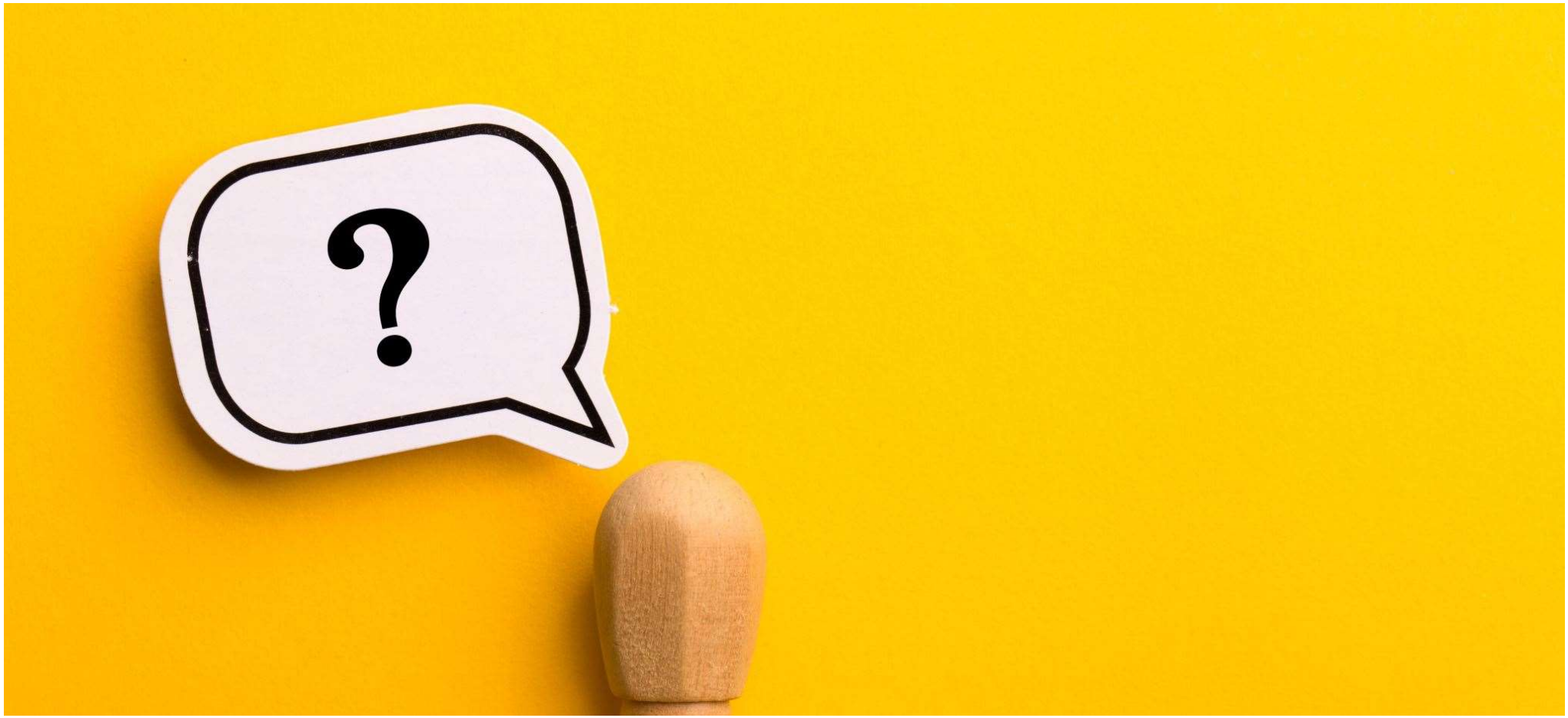
Goal of this content

- For the MC4S customer to understand to what they need to collect before starting implementation within the MC4S product.
- Save time, reduce project delays and rework headaches if required dependencies are not met when building the project.

Prerequisite Checklist for Success

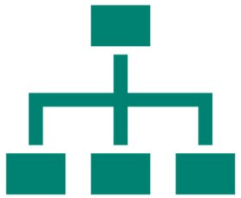
Start Simple and with Focus

Start with WHY?



Batteries (Rechargeable!) are not included.
Your business is unique.
Your businesses data and goals are unique - these are the batteries needed to make the product work.

Prework expectations



First, understand what's involved.

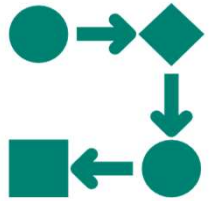
At a high level, set up Microsoft Sustainability Manager involves defining your organization, importing operational data, setting up calculations, creating goals, and running reports.

Then, plan for the level of effort.

Depending on your organization's size, familiarity with carbon accounting, and sustainability goals, you can expect this discovery period to take from 2-4 months.

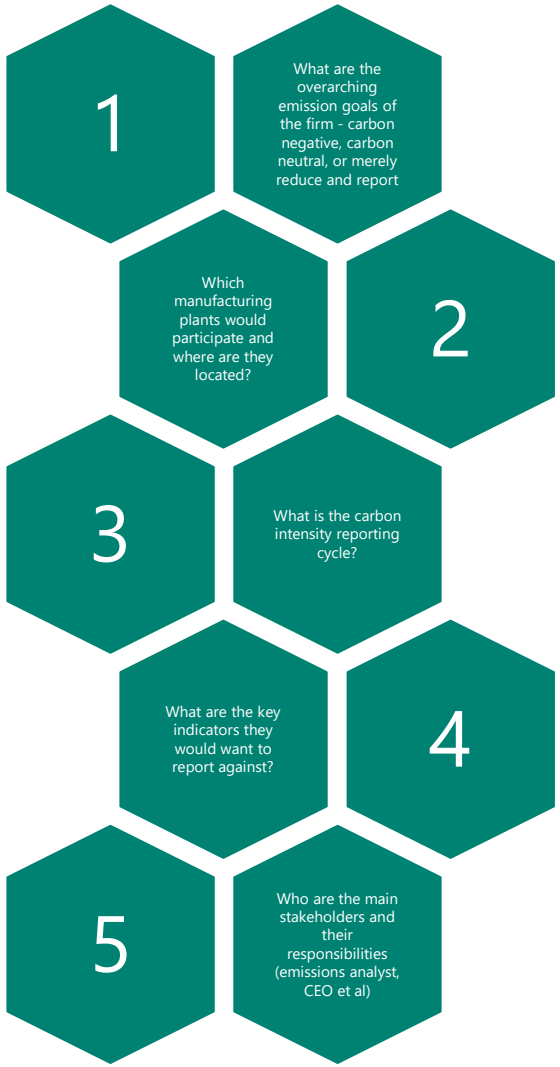
Gather your team.

There may be multiple people within your organization who can help facilities managers, IT staff, department heads, and more. Many organizations leverage a cross-functional team with a range of responsibilities to support this effort.



Follow the steps.

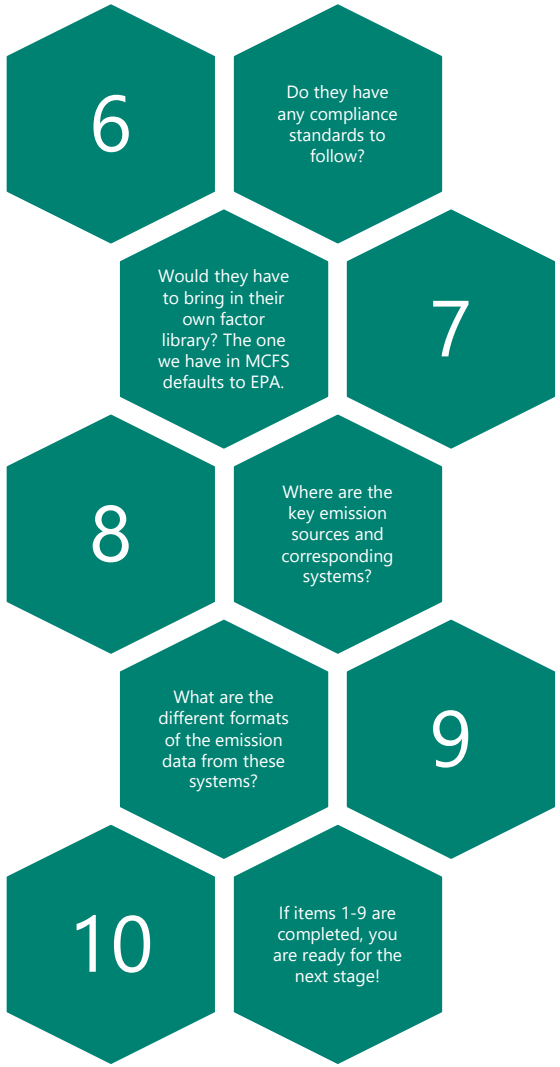
Even though some steps can be done in a different order, we highly recommend following the order we've outlined. This will help make sure you're getting the right data in the right place for the best results.



Prework essential functional prerequisites

Steps 1-5

Prework essential functional prerequisites Steps 6-10



Story Time

Story Time

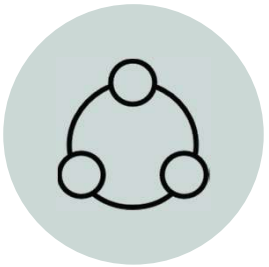
Required:

Imagination

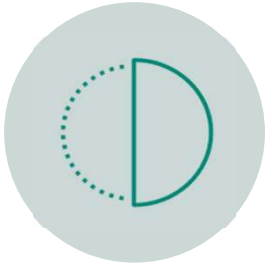
Story Time: Purpose for your business

Why should I care about the upcoming examples?

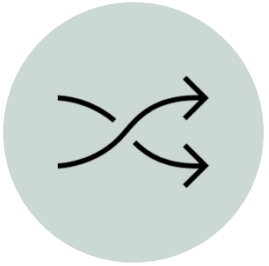
Vehicle for what your business needs to do



Thought process your business needs to go through for project success



Two Examples: One real world and one fictional



Use both to triangulate this process to work with your business

GreenFusion

Business Scenario – GreenFusion

GreenFusion has changed the world by inventing a generator that can take the earth's thermal heat to generate green energy. The company has recently discovered technology that will make it possible to transmit electricity long distances (10-mile radius) wirelessly! The company has at its core mission to reduce its carbon footprint to as little as possible. A short-term goal is monitoring the energy efficiency of the company's energy generation process to show it is 10 times as energy efficient as burning fossil fuels. The company wants to leverage this reporting to dominate the energy market.

In the long term the company wants to improve the GreenFusion process to the point where it is first carbon neutral in 2031 and carbon negative in 2036. To show progress along the way the company will be tracking this core metric to prove the dedication to meeting this ambitious goal.

GreenFusion is investing resources to be more transparent around the company's initiatives to fight climate change. The consumer is increasingly interested in how a company is measuring success for its sustainability goals. GreenFusion needs reports, goal monitoring, emissions tracking without having to create a product from the ground up. GreenFusion wants to partner with Microsoft's Cloud for Sustainability solution to ensure they can meet the demands on the customer expectations in a realistic time of the next 6 months. While GreenFusion has many ambitious goals, they want to slowly start to build out the most essential reporting and goal monitoring use cases first and desire to continue to add new monitoring data for years to come.

1

What are the overarching emission goals of the firm? - carbon negative, carbon neutral, or merely reduce and report

GreenFusion

GreenFusion needs reports, goal monitoring, emissions tracking for the following goals:

On going energy efficiency output metrics per kilowatt compared to fossil fuel competitors.

Tracking energy output data for the company to make sure it is tracking towards its 2031 goal of carbon neutrality.

Tracking energy output data for the company to ensure it is tracking towards its 2031 goal of becoming carbon negative.

2

Which manufacturing plants would participate and where are they located?

GreenFusion

GreenFusion has plants all continents besides Antarctica:
24 in North America
43 in South America
42 in Europe
21 in Asia
55 in Africa
5 in Australia

3

What is the carbon intensity reporting cycle?

The carbon intensity reporting cycle is every 3 months for GreenFusion.

Quarterly reports are available on the company's website for the public to see progress over time.

CO2 per kWh reports are published along with financial earnings to champion the dollar value saved per kilowatt hour versus coal and oil-based energy production.

4

What are the key indicators they would want to report against?

GreenFusion

Carbon produced per kilowatt.
Energy efficiency per kilowatt.
Total company carbon emissions
Total plant emissions
Total energy transmission emissions
Total carbon emissions per individual worker
Produced carbon emissions versus carbon extractions/reductions ratio.

5

Who are the main stakeholders and their responsibilities (emissions analyst, CEO et al)

CCO: Chief Climate Officer

CEO: Chief Executive Officer

CFO: Chief Financial Officer

COO: Chief Operating Officer

Emissions Analysts

Plant emissions administrators

Regional emissions administrators

Chief Global Emissions Officer:
Is solely judged the ability to ensure reduction in carbon usage per kilowatt hour produced to the LOWEST level possible.

6

Do they have any compliance standards to follow?

GreenFusion

EPA compliance needs to be followed for emission reporting.

EU emissions compliance needs to be followed.

Chinese emissions compliance needs to be followed.

7

Would they have to bring in their own factor library? The one we have in MCFS defaults to EPA.

EPA Factors Hub

IPCC Emissions Factor

GHG Emission Factors Hub

8

Where are the key emission sources and corresponding systems?

GreenFusion

Wireless energy transmission efficiency.
IOT devices monitoring energy transmission bleed from wireless transmission bases.

IOT devices recording energy consumption per fusion plant.

IOT devices measuring energy output of plant per hour.

Receipts from business expenses

Office worker information systems

9

What are the different formats of the emission data from these systems?

GreenFusion

IMPORTANT: Get access to these data sources early to reduce risk of project delays.

CSV

Excel

SharePoint

Access

Dataverse

SQL

MONGODB

mySQL

AS400

10

If items 1-9 are completed, you are ready for the next stage!

GreenFusion

If items 1-9 are completed, you are ready for the next stage!

Microsoft

Business Scenario

Microsoft

Carbon neutral by 2030

1

What are the overarching emission goals of the firm? - carbon negative, carbon neutral, or merely reduce and report

Microsoft

By 2025, we will shift to 100 percent supply of renewable energy

We will electrify our global campus operations vehicle fleet by 2030

Reduce our scope 3 emissions by more than half by 2030

We will work with our suppliers to implement consistent and accurate reporting and pursue effective steps to make progress against scientifically based targets

The whole company will be carbon neutral by 2030

Microsoft: Carbon negative by 2030

2

Which manufacturing plants would participate and where are they located?

Microsoft

Americas	Europe	Middle East	Africa	Asia Pacific
Brazil South	France Central	Qatar Central*	South Africa North	Australia East
Canada Central	Germany West Central	UAE North*		Central India
Central US	North Europe			Japan East
East US	Norway East			Korea Central
East US 2	UK South			Southeast Asia
South Central US	West Europe			East Asia
US Gov Virginia	Sweden Central			China North 3
West US 2	Switzerland North			
West US 3				

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Total company carbon emissions
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Produced carbon emissions versus carbon extractions/reductions ratio.

5

Who are the main stakeholders and their responsibilities (emissions analyst, CEO et al)

Leadership:
CEO: Chief Environmental Officer
Is solely judged the ability to ensure reduction in carbon usage per kilowatt hour produced to the LOWEST level possible.

CEO, CFO, COO: Will receive reports of progress to report to shareholders.

Emissions Analysts

Plant emissions administrators

Regional emissions administrators

Microsoft

EPA compliance needs to be followed for emission reporting.

