



# Trust at Scale

Building the Infrastructure  
for the Next Generation of  
Environmental Transparency

**Dr Hüdai Kara**

Metsims Sustainability Consulting | CageSuite

ISC2026 Innovation Showcase



# Industry operates in portfolios

600+

product formulations

KimPUR

Changing suppliers

Different plants

Evolving products

Environmental information as infrastructure



**LCA is becoming fast. Very fast.**

**But what exactly  
are we scaling?**

Which supplier?

Which location?

Which technology?

Which transport?

Which waste system?

Which assumptions?

**A precise calculation using unrepresentative data  
is still an unrepresentative result.**

# Specificity at Scale

## Industrial knowledge, made reusable

AI helps us build  
and maintain it

**Global methodology. Local intelligence.**

### **Sector**

Production logic and product families

### **Company**

Formulations and plant records

### **Process**

Energy, yields and waste

### **Supplier**

Materials and upstream evidence

### **Location**

Electricity, transport and local systems

# Global methodology. Local intelligence.

BAFU

localisation for Türkiye

Established database

Local evidence

Expert review

| Inventory element | Evidence to localise                    |
|-------------------|-----------------------------------------|
| Electricity       | Generation mix and supply conditions    |
| Transport         | Modes, fuels and representative routes  |
| Waste             | Treatment routes and recovery practices |

AI helps structure the evidence. Experts assess applicability.



powered by cageSUITE  
from Metsims Sustainability Consulting

# a shared model for flexible foam



## Specific evidence

Supplier ingredient data

Formulations and plant records

Energy, logistics and waste

## Shared sector model

Agreed scope and assumptions

Consistent calculation logic

Data quality assessment

## One sector model. Many specific formulations.

Product-specific PCF and LCA, cradle to gate

Developed by Metsims for EUROPUR

# A supplier change, assessed in context

Decision: should we change the polyol supplier?

Illustrative comparison

| Comparison        | Current option             | Candidate option           |
|-------------------|----------------------------|----------------------------|
| Polyol source     | Supplier A                 | Supplier B                 |
| Upstream evidence | Current material dataset   | Candidate material dataset |
| Delivery          | Current route              | Candidate route            |
| Foam requirements | Required performance       | Same requirements          |
| Assessment scope  | Declared unit and boundary | Same unit and boundary     |

Compare the full formulation before deciding

Impact changes, data quality and performance all matter

# Reusable knowledge across applications



600+  
formulations

Company-specific models  
Formulations and  
production data



Flexible  
packaging

Materials, manufacturing  
and logistics  
Product carbon information



In  
development

Sector-specific EPD application  
Product structures and  
process knowledge

Shared principles. Models built for their context.

