Aluminium

Forging Strength through Low Carbon Intensity

See, understand, manage and share carbon data

Improve your corporate CaRMa* across processes, products and value chains with CarbonSIG

*Carbon Resource Management

CARBON SIG

CI Carbon Intensity

Emerging key product attribute

Product Carbon Intensity (CI) has emerged as a pivotal attribute in assessing a product's environmental impact, standing shoulder to shoulder with traditional metrics like price, weight, or volume.

It quantifies the sustainability of a product by measuring the grams of carbon dioxide (CO_2) emitted in the production of one unit.

This metric illuminates the carbon footprint of products and supply chains. It provides clear view of their contribution to corporate and global carbon emissions beyond colors and thus their environmental sustainability.

Wins of knowing product Carbon Intensity (CI)

Meet customer demands for sustainable products

Consumers are increasingly environmentally conscious, seeking products aligned with their values. Knowing the CI of your products lets you meet this demand, offering transparency and building trust with consumers who prioritize sustainability. CI attributes can be a determining factor in building and maintaining consumer trust relationships and engagement.

Aligning with corporate sustainability goals

Measuring and understanding product CIs and how carbon flows through your operations, helps your company identify areas where operational carbon impacts can be reduced, aligning product development and innovation with broader sustainability objectives. This helps achieve corporate targets and enhances brand reputation showing sustainability leadership. Operational carbon resource management lets the entire organization see and understand their connection to carbon reduction.

Complying with local and international regulations

Governments around the world are tightening regulations on carbon emissions and product labeling. Knowing your product's CI ensures compliance with evolving standards. Proactive approaches to carbon resource management with CIs prevents potential legal challenges and fines, ensuring smooth market access and operations.

Driving innovation and competitive advantage

Understanding CI lets you see carbon flows and can spur innovation in product development and operational processes, pushing companies to find cleaner, more efficient ways to produce their goods. This can lead to a significant competitive advantage, positioning your products as preferred choices for eco-conscious consumers and partners.

Enhancing supply chain sustainability

Knowing the CI of products lets businesses see and optimize supply chains for sustainability, choosing suppliers and materials with lower carbon footprints. This holistic approach to carbon management can significantly reduce overall emissions and foster a culture of environmental responsibility across the value chain. Carbon resource management with CI's lets you clearly signal to suppliers expectations and opportunities.

Facilitating carbon offsetting and neutrality efforts

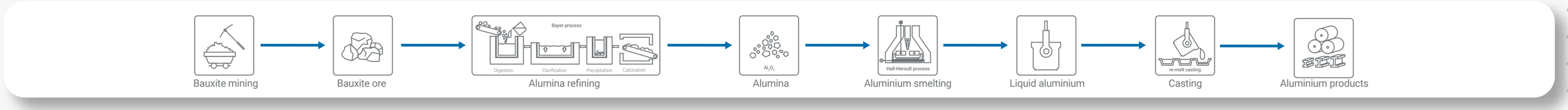
With accurate CI data, companies can effectively plan and implement carbon management initiatives that may include environmental instruments such as credits (where acceptable) to achieve carbon reduction or neutrality for their products, further solidifying their commitment to combating climate change and building relationships with carbon conscious consumers.

