

Product Sustainability

Targeting at least compliance, aiming at maximizing positive impacts from your products.



Here are the main reasons why you should consider Arcadis' support



Anticipate evolving regulatory framework.

Arcadis' regulatory assessment and monitoring allows a better understanding of the interlinkages between the different regulatory instruments related to product and corporate sustainability (2024 – ...).
Anticipate the impacts of (upcoming) legal requirements on your business.



Navigate the diversity of product sustainability assessment frameworks and solutions.

Besides the lack of harmonization in impact assessment frameworks, you are facing a boom of suppliers in LCA, PEF, GHG accounting digital solutions.
Arcadis support stakeholders' goals and needs definition, identifies the relevant methodology and, where applicable, select the relevant technology partner.



Manage costs reduction pressure against your customers' requirements for sustainability performance.

Arcadis support your stakeholders in the definition and implementation of a strategy that safeguards your sustainability commitments in a context of costs reduction.

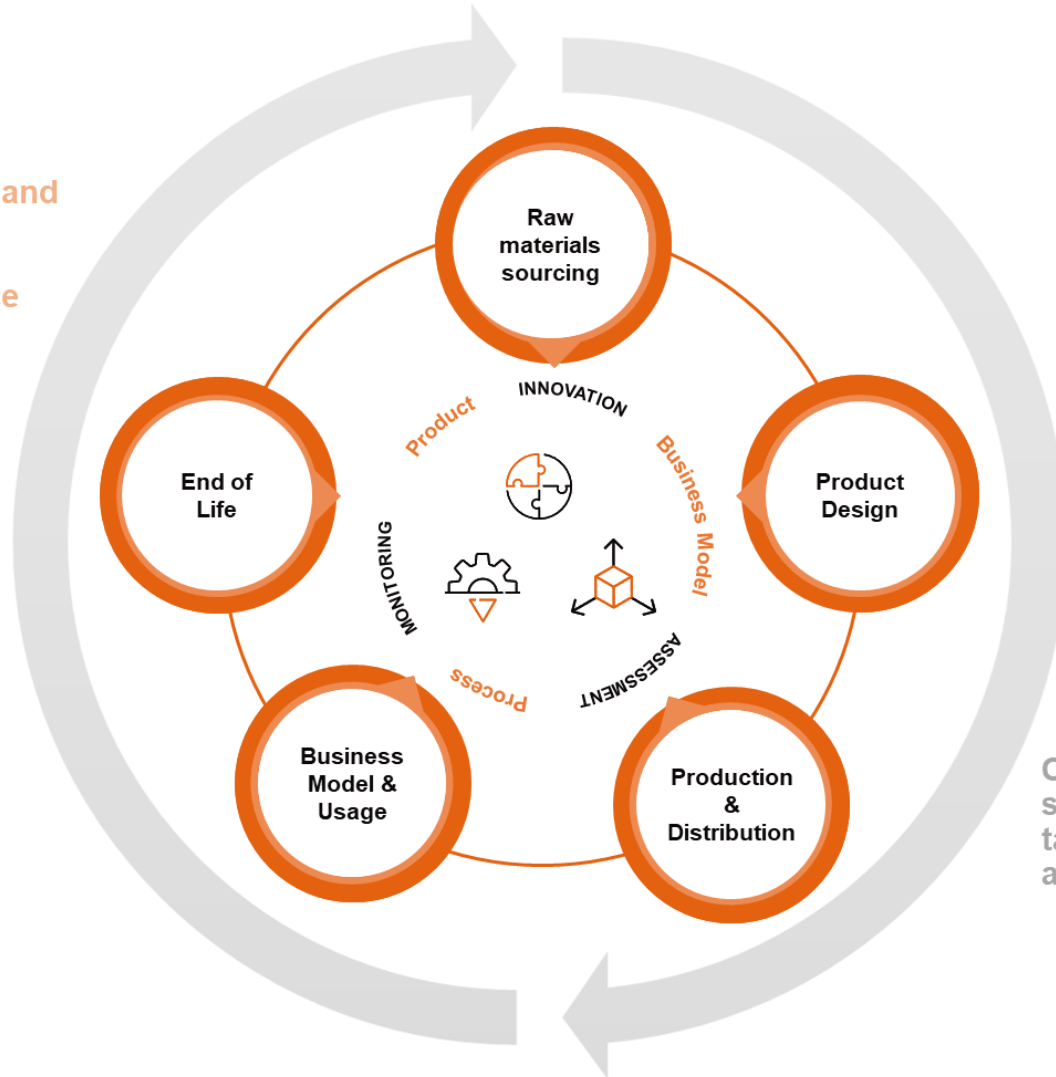
Arcadis is your **partner** to transform your business, working together to **exceed compliance** by crafting and executing your **product sustainability strategy**.



Product sustainability is at the crossroad of product compliance and organizational sustainability reporting obligations.

It is the showcase of a company's performance towards its customers.

Regulators and Customers' request for performance reporting



Organisation's sustainability target setting and monitoring

Our value proposition



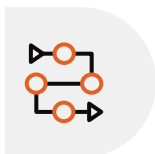
Technology agnostic partnership to focus on fit-to-purpose solutions



Anticipate market and regulatory evolutions impacting your business



Shape a better **understanding** of your data and operational requirements

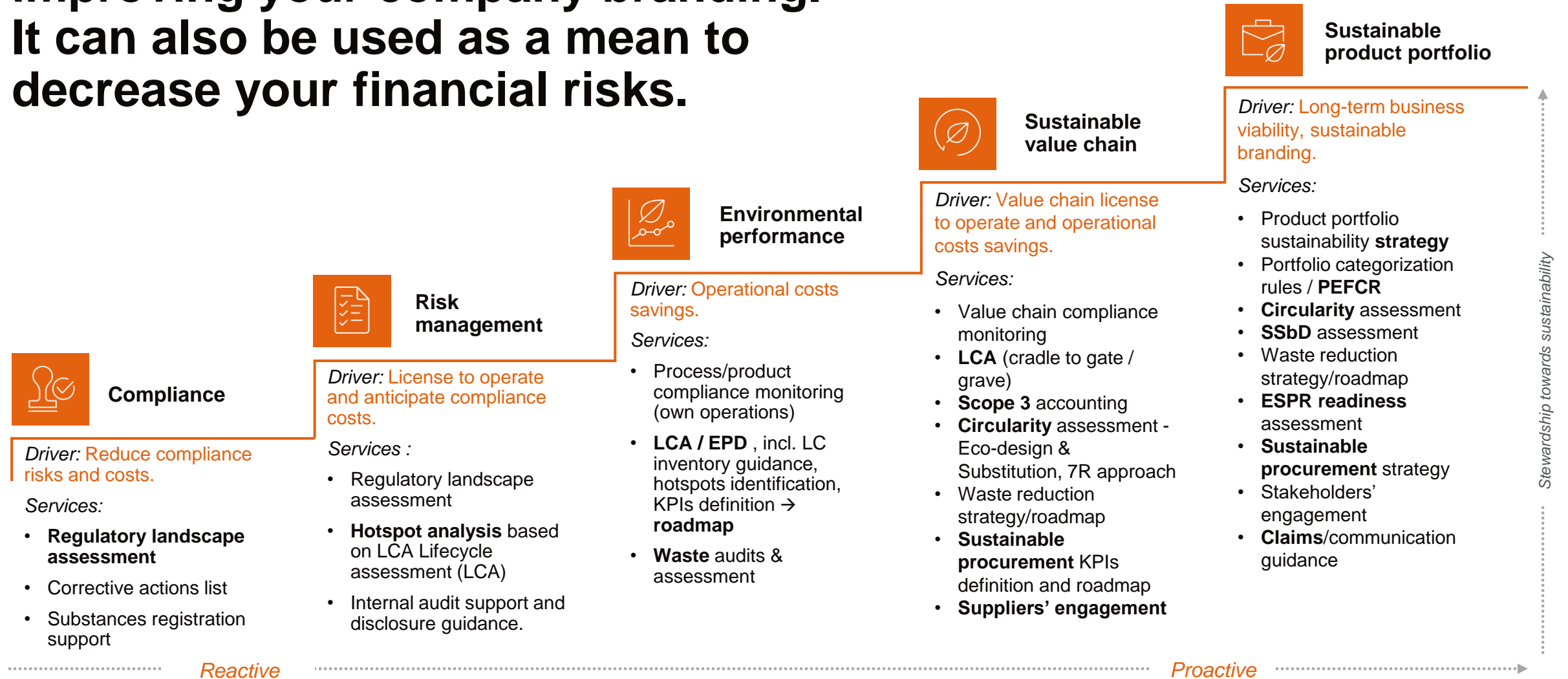


Detect risks and opportunities in your upstream and downstream value chain



Make well-informed **strategic decision**

Product sustainability does not only aim at improving your company branding. It can also be used as a mean to decrease your financial risks.





Regulatory landscape assessment

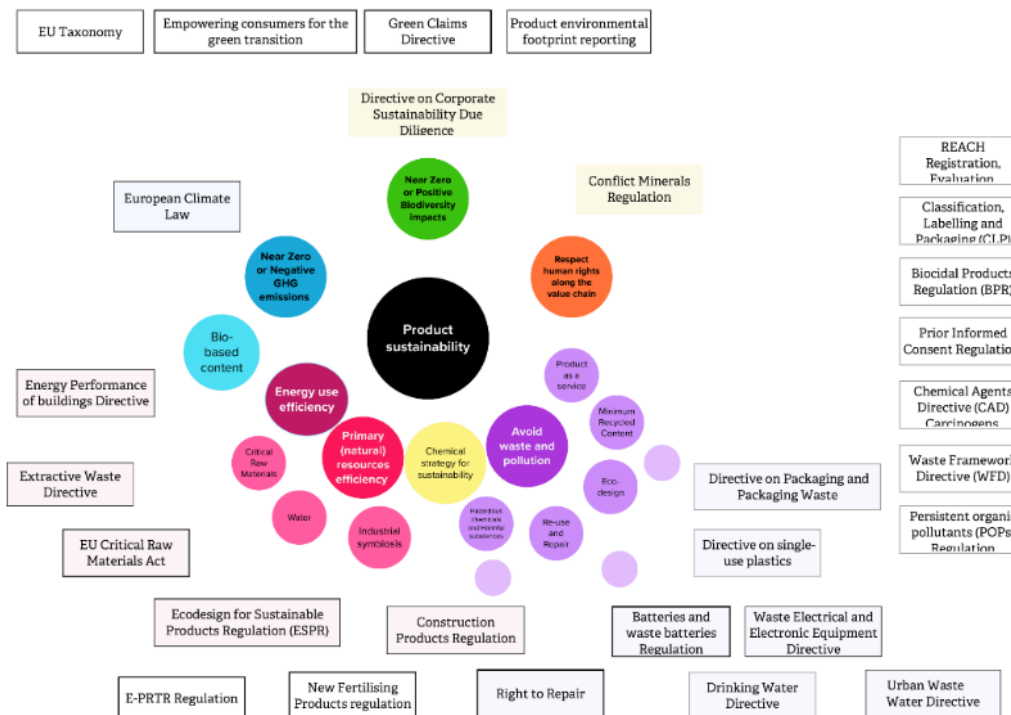
What we offer:

- Monitor global changes in product regulations or local implementations of product environmental requirements
- Filter relevant information, translate in priorities, timelines, and costs
- Evaluate the business impact of upcoming regulatory changes

How we do it:

Tailored to the needs and interest of the client: conduct ongoing or periodical monitoring on certain legislation types, chemicals, markets or for certain product types, using client subscriptions or Arcadis sources.

Circular Economy action plan



Targeted substances	Expected changes	Chemicals / Products in scope	Tresholds / other requirements	Impact on your activities	Regulation name & reference	Timeline	Additional notes
---------------------	------------------	-------------------------------	--------------------------------	---------------------------	-----------------------------	----------	------------------



Product or Portfolio Sustainability Roadmap



How we do it



- Product lifecycle screening
- Hotspots analysis



- Co-creation and brainstorm workshops
- Trainings



- Strategy review workshops
- Stakeholders engagement – internal and external (suppliers, clients, communities, authorities, ...)

What we offer:

- Baseline definition
- Targets setting
- Strategy definition
- Implementation roadmap



Environmental performance assessment and reporting

What we offer:

- Methodology and scoping guidance
- Product lifecycle environmental impact assessment (fit-to-purpose)
- Substantiated data for credible reporting
- Science-based action plan



How we do it

- In-depth LCAs vs. screening LCAs
- Product Environmental Footprint (PEF)
- Activity-based Footprinting (ABF)
- Environmental Product Declaration (EPD)
- Product Carbon Footprint (PCF)
- Reviewed and verified LCAs for external use
- Following ISO 14040/44:2006 / PEF / EN 15804

Our toolkit

 **SimaPro**

 **Ecochain**

One Click  

 **ecoinvent**

Chemicals
registration expertise



Product lifecycle environmental impact assessment

Arcadis aims at providing you with the most fit-to-purpose approach, while following relevant standards or methodologies.

A science-based sustainability action plan



How we do it



Scope definition is a key success factor. We support you in understanding what you need, your target, and how to achieve it.



Data gathering is a challenge for everyone. We support you in understanding what you need to collect and how.



Impact assessment is subject to selecting adequate methodologies, standards and tools. We support you with fit-to-purpose and reliable approach.



Making credible **reporting** (incl. claims) and setting-up an effective **action plan** is crucial. We support you in assessing relevancy and significance as well as compliance.



Product value chain assessment

What we offer:

- Product lifecycle environmental performance assessment
- Circularity assessment
- Scope 3 emissions accounting
- Compliance monitoring (incl. Digital passport, ESPR, Green Claims)
- Sustainable procurement guidance



How we do it



- Environmental Impact Assessments
- Lifecycle analysis
- Circularity assessment



- Scope 3 (Cat 3.1. accounting)
- Product Carbon Footprint, including upstream emissions
- Suppliers' engagement guidelines



- Assess eco-design, recyclability scenarios
- