



✓ Urgent Up-Skilling

## How Data Can Drive Sustainability In Organizations?



Co-funded by  
the European Union

Licensed under CC BY 4.0



## How Data Can Drive Sustainability In Organizations?

*Participants will learn how to leverage data analytics to measure environmental impacts, optimize resource use, and support sustainability goals in a practical and impactful way.*



 Urgent Up-Skilling

**This course is provided by:**

---



---

**January 24, 2025, 10:00 – 11:30 CET**

# Agenda

1. Introduction: terminology
2. Data Analytics in Action
3. First Steps to Implementation
4. Challenges
5. Conclusion





## Meet the speaker

# GERLYN TIIGEMÄE

- Over a decade of experience in the financial sector
- Data analytics and management, data governance
- AI strategy and its practical implementation

Company: AIPowerment

---

“

*What is  
sustainability*

?

—

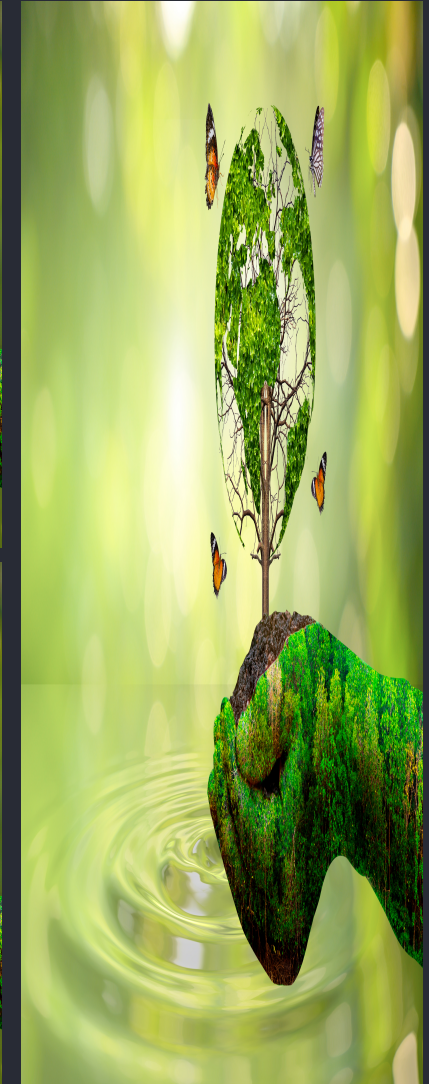


# Introduction

# Data and Sustainability

# What Does Digital Sustainability Mean for Organizations?

- **Sustainability:** Meeting present needs without compromising future generations.
- **Digital Sustainability:** Using digital tools and data to support environmental, economic, and social sustainability.
- **The role of data professionals:** Collect, analyze, and drive decisions that align with sustainability goals.



# Why Data is Critical to Sustainability Efforts?

The Power of Data –  
enabler of informed decision-making

Resource  
Optimization

Process  
Optimization

Waste  
Reduction

**Have you seen data used to support sustainability in your organization or elsewhere?**

**If yes, how?**



# Data Analytics in Action:

## Supporting Sustainability



## Real world applications



IoT (Internet of Things) for Real-Time Monitoring



AI (Artificial Intelligence) for Predictive Analytics



## AI

- AI can take massive, diverse datasets and uncover patterns beyond human capability.
- **Production:** predictive maintenance.
- **Transport & Logistics:** AI-driven route optimization
- **Barriers:**
  - Data Security & Privacy
  - Integration Challenges