Kyoto Protocol

Euro Emissions Standards

7

Would they have to bring in their own factor library? The one we have in MCFS defaults to EPA.

Microsoft

EPA Factors Hub

IPCC Emissions Factor

GHG Emission Factors Hub

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Microsoft

CSV

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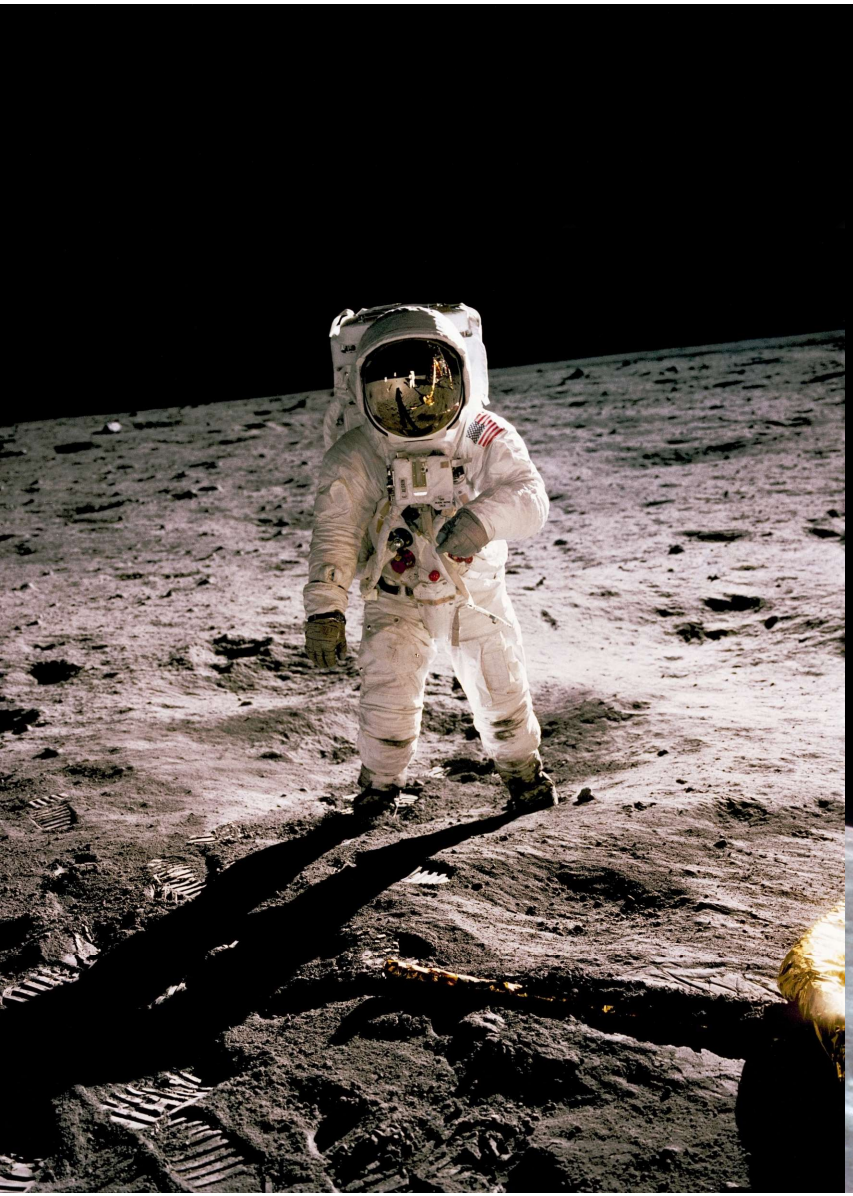
IMPORTANT: Get access to these data sources early to reduce risk of project delays

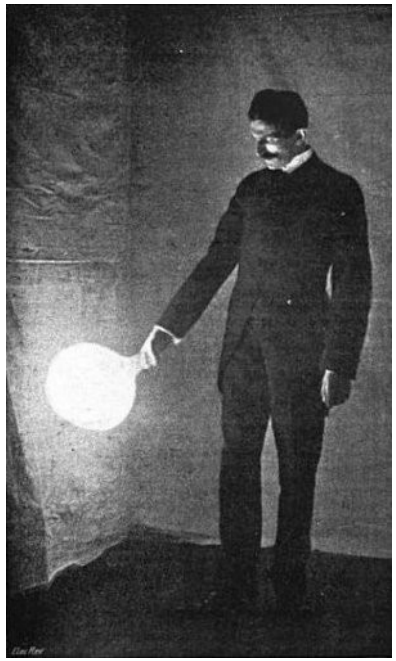
"We Do These Things Not Because They Are Easy But Because They Are Hard."
~John F. Kennedy, 1962