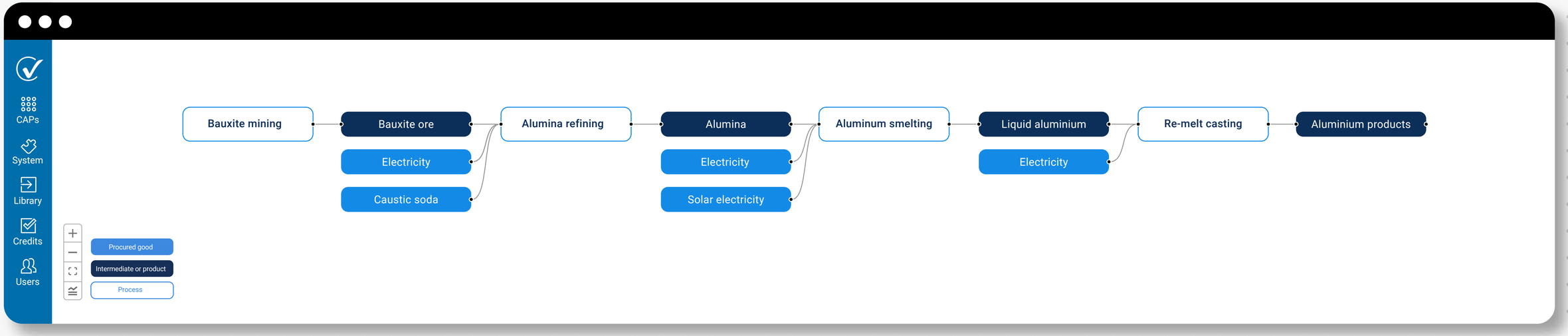
Carbon Intensity (CI) managed for value creation

See, understand, manage and share carbon data across processes, products and value chains with CarbonSIG

Build your initial system & model any pathway by adding elements

Recreate your value chain and/or production pathway





Digital Twin Builder

The **Digital Twin Builder** offers a virtual replication toolkit enabling the creation of **digital twins** for any product or service. It combines **customization** options for **precise modeling,** a vast **templates** database for accelerated **development** and **scalability** features to match the **granularity** of various industries.
This tool is a cornerstone for businesses aiming to **visualize** and **analyze** their carbon footprint in unprecedented detail.

Granularity and proof

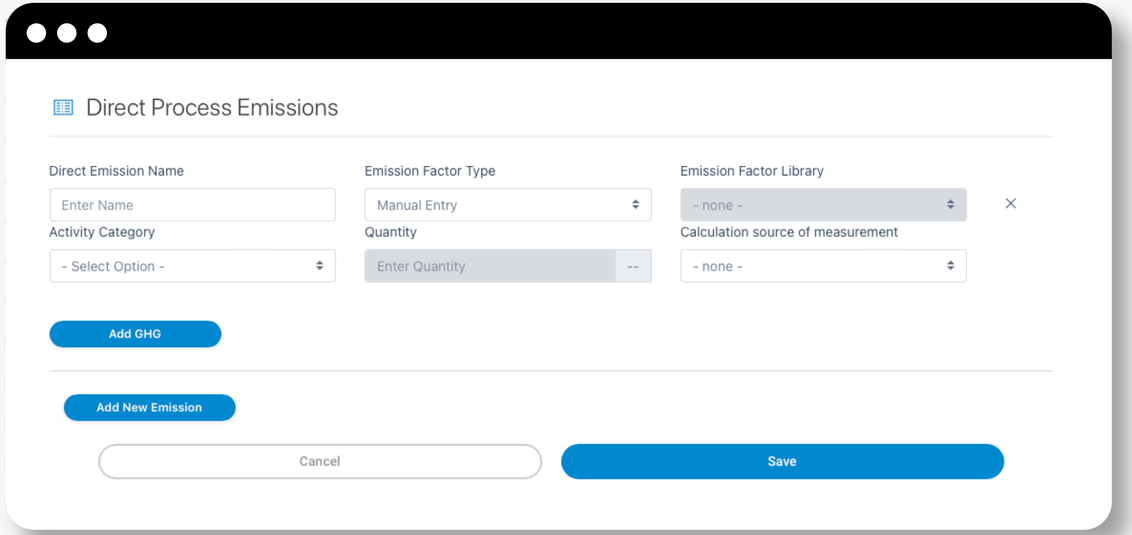
Add unique features of a process, such as carbon capture, offset use and use of renewable energy resources. These can be supported with 3rd party certificates to support the environmental claims well beyond the basic "color' labels.

The elements collectively define the product's carbon intensity, offering a high quality calculation and presentation of environmental impact.