## Case Study: Google



## Case Study: Siemens



# First Steps to Implement Sustainability with Data

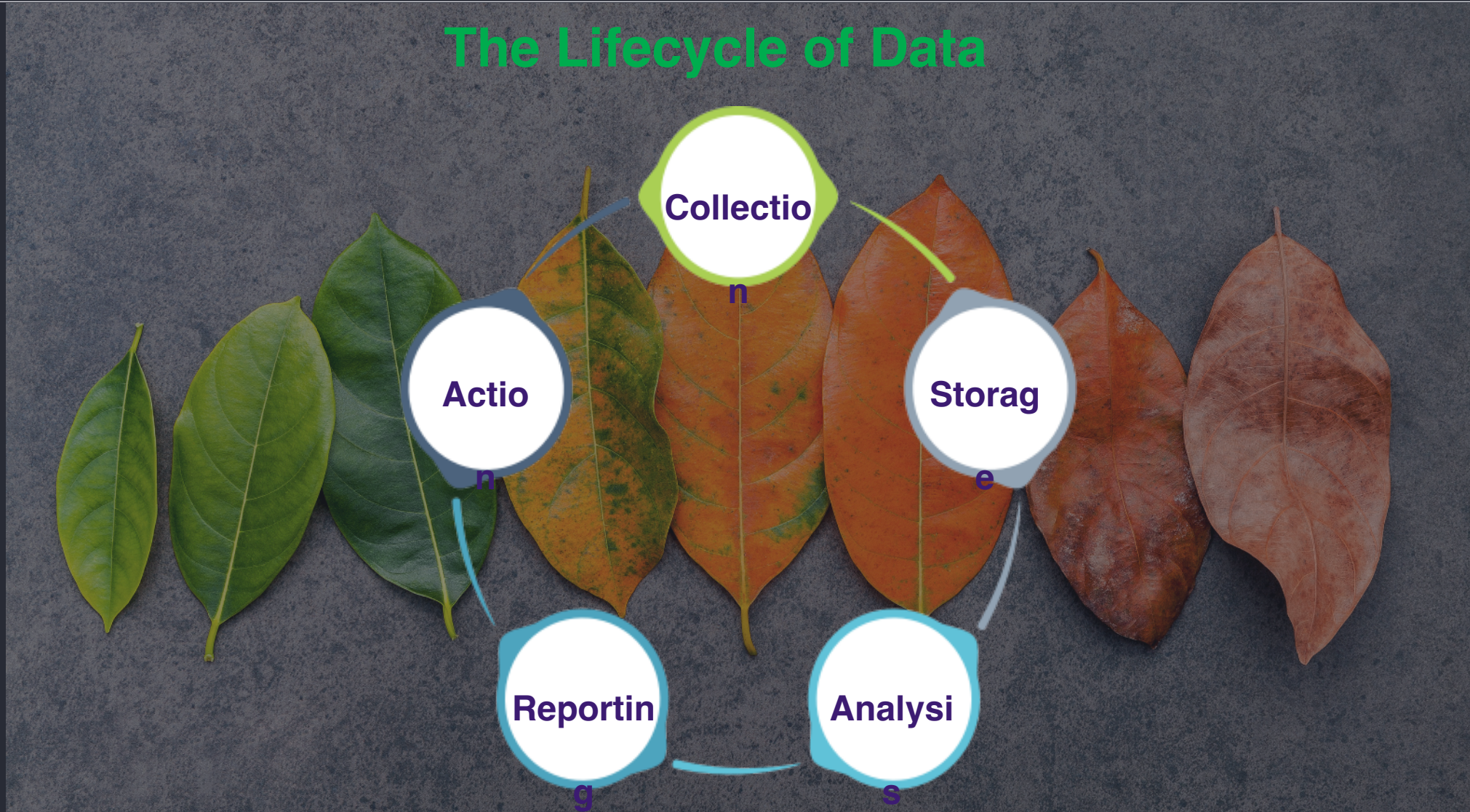
## Laying the Foundation

- Identify Key Data Sources
- Ensure Data Quality & Reliability
- Collaboration Among Departments



Actionable Data VS “Noise”

# The Lifecycle of Data



# Sustainability Metrics and Visualizations

Key KPIs

carbon  
footprint  
energy usage

Visualization  
Best Practices

clear  
uncluttered  
visual cues

Tools

Power BI,  
Tableau  
Excel

# KPIs

- GHG Emissions Intensity
- Renewable Energy Percentage
- Energy Intensity



- Waste Diversion Rate
- Single-Use Plastics Volume
- Materials Circularity

- Water Efficiency Ratio
- Water Reuse/Recycle Percentage



- Fleet Fuel Efficiency
- Freight Emissions per Ton-Kilometer

## How to Use KPIs?



## Visualization Best Practices

- Determine the audience
- Choose the Right Visuals
- Use structured layouts
- Leverage Color Hues
- Focus on Key Areas
- Keep it Simple
- Offer Interactivity
- Add clarity