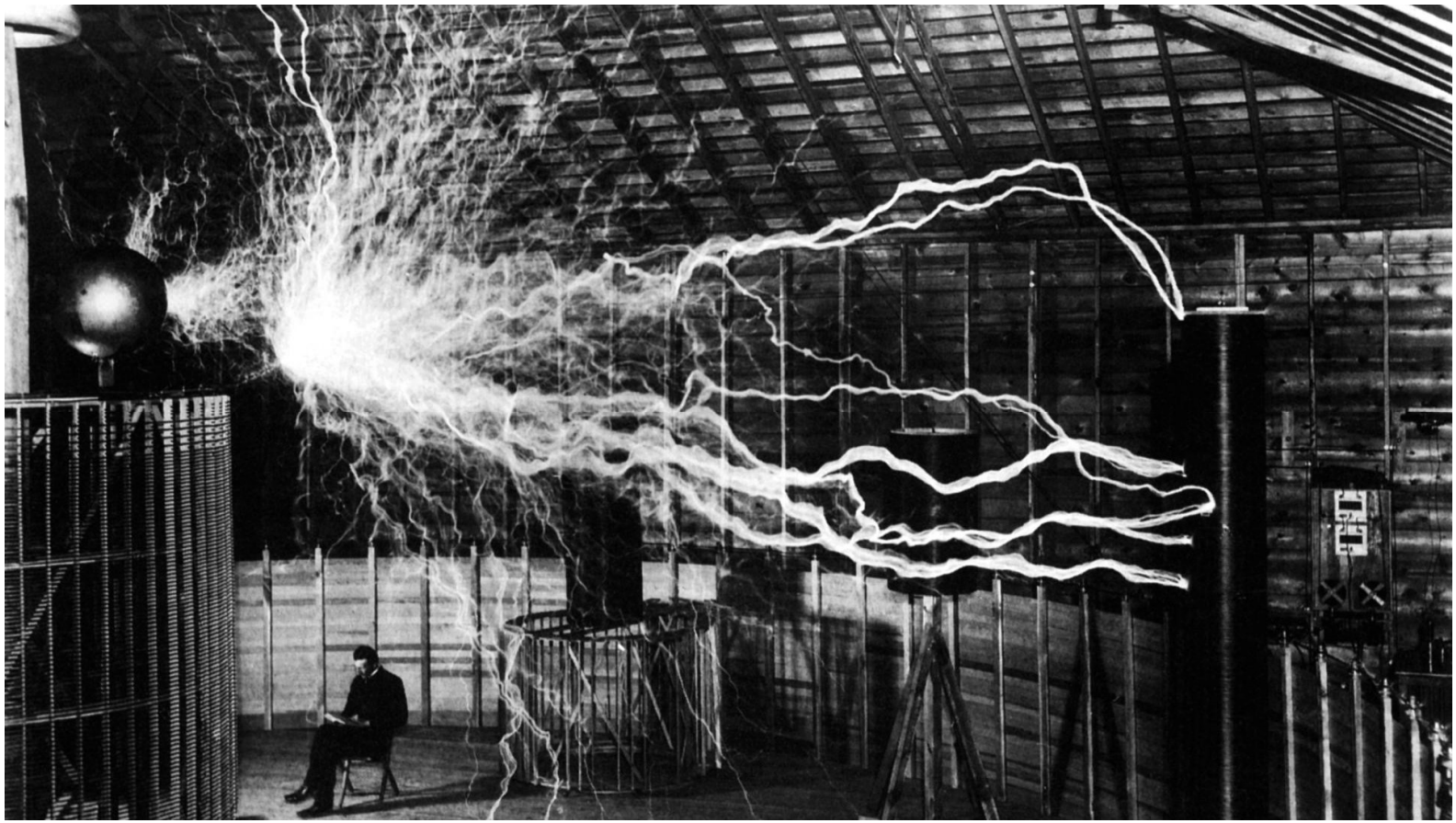


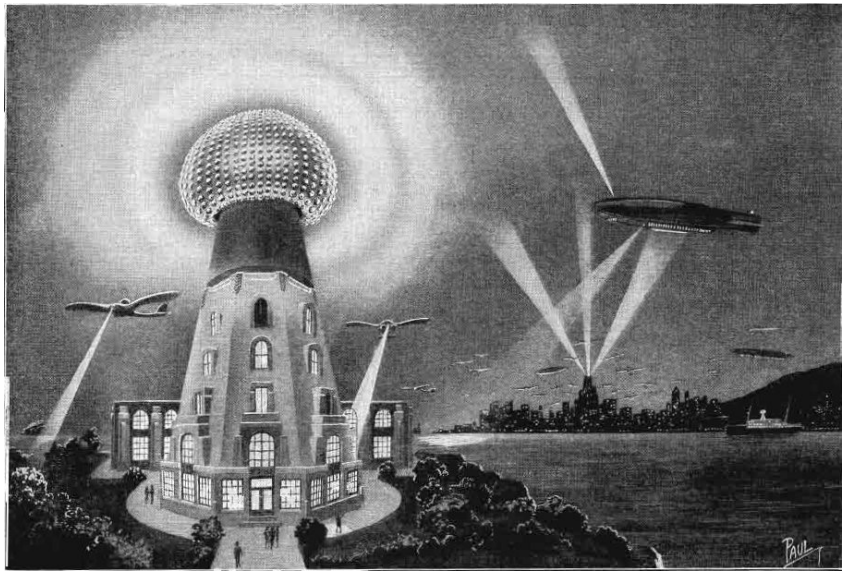
Microsoft

Impossible?=>

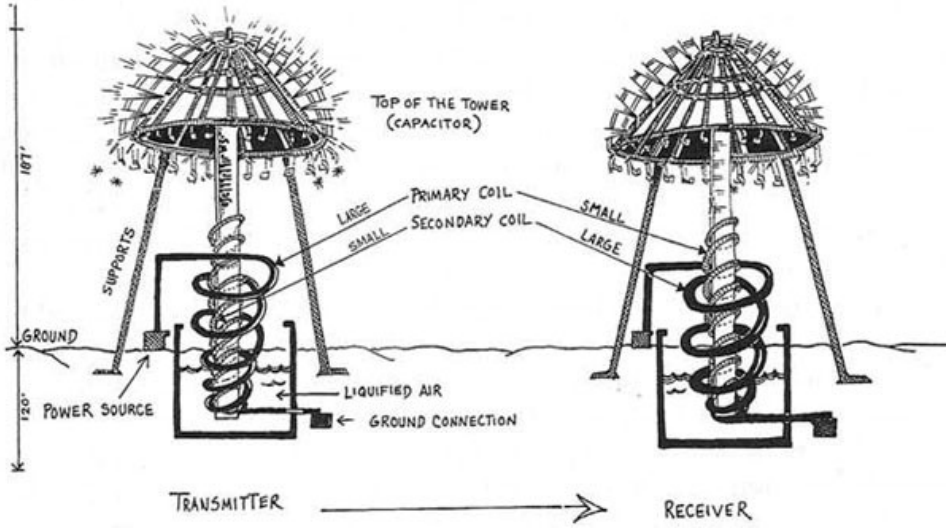
Nikola Tesla







MAGNIFYING TRANSMITTER



Microsoft

Our generation's defining problem: climate change.

The world's next moonshot.