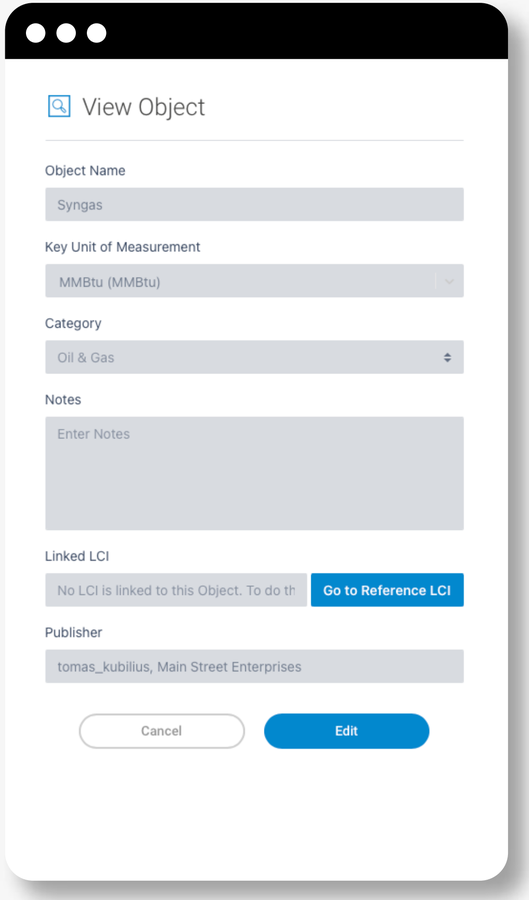
Integrate carbon data

Populate the system model from multiple sources

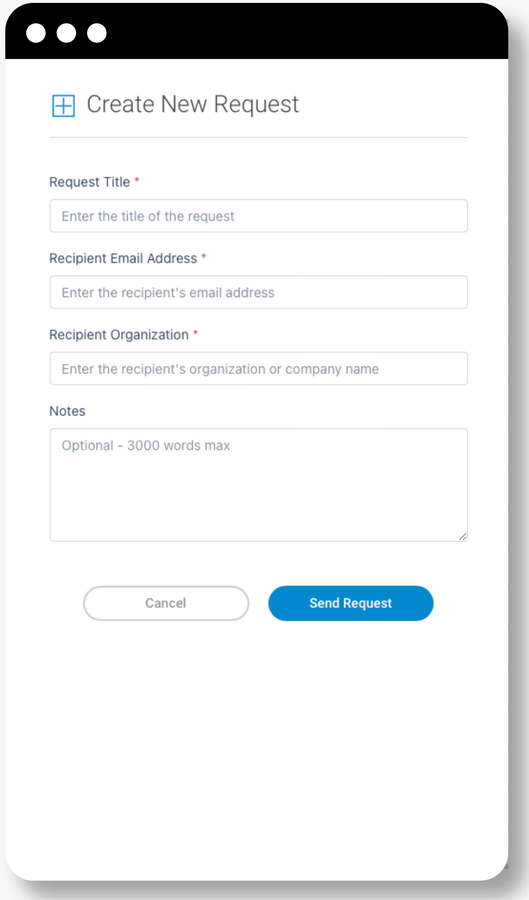
Process emissions



Object emissions



Supply chain emissions



CarbonSig provides a seamless way to incorporate diverse sources of data into models. CarbonSig has **integrated carbon reference databases**, supply chain **vendor survey** capabilities, ingestions from corporate systems such as **SAP** and other systems, inclusion of **emissions factor** datasets and **environmental attribute** certificates. This data integration aids in **rapid high quality** system **modeling** and **twinning**. Don't see the dataset you need, let us know, we are always looking to add new data sets to the platform.

Data sources & carbon data output

Chose the best available sources to match your data quality needs and goals.