# Sustainability KPI Dashboard



2021 ACTUAL IMPACT

**314,519** MTCO<sub>2</sub>e

2021 OFFSETS

**219,482** MTCO<sub>2</sub>e

2021 NET IMPACT

**95,037** MTCO<sub>2</sub>e

2021 Full Year

All countries

All regions

## Energy Consumption

**203,194** MTCO<sub>2</sub>e

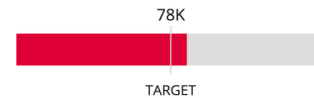
93% REPORTING



## Transportation

**85,853** MTCO<sub>2</sub>e

100% REPORTING



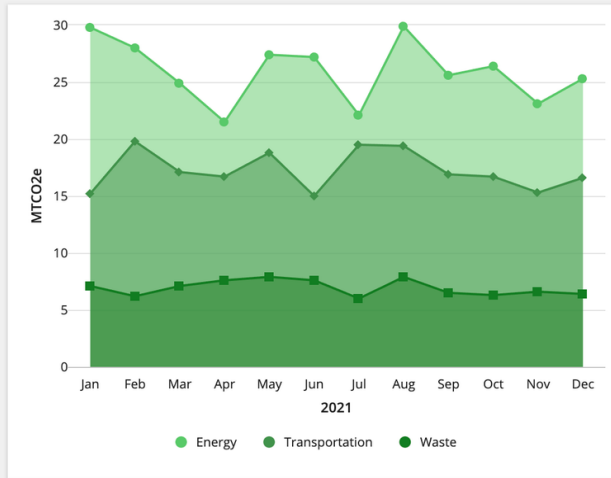
## Waste

**25,472** MTCO<sub>2</sub>e

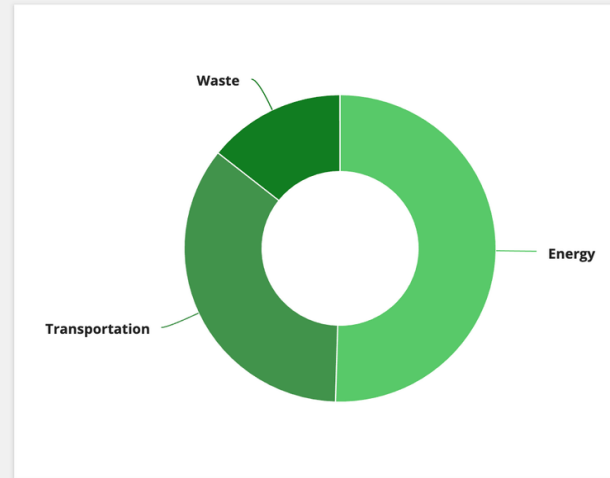
100% REPORTING



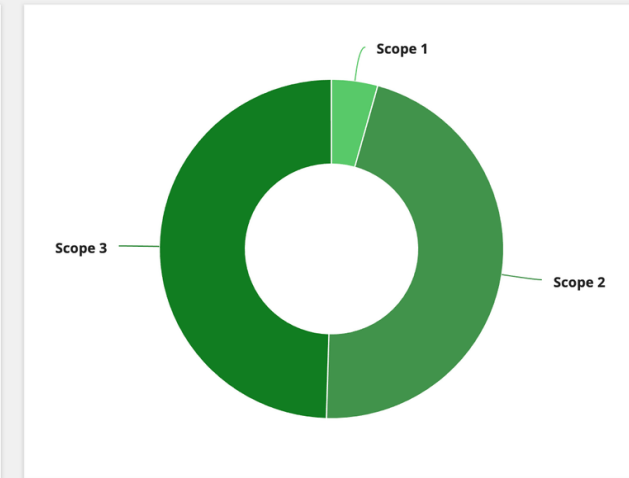
## Emissions over Time



## Emissions by Category



## Emissions by Scope

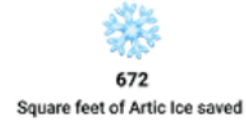


<https://ecocart.io/esg-reporting-software/>

- Home
- Instructions
- Billing
- Integrations

### Your Community impact

Share



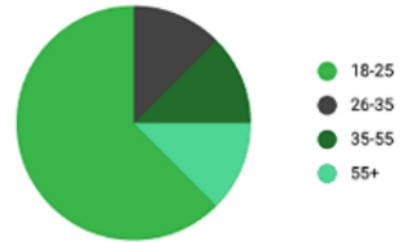
### Customer adoption



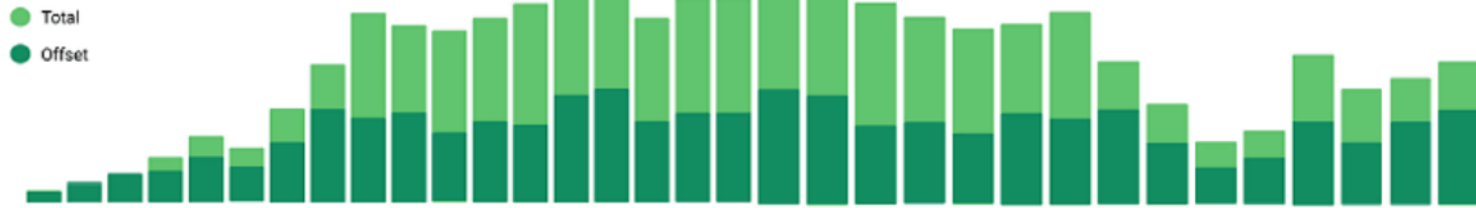
### Emissions



### Demographic



### Total emissions



Settings

[https://www.researchgate.net/figure/Template-for-Key-Dashboard-Indicators-Sustainability-Dashboard-Tools-2012\\_fig1\\_274312357](https://www.researchgate.net/figure/Template-for-Key-Dashboard-Indicators-Sustainability-Dashboard-Tools-2012_fig1_274312357)

Tools-2012\_fig1\_274312357



<https://www.aprayon.com/en/media-english/news-releases/apr-sustainability-dashboard-goes-live/>