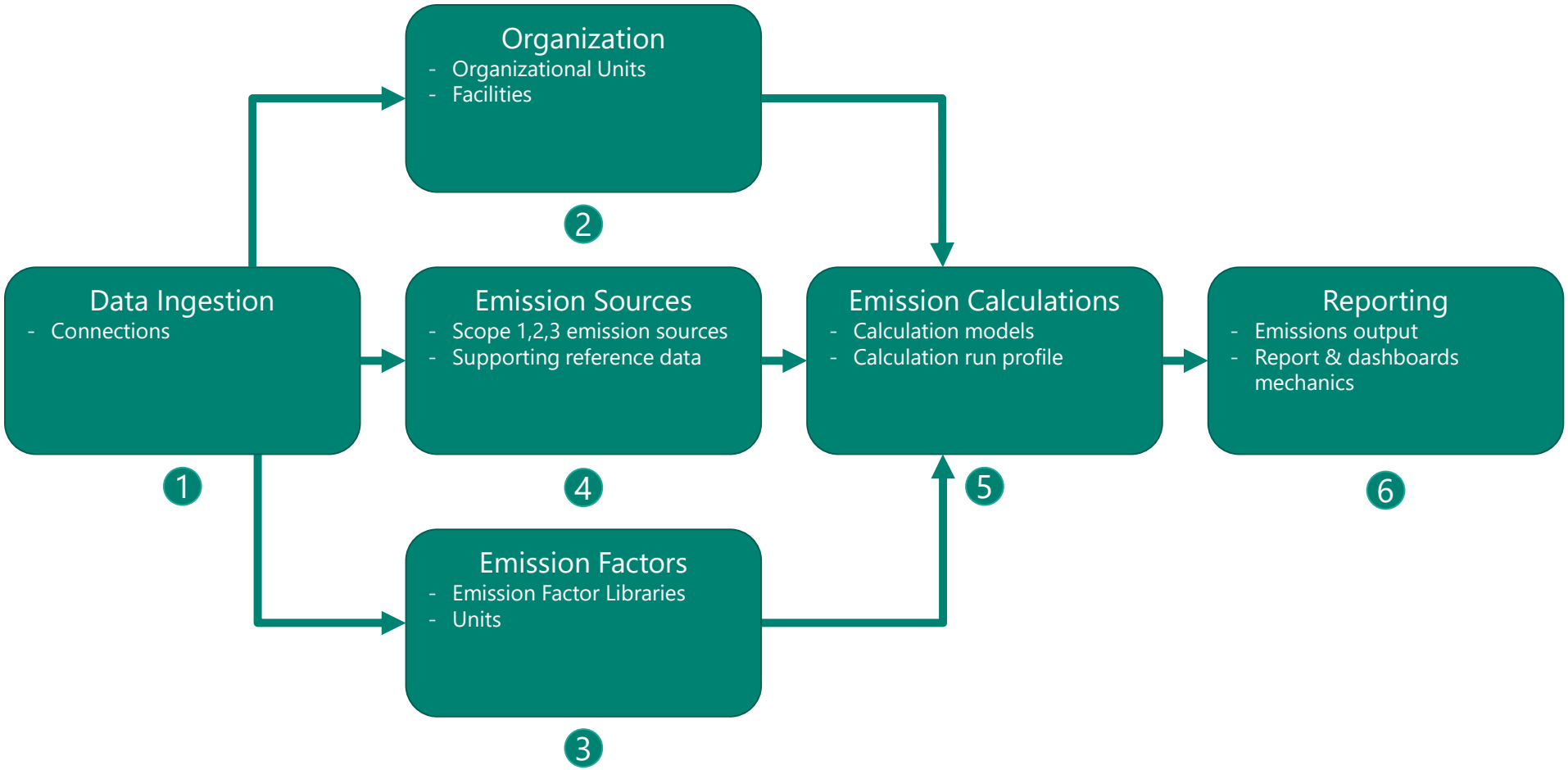
Configuration Checklist for Success

Zooming In

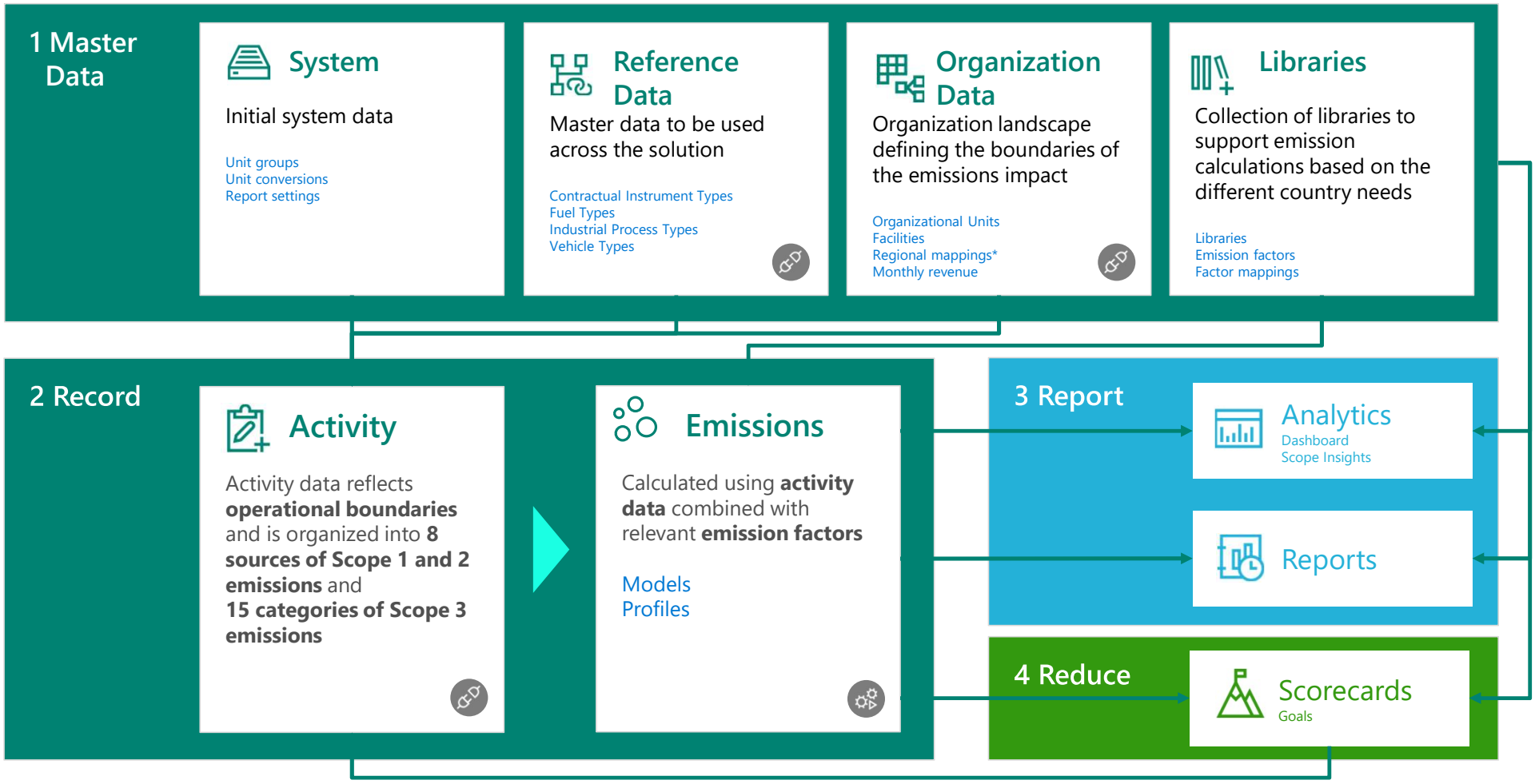
Program Strategy - Solution Scope

- Are you ingesting data from outside sources? If so, What is the frequency (one-time, regular cadence), Volume
- Are you considering 3rd party tools to make this ingestion possible? Please mention if using any third-party connectors
- Are you planning to write back from Dataverse to source systems?
- What integrations with other apps/data sources are you planning to have with Cloud for sustainability?
- Have you considered the impact of daily transactions on the API entitlements, Dataverse Storage, Power Automate entitlements, and Azure consumption?

Data Model Configuration Shape



Processes and data flow



Recommended practices

Supporting / Master data

Identify **regulatory requirements** in countries where operations exist

Specify **units and conversions** to avoid calculation errors

Define the **solution landscape** in terms of **reporting needs** and level of **granularity**

Data ingestion

- **Plan your approach** based on organization landscape, technical capabilities, and source data format.
- **Partner with IT** to manage data ingestion. **Define roles** for data management **security**.
- **Start simple** with manual or file-based data ingestion methods.
- **Be flexible** about how your organization imports data; blend methods where possible.

Define Organization

ORGANIZATIONAL UNITS

FACILITIES

REGIONAL MAPPINGS

REPORTING

Examples

Org Unit: EMEA, NA, APAC

Facilities: Spirit Lake Iowa Manufacturing Plant, Huntsville Alabama Battery Plant

Regional Mappings: NA Southwest Region is made up of 3 regional Facilities (AZ, NM, UT Plants)

Carbon Intensity Reporting Cycle needs to be defined Ex: measurements per quarter, FY, etc. You need to set the annual period in MC4S

Define Organization

Examples

Org Unit: EMEA, NA, APAC

Facilities: Spirit Lake Iowa Manufacturing Plant, Huntsville Alabama Battery Plant

Regional Mappings: NA Southwest Region is made up of 3 regional Facilities (AZ, NM, UT Plants)

The reporting cycle for carbon measurements for GreenFusion are reported quarterly.

Define Organization

Examples

Org Units: EMEA, NA, APAC, AU, Africa, UK, South America, South Africa, Middle East, India, Singapore, Japan

Facilities: Data Centers around the world, Corporate offices in all regions. Business travel and remote work.

Regional Mappings: NA Region is made up of 3 regional Facilities (Dallas TX, Silicon Valley, Redmond/Seattle, North Dakota, Atlanta, New York, Miami)

The reporting cycle for carbon measurements for Microsoft are reported annually at the end of the financial year (June 30th).

Define Emission Factors

Emission Factor Libraries

Examples: Electricity, Gas, Water

Units & Conversions

Kilowatts, AMPs, Celsius

Describe your requirements for what needs to be monitored and measured for emissions for your company.

Regulatory requirements in different countries will dictate your needs.

Define Emission Factors

Emissions Factors for first release of reporting using MC4S. This will be delivered in 6 months.

GreenFusion's emission factors for Minimum Viable Product release will include monitoring Kilowatts generation efficiency from the thermal generation sites.

These produced Kilowatts will be compared to the operating energy needed to run GreenFusion wireless transmission and overall company operations.