Automated / Manual / Built in libraries

EPA United States Environmental Protection Agency

FEDERAL LCA COMMONS

RFI
Vendor survey

PACT PARTNERSHIP FOR CARBON TRANSPARENCY

exiobase

CDP DISCLOSURE INSIGHT ACTION

SAP

ecoinvent

LCA

EPD®

GRI

WIOD

CARBON SIG

Supports any specificity

Spend-based

Currency spent / product category × GHG conversion factor

Supplier corporate footprint

Supplier's related corporate emissions/reported production units × product unit of measurement

Reference product footprint

Product unit of measurement × industry average product carbon footprint

Supplier provided product footprint

Product unit of measurement × reported product carbon footprint

Attested product certificates*

Digital twin of supply chain product carbon footprints registered in CarbonSIG

* unique to CARBON SIG

Product carbon intensity

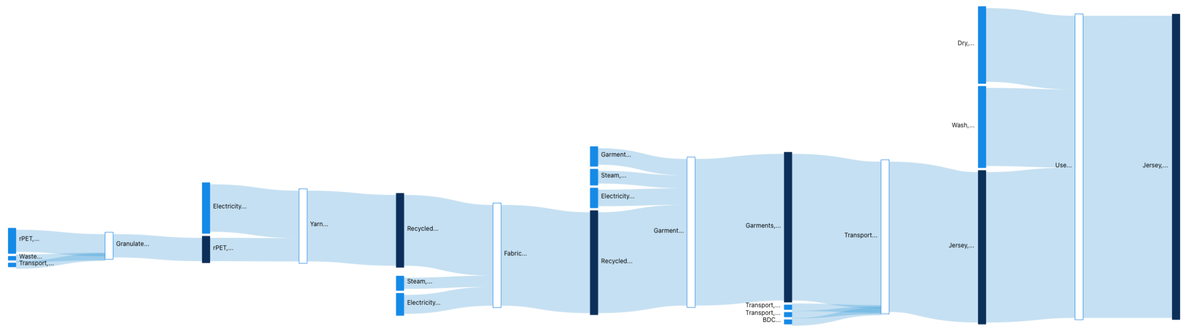
See, understand and share your products CI.

Rank weight contributors list for Jersey, size M

Contributor	Process	Scope	Source	Sink	Credit
Wash, M jersey	Use phase, M	3	9,774.98 kg CO2e (25.85%)	-	-
Dry, M jersey	Use phase, M	3	9,220.21 kg CO2e (24.39%)	-	-
Electricity	Yarn production	2	5,940.53 kg CO2e (15.71%)	-	-
rPET, granule	Granulate production	3	2,761.63 kg CO2e (7.3%)	-	-
Electricity	Fabric production	2	2,363.85 kg CO2e (6.25%)	-	-
Electricity	Garment assembly	2	2,071.7 kg CO2e (5.48%)	-	-
Garment packaging	Garment assembly	3	2,061.5 kg CO2e (5.45%)	-	-
Steam, purchased	Garment assembly	2	1,600.04 kg CO2e (4.23%)	-	-
Steam, purchased	Fabric production	2	1,394.37 kg CO2e (3.69%)	-	-
Transport, shipping	Transport to warehouse	3	166.63 kg CO2e (0.4407%)	-	-
Transport, land	Transport to warehouse	3	162.18 kg CO2e (0.4289%)	-	-
BDC cardboard box	Transport to warehouse	3	138.37 kg CO2e (0.366%)	-	-
Transport, land	Granulate production	3	78.9 kg CO2e (0.2087%)	-	-
Waste PET landfill	Granulate production	3	74.21 kg CO2e (0.1963%)	-	-

Carbon Emissions Flow for Jersey, size M

Sources



Product Carbon Calculation

Simplifies precise emissions quantifications, generating Carbon Attested Products (CAPs) for registry publication. All bolstered by support for 3rd party verification.