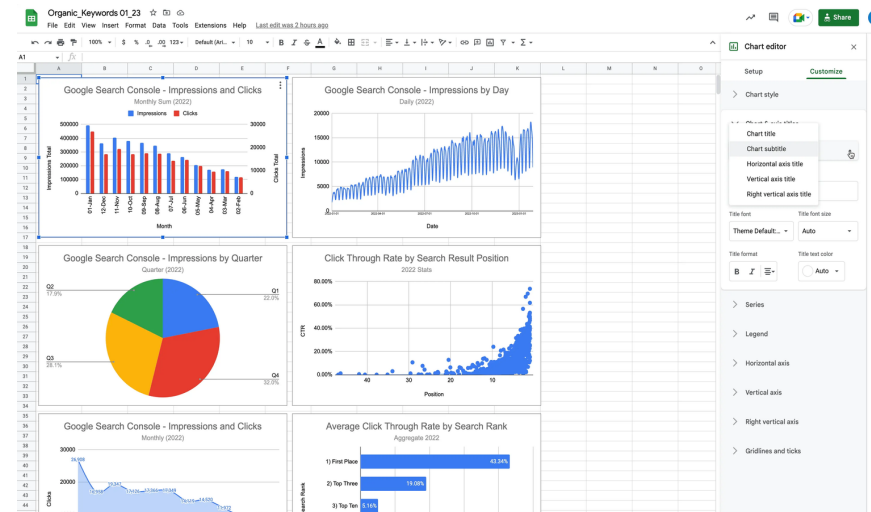
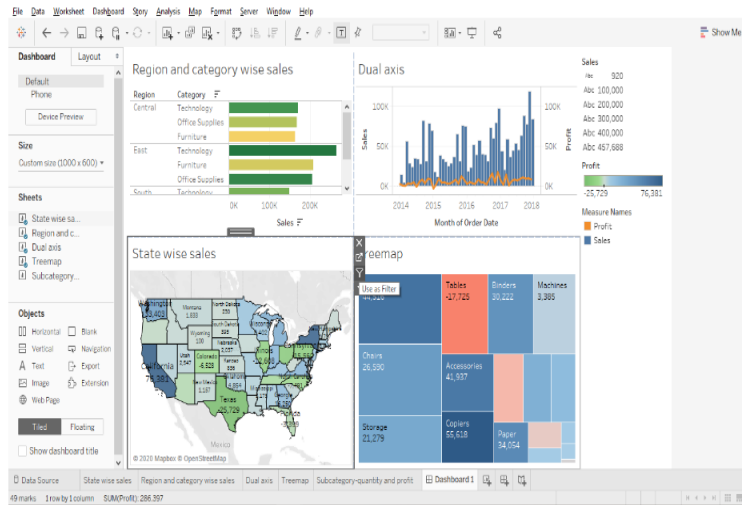
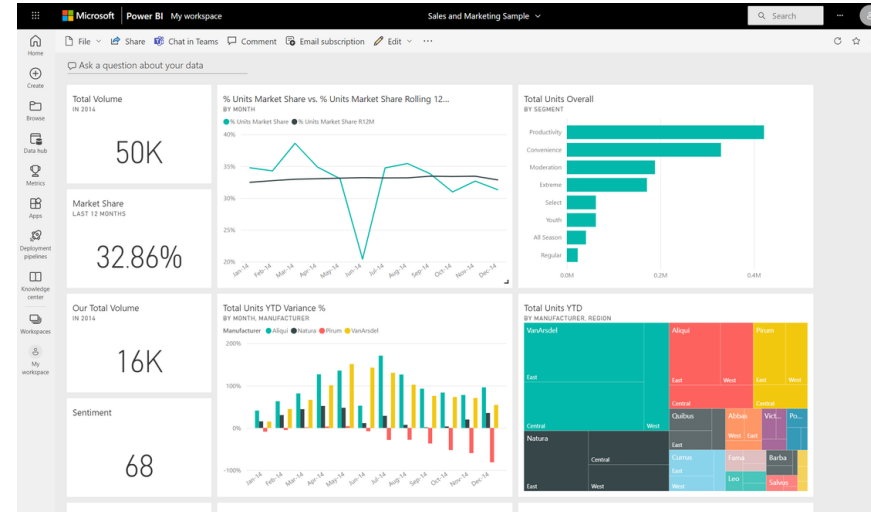
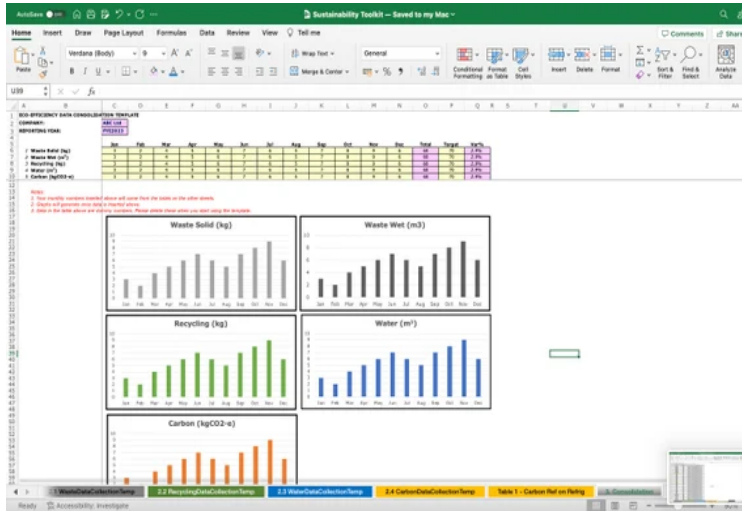
### Pulp Sourcing



### Clean Manufacturing



# Tools



# AI Tools

**Watershed** Platform Solutions Customers Resources Sign in Request a demo EN (US)

ENTERPRISE SUSTAINABILITY

## Sustainability programs with impact

Decarbonize your business. Measure, report and act on your sustainability data in one complete platform.

Request a demo → See how it works

**Reduction Plan**

Scope 1 + 2 target

800  
600  
400  
0

2020 2022 2024 2026 2028 2030

- Historical
- Forecast
- SBT requirement
- Your target
- Forecast with initiatives
- Gap to target

**CLARITY AI** Solutions Our Mission Use Cases Insights Contact Log in Request A Demo

Clarity AI Named a Leader in ESG Data and Analytics [DOWNLOAD REPORT](#) →

## One Platform, Fully Customizable

**Sustainability Tech Built-in for Your Specific Needs.** Whether you need a comprehensive, customizable, fully-packaged Sustainability Tech Platform or just one data point to ensure regulatory compliance, Clarity AI empowers you to efficiently and confidently assess, analyze and report on anything valuable to you or your clients and everything required by regulation.

