



# Carbon Footprint Tracer

**A Product Carbon Footprint Solution  
Compliant with Carbon-Neutral  
Regulations Starting 2026**

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DX/IT Consulting Division

# Executive Summary

OpreX<sup>\*1</sup> Carbon Footprint Tracer (CFT) enables precise carbon footprint calculations for products by collecting actual data from plants and factories, analyzing it in a cloud data lake using a BI Tool, and seamlessly integrating with SAP SFM<sup>\*2</sup>.

## Challenge

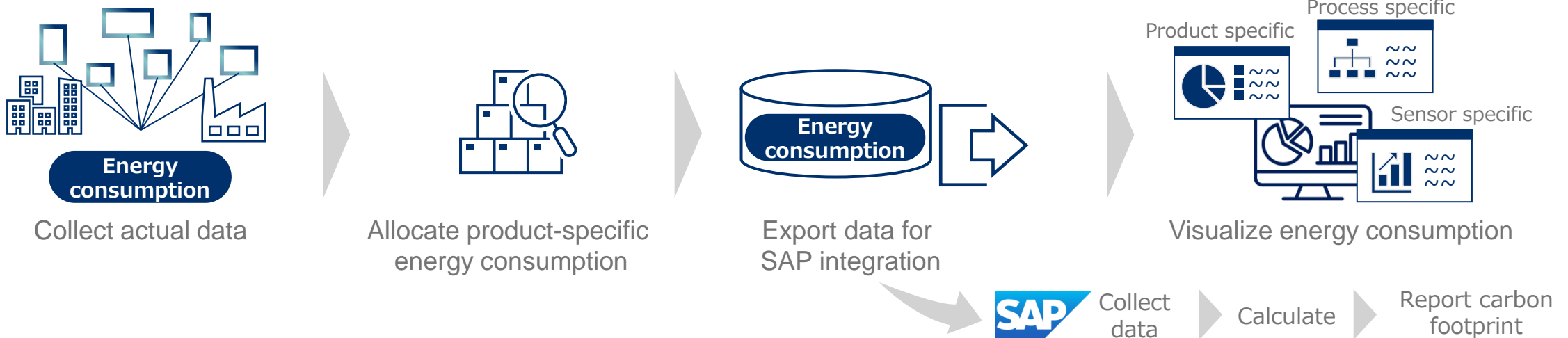
To fully comply with the EU Carbon Border Adjustment Mechanism (CBAM) by 2026, a shift from theoretical to actual carbon footprint calculation is essential.

## Solution

A cloud service that collects actual data from sensors and integrates the data with SAP SFM.

## Effect

Calculates product carbon footprints, adhering to national and regional regulations, and enhances improvement initiatives through visualization.



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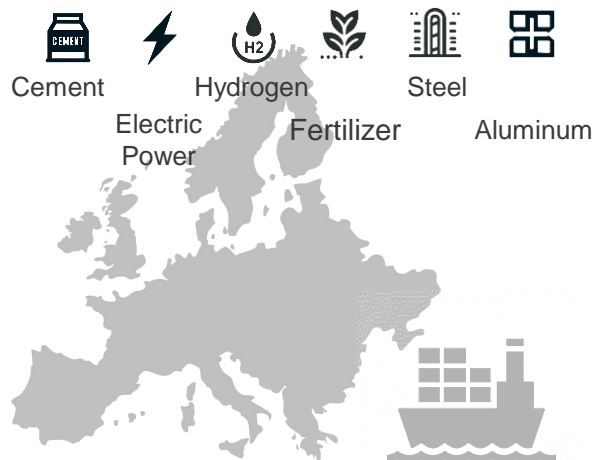
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# Key Points and Impact of EU Regulation

Starting in 2026, carbon footprint reporting will require calculations based on actual data. Non-compliance could lead to substantial fines and sanctions.

## Present

Carbon footprint reporting of target product using **theoretical data**.

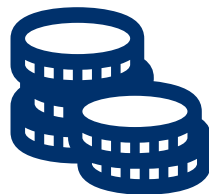


Target Import goods covered by the EU Carbon Border Adjustment Mechanism (CBAM)

## 2026 onwards

Each product's carbon footprint must be reported using **actual data**.