Product Insights & Analysis

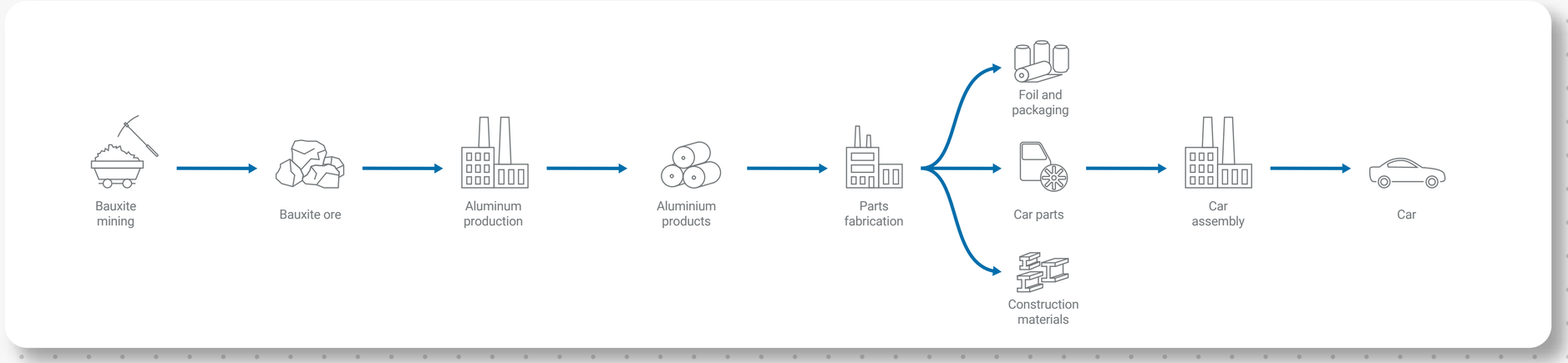
Offer unparalleled visibility into carbon metrics, identifying emissions hotspots, sources and the entire value chain's impact for targeted reduction strategies.

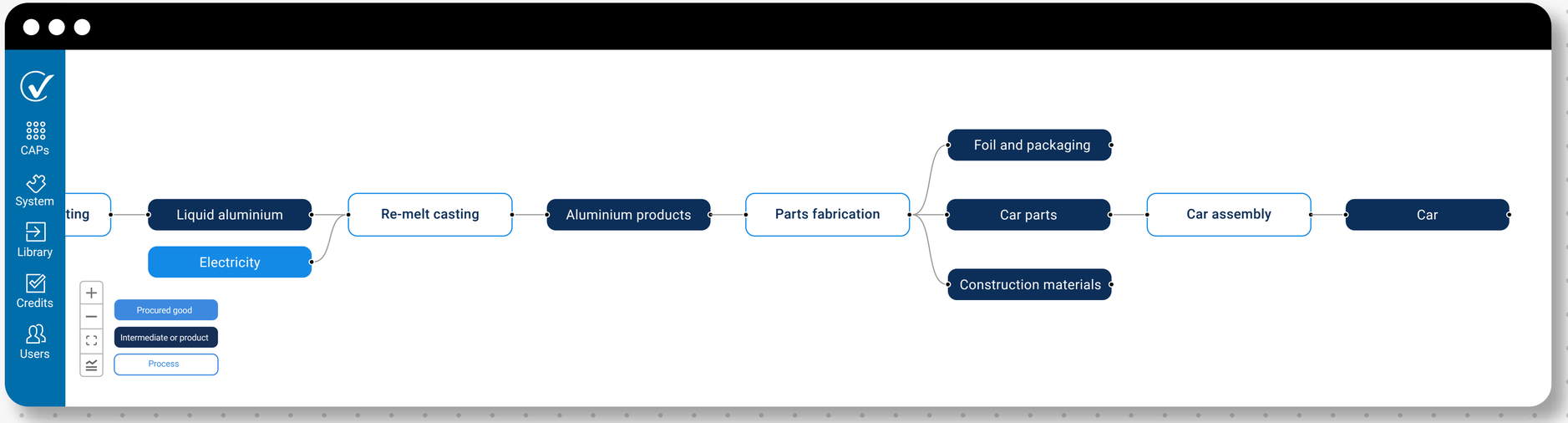
Sharing

One click secure or public sharing of high quality interactive reports and views with team mates inside and outside of the enterprise using secure sharing and when required obfuscation of sensitive information.

Value chain / scenario modeling

See carbon flows and model “what if” scenarios





Modeling & management

These two features allow your entire organization to focus on taking action.