Impact Risk Climate Regulatory Compliance

**Integrated Directly Into Your Workflow**

seamlessly integrates into your workflow via API or our web app and is the only scalable, flexible end-to-end SaaS tool able to address any sustainability use case.

**PERSEFONI** Products PersefoniAI Customers Pricing Resources Request demo Sign up free

## Carbon Footprint & Sustainability Reporting

Respond with confidence to disclosure requests from customers, investors, and regulators.

Sign up free → Request demo →

**CLIMATE PROFILE**

**Plato Corp.**

958,356

**Recommended Disclosures**

TCFD SEC GHG Emissions Disclosure CDP GHG MHI Gen-011

Replay

## Considerations When Selecting Tools

- cost
- user-friendliness
- integration
- scalability
- data privacy
- security



## Addressing Challenges: Risks and Trade-Offs



## Data Quality and Privacy



Incomplete or Inaccurate Data

Ownership & Accountability

Consistent Standards & Validation



Sensitive Information

GDPR / Other Regulations

Balancing Transparency &

Compliance

*Garbage in,  
garbage out*

“WIND BEATS COAL BY ANY ENVIRONMENTAL MEASURE, BUT THAT DOESN'T MEAN THAT ITS IMPACTS ARE NEGLIGIBLE.”

*David Keith, Professor of Applied Physics at the Harvard John A Paulson School of Engineering and Applied Sciences*

# The Sustainability-Energy Paradox

Data Centers' High Energy Use

IoT & Sensor Networks

Short Hardware Lifecycles

vs.

100% Renewable energy

Optimizing Storage

Efficient hardware

Flexible workloads

## Cultural & Organizational Barriers

- Siloed Teams
- Lack of Leadership Buy-In
- Resistance to Change



Accountability

Shared wins

# Summary

# Takeaways



<p><b>DATA-DRIVEN DECISIONS</b></p>	<p>Using real-time metrics, predictive analytics, and transparent reporting leads to more informed decisions</p>
<p><b>DATA PROFESSIONALS ARE THE KEY</b></p>	<p>Data professional's expertise is critical to turning raw data into clear guidance for sustainability initiatives</p>
<p><b>COLLABORATION AND CULTURE</b></p>	<p>Effective data-driven sustainability is a team sport</p>
<p><b>RISKS</b></p>	<p>Data quality (garbage in-garbage out) and privacy are key topics in future organizations</p>
<p><b>CONTINUOUS IMPROVEMENT</b></p>	<p>Sustainability isn't a static goal. It's an ongoing process of measuring, analyzing, and refining strategies</p>

## Next Steps

1. Identify a Pilot Project
2. Gather & Validate Data
3. Engage Stakeholders
4. Track Progress & Iterate

*TIPS:*

*Keep it concrete*

*Assign project lead*

*Use resources*

## More resources

[World Resources Institute](#) (WRI) – Research, data tools, and policy analysis on climate, forests, water, and more.

[CDP \(Carbon Disclosure Project\)](#) – Global disclosure system for companies, cities, and governments to manage environmental impacts.

[GHG Protocol](#) – Widely used frameworks for measuring and managing greenhouse gas emissions (Scopes 1, 2, and 3).

[Global Reporting Initiative](#) (GRI) – International standards for sustainability reporting, including data-driven indicators.

“How to Measure Anything” by Douglas Hubbard – Book that teaches practical techniques to quantify intangibles and make data-driven decisions.

[IPCC \(Intergovernmental Panel on Climate Change\)](#) – Comprehensive scientific reports on climate change, its impacts, and mitigation strategies, using large-scale data models.

[EPA’s Life Cycle Assessment \(LCA\) Resources](#) – Guidance, tools, and databases for evaluating environmental impacts across a product’s lifecycle.

[Watershed](#) – Carbon accounting and management platform that uses data analytics to help businesses track and reduce emissions.

[Persefoni](#) – Enterprise carbon management software that leverages AI to measure, monitor, and reduce carbon footprints.

[Climate Neutral Data Centre Pact](#) – Industry initiative aiming to make data centers in Europe climate-neutral by 2030 through energy

 Co-funded by the European Union | [efficiency and data transparency.](#)

# Thank you for your time

## Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Copyright © 2024 Digital4Sustainability. The resources contained herein are publicly available under the Creative Commons license 4.0 B.Y.



Co-funded by  
the European Union