# How the system earns trust

**Can we explain  
and reproduce  
this result?**

## **Product and context**

Specification, site, period and unit

## **Evidence**

Sources, coverage and dataset versions

## **Method**

Boundary, assumptions and calculation rules

## **Change history**

What changed and who reviewed it

## **Assurance**

What was verified, and for which version

**Trust at source. Independent assurance.**

●●●

# CageSuite: a shared foundation

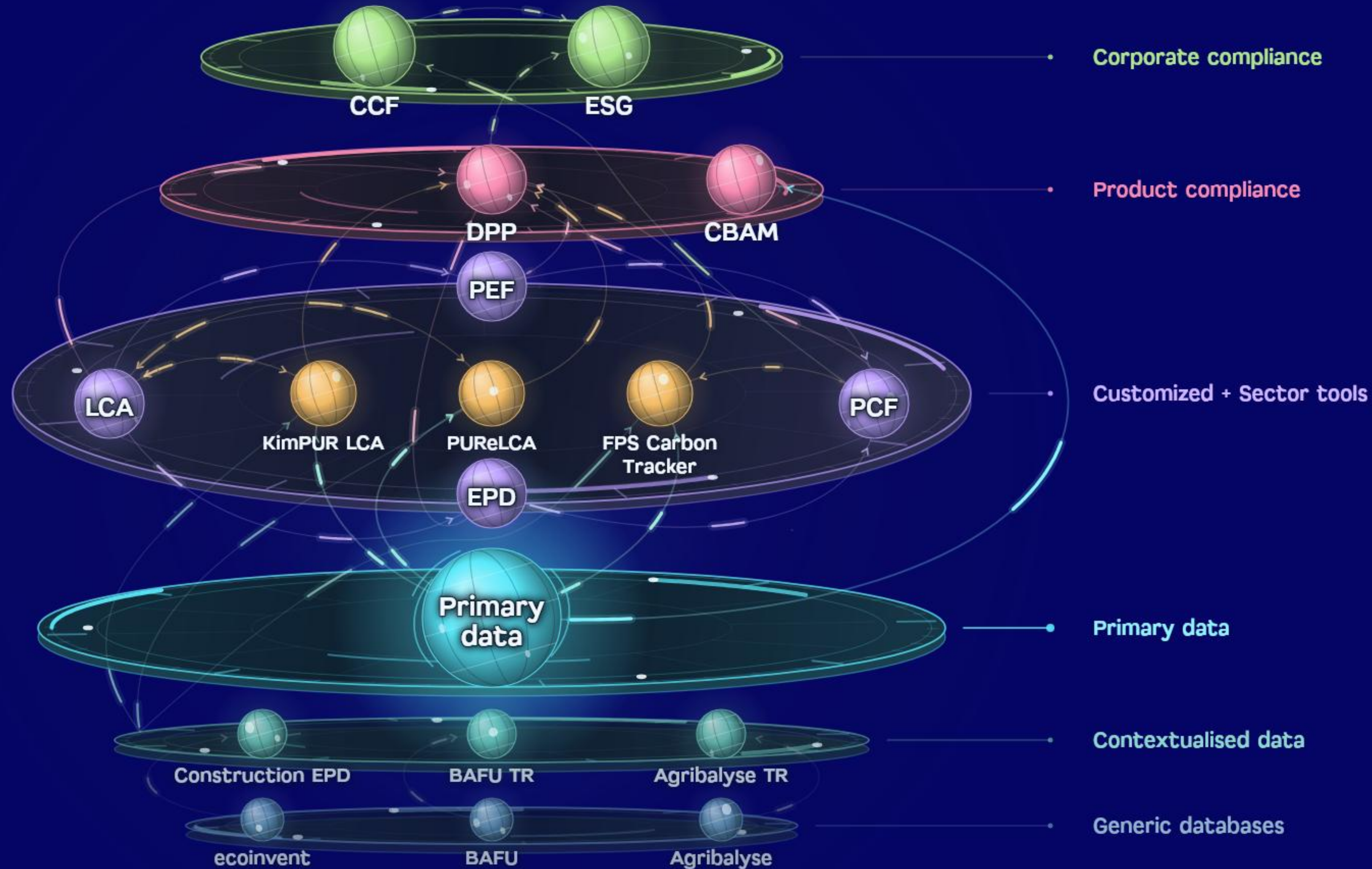
| Shared data                    | Models                      | Uses                   |
|--------------------------------|-----------------------------|------------------------|
| Materials and activity records | Product and company context | LCA and product carbon |
| Processes and facilities       | Calculation rules           | EPD preparation        |
| Environmental datasets         | Defined scenarios           | Procurement and design |

**Reuse suitable data. Apply the rules for each output.**

Digital product information is a further direction for reuse

# CageSuite Sustainability Platform

Shared evidence across product and corporate applications



- One platform. Continuous data flow.