Scenario planning empowers supply chain analysis, processes and input optimization along with decarbonization strategies geared towards cost savings, reaching sustainability goals and creating premium low carbon solutions.

Your Milestones - Our Mission

Setting new standards: Achievements unlocked during CarbonSIG soft launch

16MM

Metric tons embodied CO2e calculated

40

Industrial & FMCG products digitally twinned

27

Chemical facilities mapped

59

Industrial processes & production pathways modeled

23,500

Reference data points available

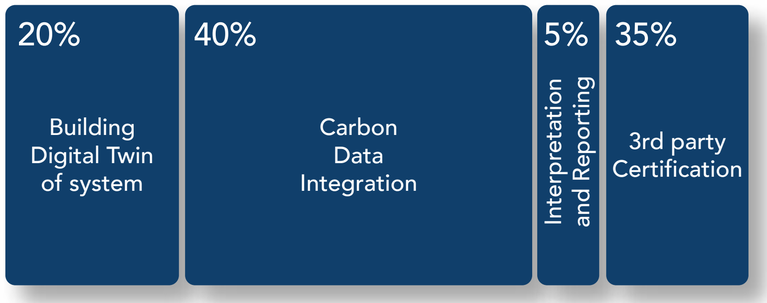
3rd party audited & certified calculation methodology

Save time and unlock CaRMa

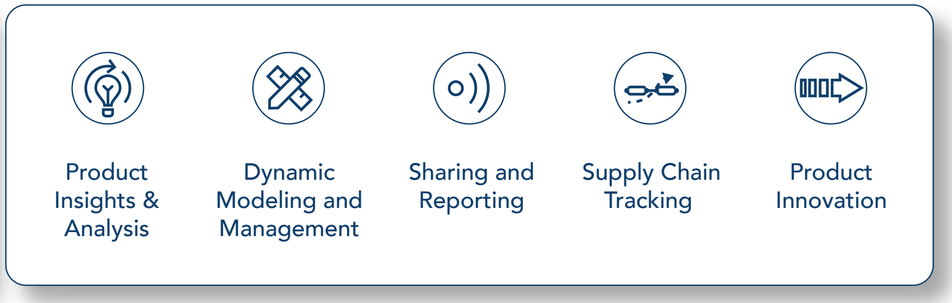
Carbon Resource Management - Leverage your carbon edge.

Product Carbon Intensity (CI) with CarbonSig

Average time 3 - 4 month

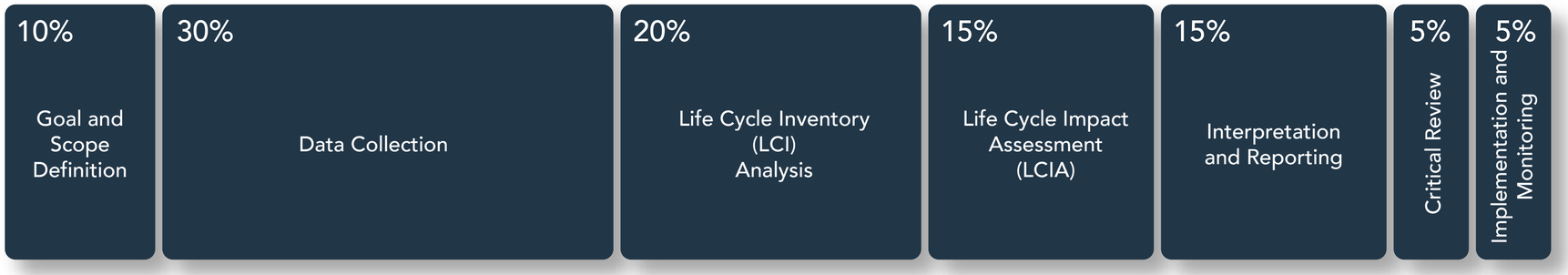


CaRMa (Carbon Resources Management) capabilities



Product Carbon Footprint (PCF)

Average time 6 - 10 month



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Thank you

For more information please contact ng@carbonsig.com
www.carbonsig.com