Define Emission Factors

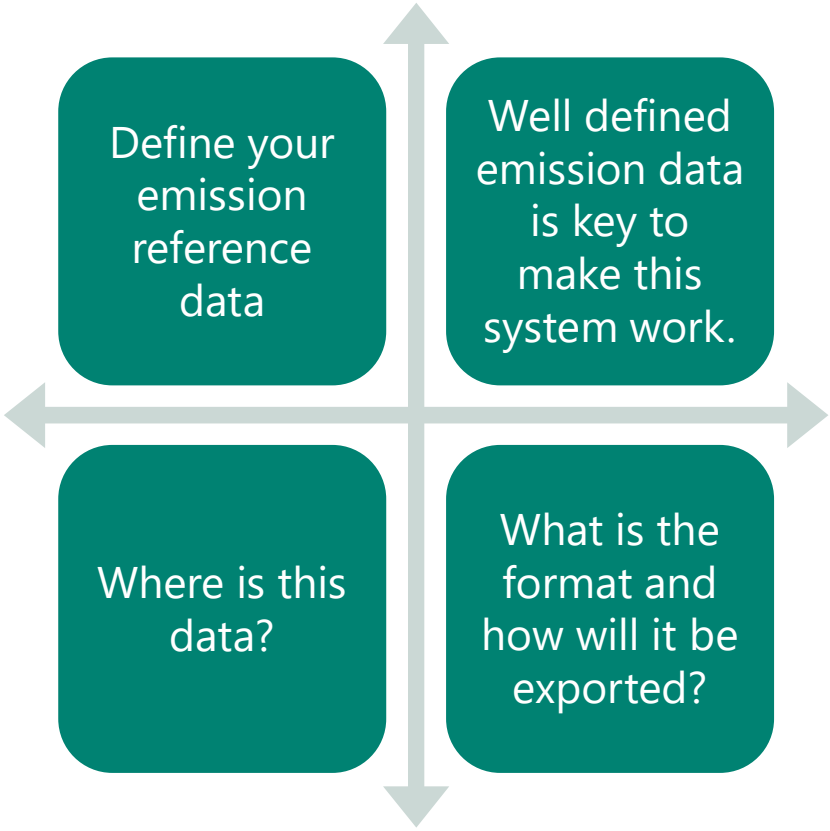
Emissions Factors for first release of reporting using MC4S. This will be delivered in 6 months.

Microsoft's emission factors for Minimum Viable Product release include monitoring CO2 emissions for all corporate offices and business travel.

This will be offset by carbon recapture initiatives worldwide.

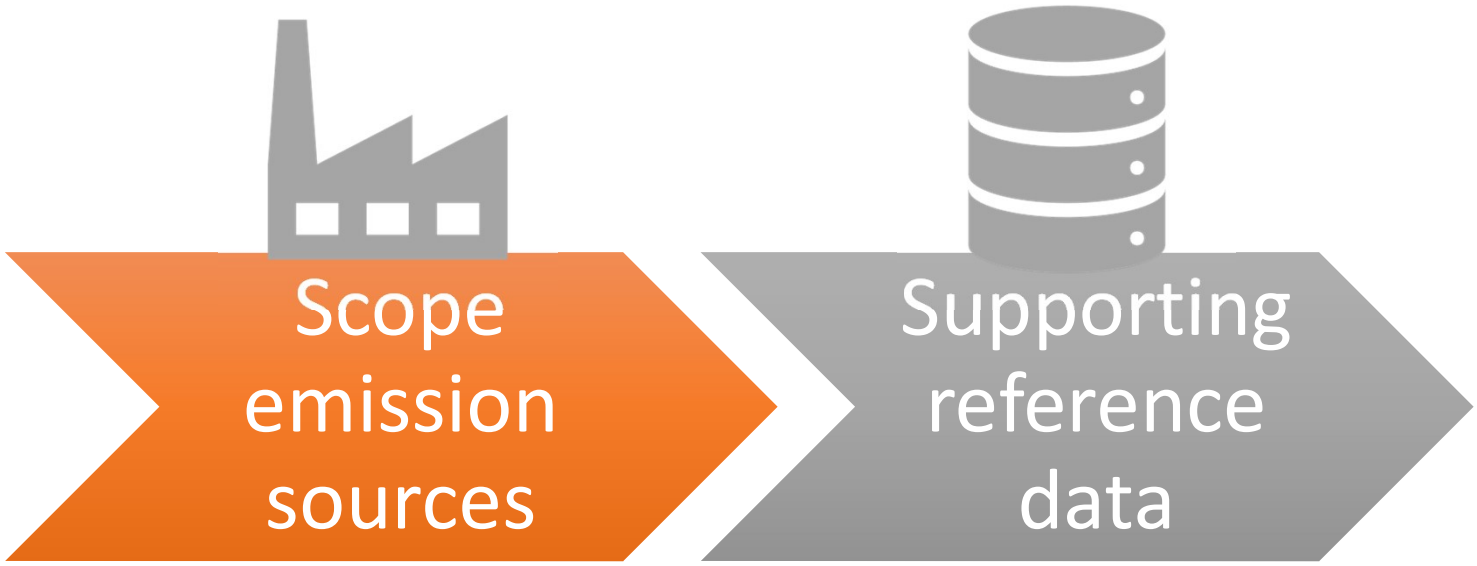
This carbon offset to expended CO2 emissions to monitor the path to becoming carbon neutral.

Define Emission Sources



- Where does your organization interact with these resources?
  - List all these interactions
    - Example: Business Travel => Uses Gas, Water, Electricity
      - How do you calculate the estimated usage per trip?
        - Flights?
        - Cars?
        - Expenses/Receipts?
        - Hotel Expenses?
        - Duration of trip?
        - Miles traveled?
    - Example: Manufacturing Plant => Uses Gas, Water, Electricity
      - How do you calculate the estimated usage per product produced at a plant?
        - How much water is used per day?
        - How many gadgets are produced?
        - How many miles were the base materials shipped to the plant?
        - Where did the product get shipped to?
        - How many people commute to work?
        - How many people use industrial equipment to produce goods?

Define Emission Sources



Define Emission Sources

Wireless energy transmission efficiency.
IOT devices monitoring energy transmission bleed from wireless transmission bases.

IOT devices recording energy consumption per fusion plant.

IOT devices measuring energy output of plant per hour.

Receipts from business expenses

Office and worker power consumption levels.

Define Emission Sources

IOT devices recording energy consumption per manufacturing plant.

Microsoft products recycled and refurbished.

IOT devices measuring energy output of plant per hour.

Receipts from business expenses from employees travelling for business.

Datacenter power consumption levels.

Office and worker power consumption levels.

Water consumed compared to water recycled.

Emissions recaptured from business.