# A sector pilot for India and Southeast Asia

## One priority sector

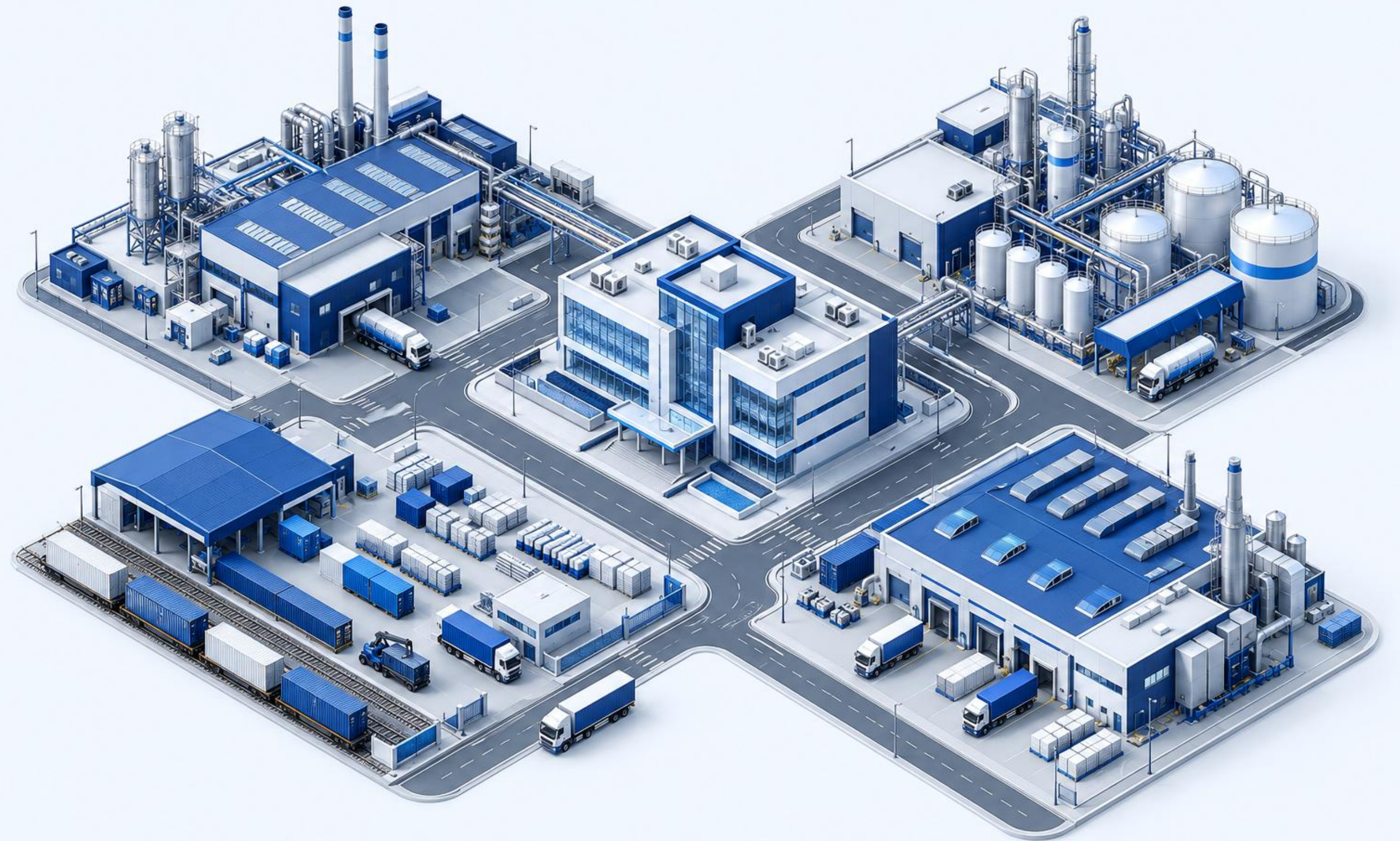
Manufacturers, suppliers  
and local experts

Local evidence

A shared model

Ongoing stewardship

A practical starting point for collaboration





# Trust at Scale

Making industrial  
knowledge scalable

**Evidence. Context. Credibility.**

**Dr Hüdai Kara**

Metsims Sustainability Consulting | CageSuite