Hundreds of Thousands in Fines (€)



Broadening of regulated item



Chemicals



Products made from steel and aluminum

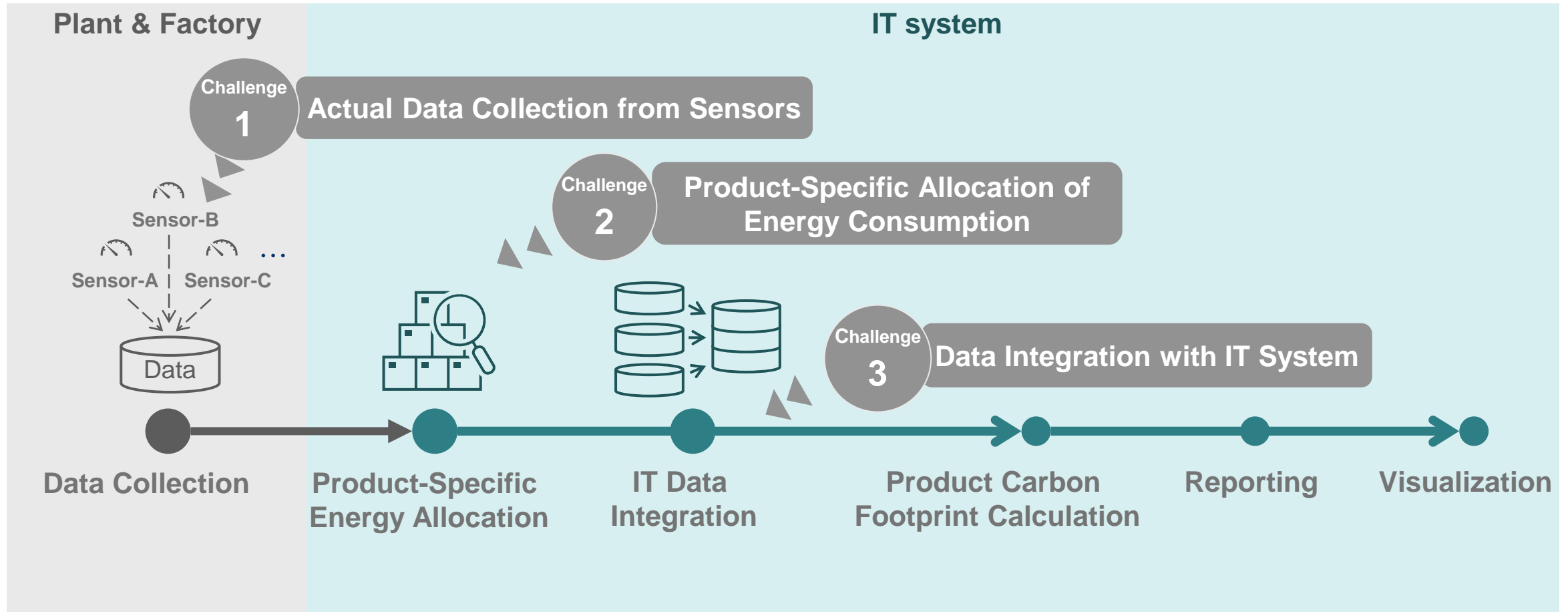
Derived from outside EU countries



\*1 Estimate of fines imposed by EU CBAM when importing aluminum into the EU that emits 20,000 tons of CO<sub>2</sub> per year. Expected fines ranging from 100 Euros to 500 Euros per tons of emissions.