Define Emission Calculations

Calculation models

Calculation run profile

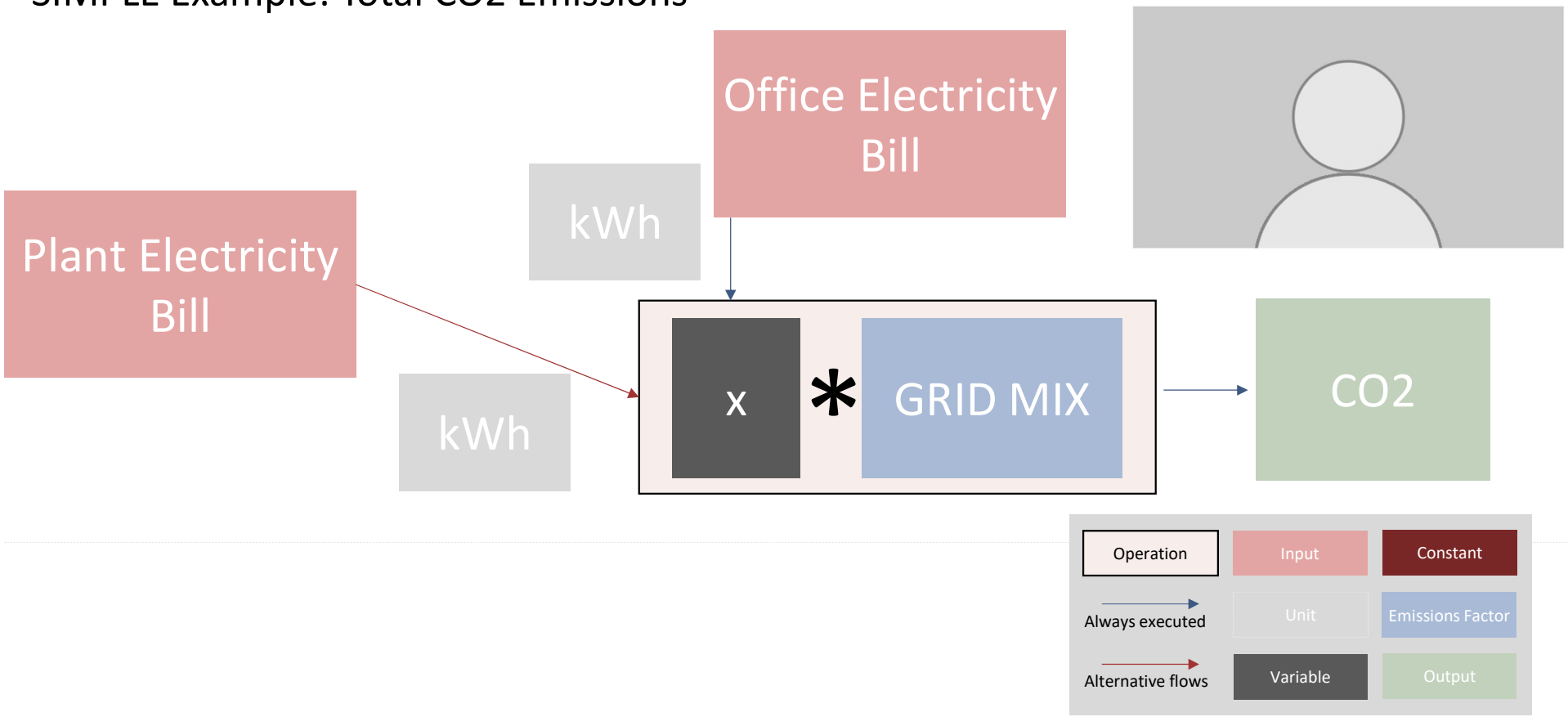
Define how it will be measured

- What are good values and bad values when monitoring emissions?
  - Example: > 110 kilowatts per product is bad, under this number is good
  - Example: > 1000 CO2 emissions per product is bad, under this is good
  - What reports are required based off these monitoring requirements?
  - What are the most granular metrics that need to be monitored to make this work?
    - Per product?
  - What are the broadest metrics that need to be monitored to make this work?

Define Emission Calculations

GreenFusion

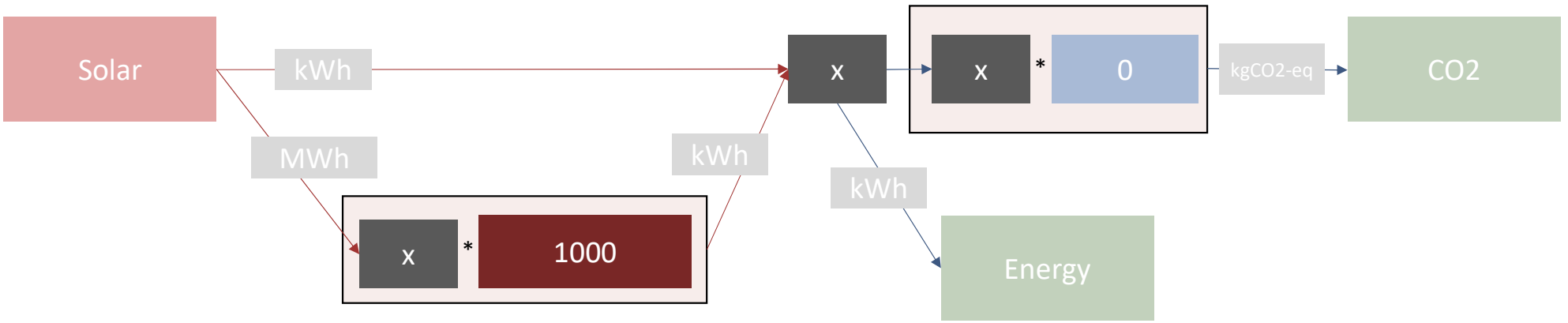
SIMPLE Example: Total CO2 Emissions



Define Emission Calculations

GreenFusion

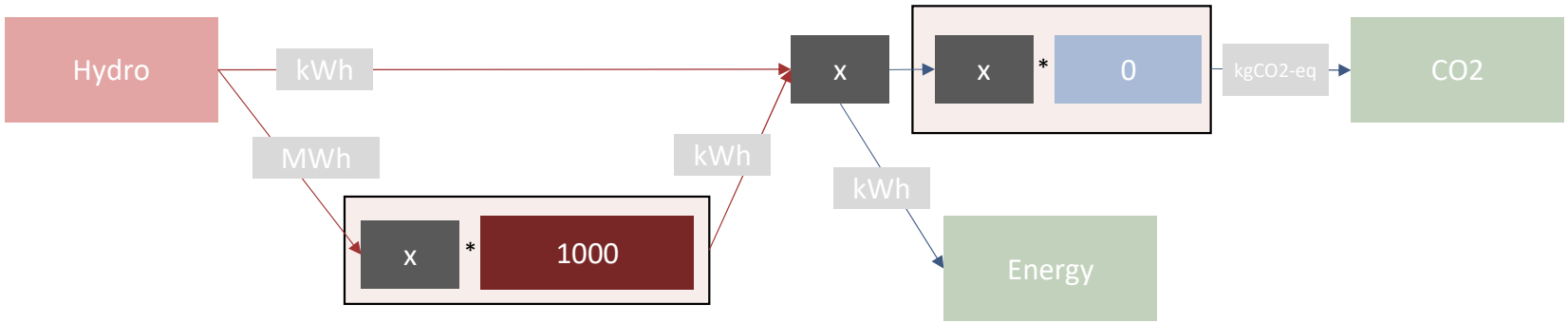
Complex Example: Onsite solar

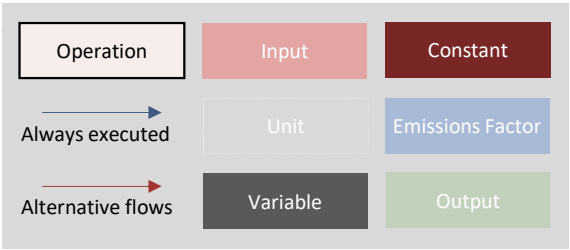


Define Emission Calculations

Microsoft

Onsite hydropower

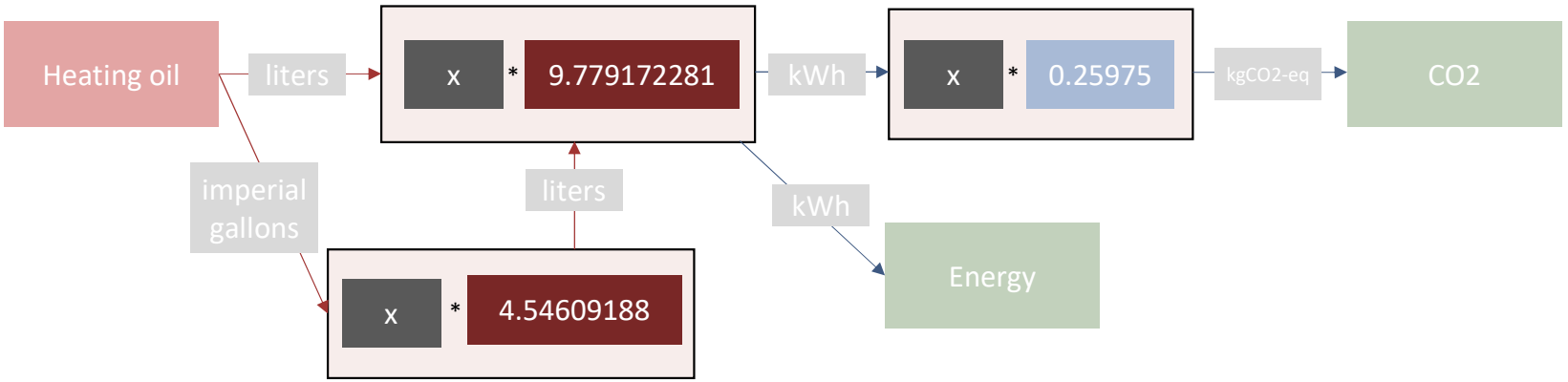


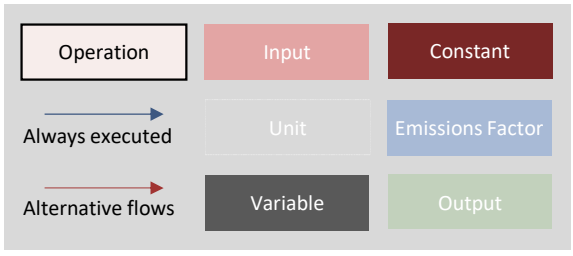


Define Emission Calculations

Microsoft

Heating oil





Define Reporting

Emissions output

Report & dashboards mechanics

Carbon Intensity Reporting Cycle needs to be defined.
Examples:

- measurements per quarter
- fiscal year
- annual period of measures

The annual period reporting cycle is required to be set within Microsoft Sustainability Manager

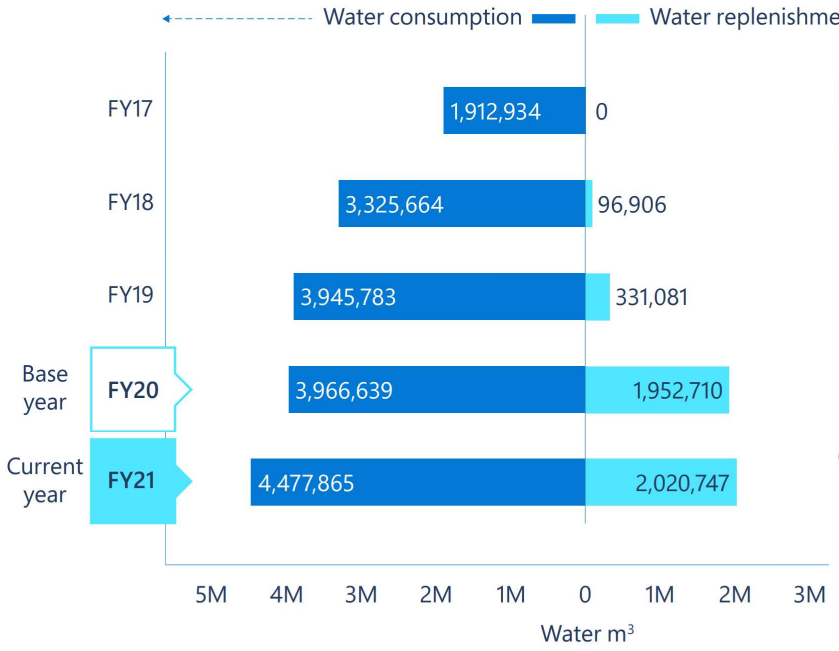
Define Goals and Scorecards

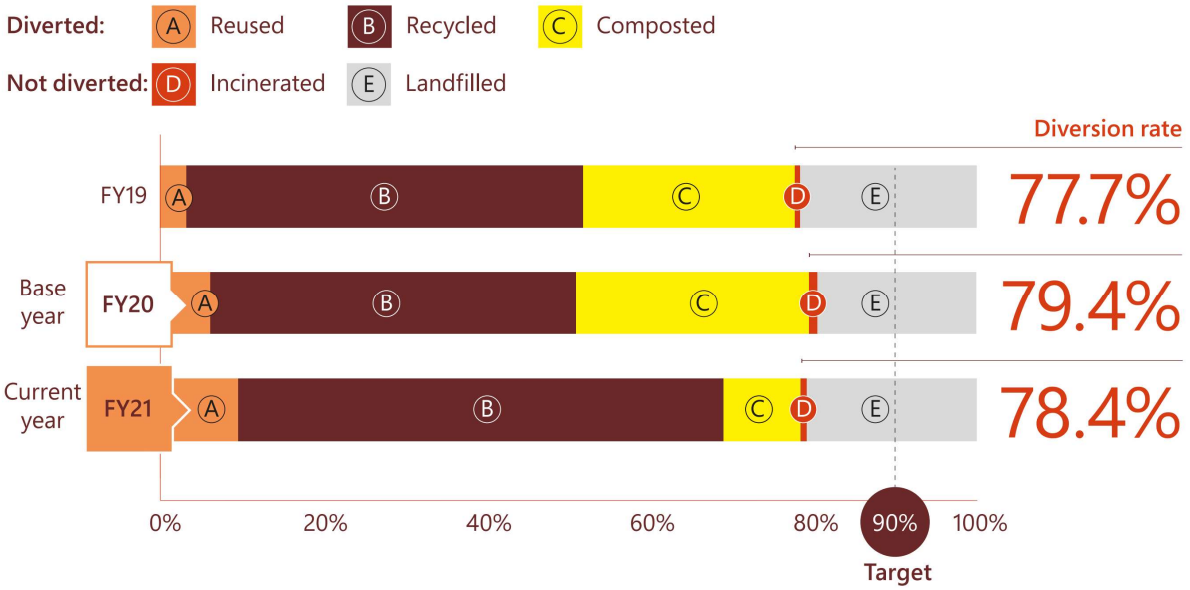
Goals

Scorecards

This is tracking your progress along the way to your long-term goal.
Example: tracking this quarters numbers improvement YoY to make progress towards your companies 2030 initiative.

Define Reporting





Define Reporting

Microsoft

2021 progress

$571M

Allocated $471 million to date via our Climate Innovation Fund to accelerate our carbon goals, as well as water and waste. We also donated $100 million to Breakthrough Energy's Catalyst initiative.

Carbon

2.5M tons

In FY21 and FY22, Microsoft successfully contracted to remove 2.5 million $mtCO_2$, meeting our cumulative two-year goal.

5.8 GW

In FY21, we signed new power purchase agreements (PPAs) for approximately 5.8 gigawatts (GW) of renewable energy across 10 countries around the globe.

87% supplier reporting

In July 2021, 87 percent of our in-scope suppliers reported their emissions to CDP, up 12 percent from 2020.

Microsoft Cloud for Sustainability

In July 2021, we launched the Microsoft Cloud for Sustainability to provide comprehensive, integrated, and automated sustainability management.

Water

1.3M m^3

In FY21, Microsoft invested in replenishment projects that are expected to generate over 1.3 million cubic meters of volumetric benefits.

670M

Our programs with Water.org account for over 670 million liters of water benefit per year.

>95K people

Through our partnership with Water.org, we provided more than 95,000 people with access to safe water or sanitation.

U.S. Water Prize

In 2021, Microsoft was awarded the U.S. Water Prize for Outstanding Private Sector Organization for adopting our water positive program and committing to being water positive by 2030.

Waste

Circular Centers

We have planned five Circular Centers, with Amsterdam open, construction underway in Boydton, Virginia, and three more to be added in 2022.

>15,200 tons

In FY21, we diverted more than 15,200 metric tons of solid waste otherwise headed to landfills and incinerators.

Zero Waste

Four datacenters are Zero Waste certified, with new certifications for the San Antonio, Texas and Quincy.

18% reduction

We reduced single-use plastics in our Microsoft product packaging by 18 percent.

Ecosystems

>17,000 acres

In FY21, we contracted to protect more than 17,000 acres of land.

>500 users

The Planetary Computer private preview released as planned in April 2021, with more than 500 users signed up and using the APIs and scalable compute.

24 petabytes

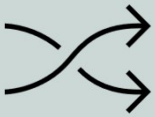
We have made available 24 petabytes of data with more than 30 key environmental and Earth observation datasets to Azure in consistent, analysis-ready format that is freely available for use by anyone.

850+ grants

Since its inception in 2017, our AI for Earth program has provided more than 850 grants to organizations working in 110 countries around the world, granting more than $20 million in Azure credits.

Going forward

This checklist is just the first step



This is just the beginning of a long journey

This will be challenging work

Questions

Thank you!