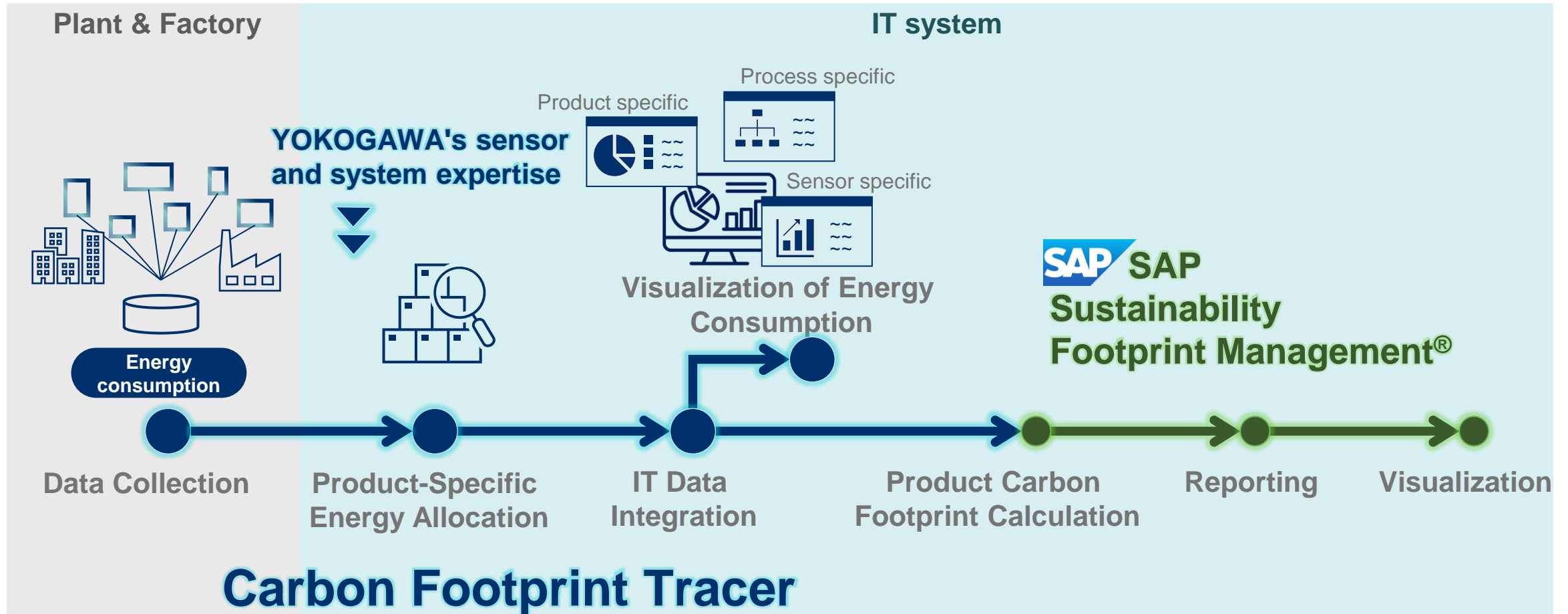
# Challenges in Collecting Actual Data

Identifying three challenges in collecting product-specific energy consumption from plants & factories and calculating carbon footprints in compliance with EU regulations.



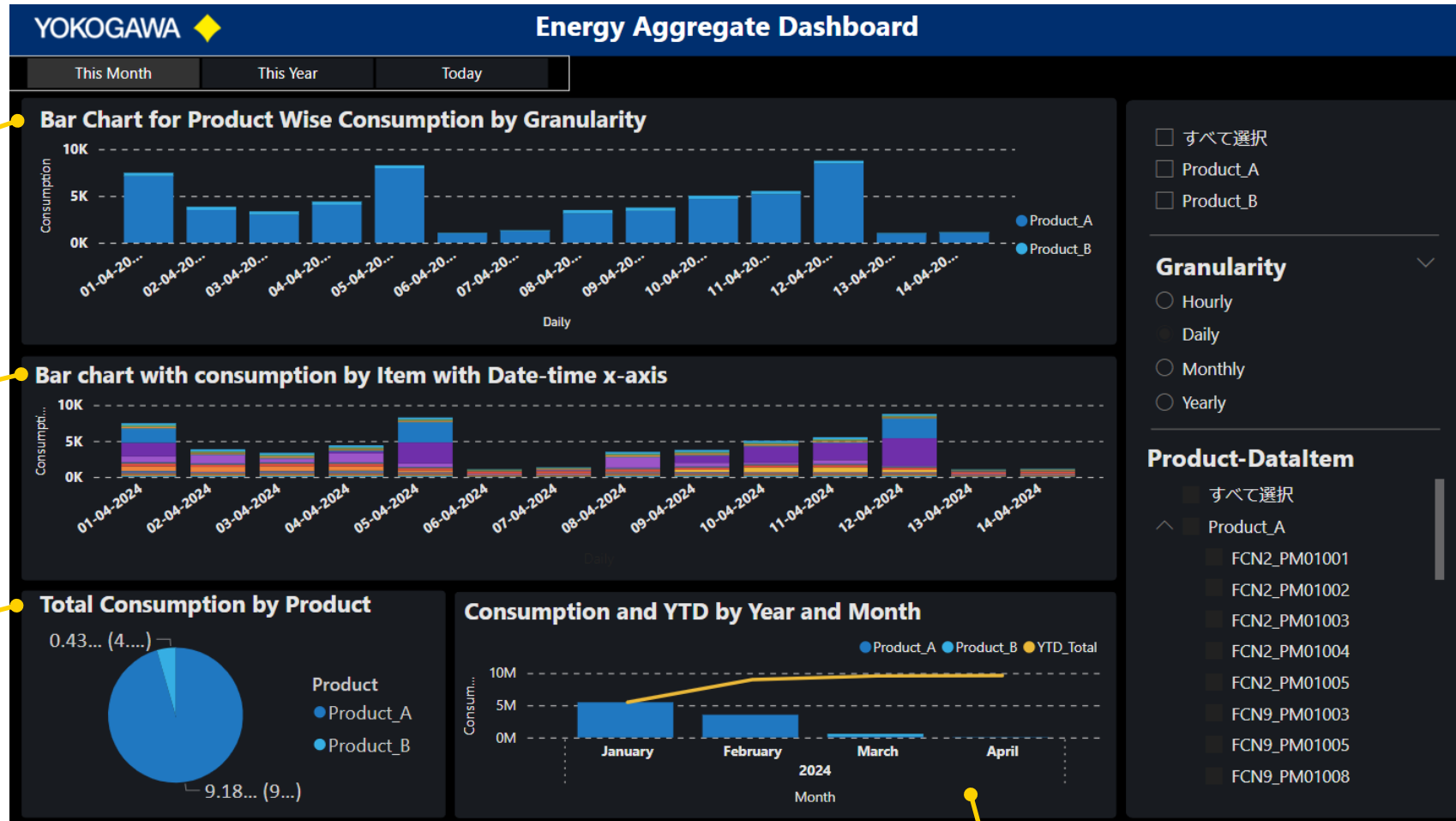
# Solutions for Product Carbon Footprint

Calculating EU regulation-compliant Product Carbon Footprints using actual data and integration with SAP SFM.



# Visualization of Energy Consumption

Displaying detailed energy consumption per product and offering drill-down views.



# Visualization of Product Carbon Footprint

Visualizing the product carbon footprints by integrating Scope 1 and 2 data collected by CFT with Scope 3 data from SAP SFM.

Upstream supply chain carbon footprint for each product's raw materials and components, compliant with Scope 3.

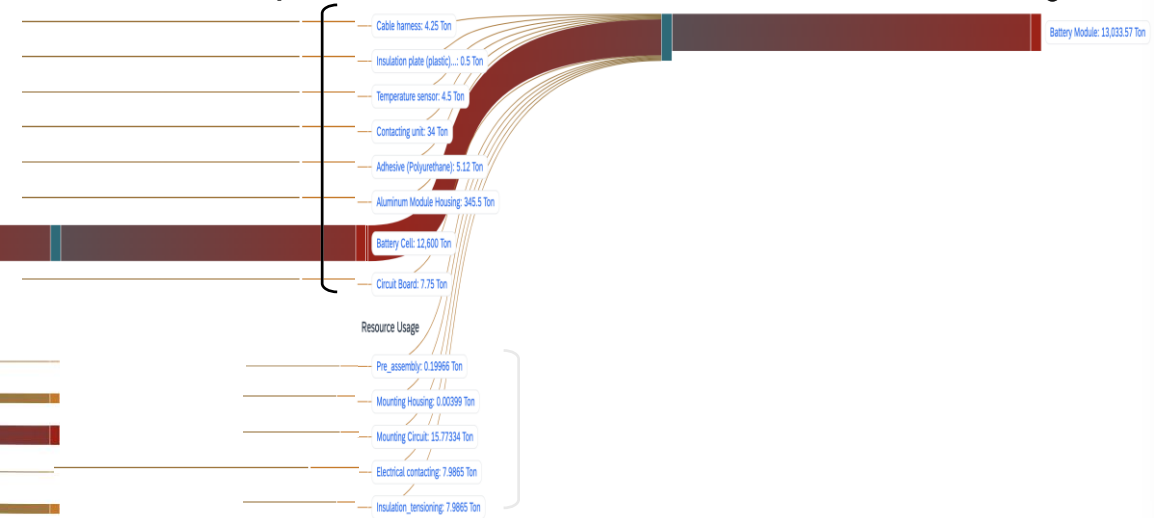


CFT

Carbon footprint associated with the operation of plants and equipment (electricity and gas), compliant with Scope 1 & 2.

Utilizing ERP data for raw materials and components.

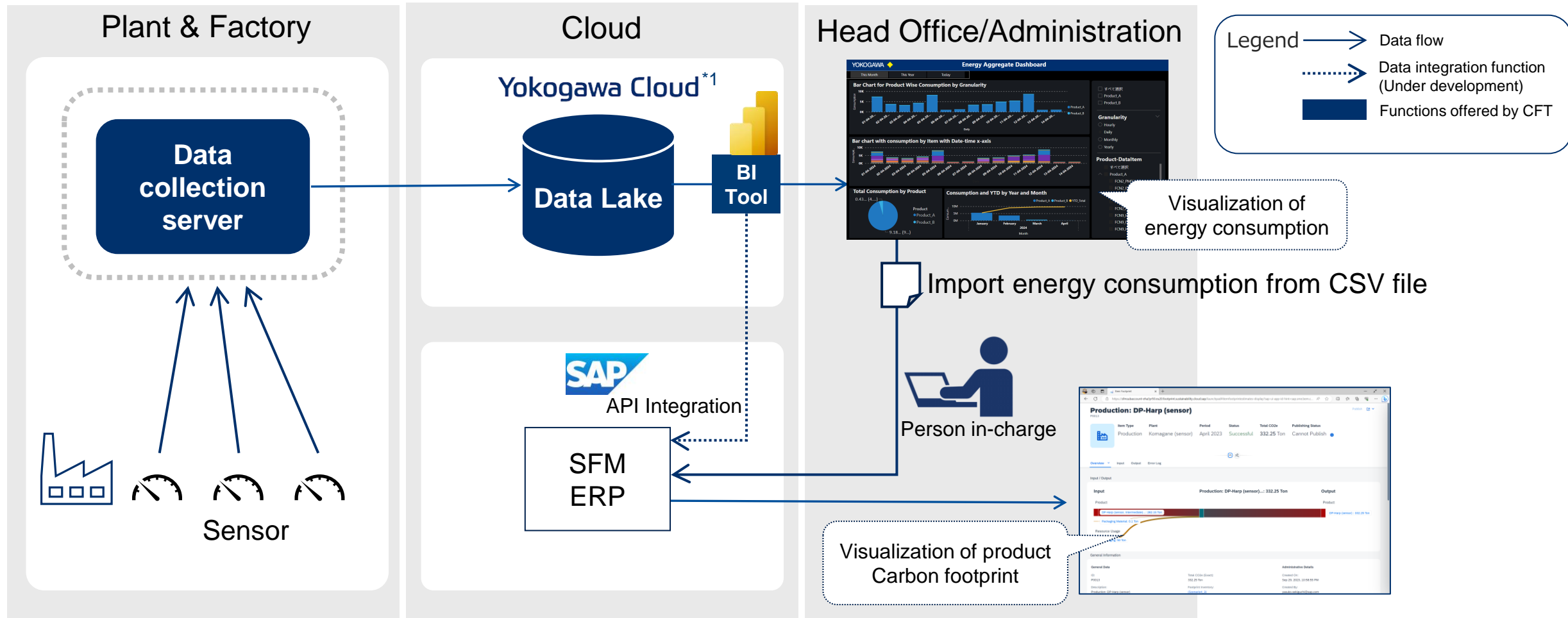
Carbon footprint of the product





# System Architecture

Comprised of Data collection server, Data Lake, and integration of SAP SFM with Microsoft Power BI.



# Implementation Steps

Comprehensive support is provided from strategy definition to post-implementation consulting for energy optimization improvements.

## 1. Strategy definition

Duration: 1 month and beyond

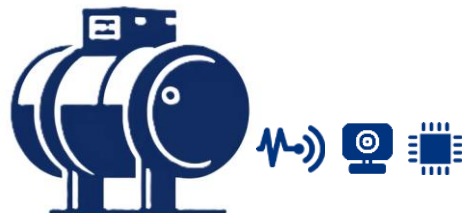
Strategy development for legal compliance



## 2. Assessment and Specification Formulation

Duration: 1 month and beyond

System specifications tailored to current needs



## 3. System Implementation

Duration: 3 month and beyond

Visualization



## 4. Improvement Consultation

Duration: Variable, depending on the situation

Optimization and emission reduction



- Selection of target products
- Determination of data collection

- Sensor installation checks  
Add equipment if there are shortages
- Specification development

- CFT implementation
- Power BI implementation
- Support and testing for CFT and SAP SFM integration

- Analysis of the current situation
- Development and implementation of improvement plans



- ERP\*<sup>1</sup> status survey

- SAP SFM implementation\*<sup>1</sup>

\*1 The implementation of SAP is the responsibility of your company's IT systems department or system integrator.

# Conditions for Implementation

**The following conditions must be satisfied for the deployment of CFT:**

## **SAP**

- ✓ SAP Sustainability Footprint Management® 1.0 is required to be in place.
- ✓ At least one of the following SAP systems must be installed:
  - ✓ SAP S/4HANA Cloud 2402 or later
  - ✓ SAP S/4HANA 2019 or later

## **Microsoft**

- ✓ A valid license for Power BI Pro or Premium must be held or procured prior to deployment.

## **Integration with Yokogawa Cloud**

- ✓ Data must be accessible through an onsite data collection server capable of interfacing with the Yokogawa Cloud.
- ✓ A secure HTTPS connection from the data collection server to Yokogawa Cloud via the Internet is required.

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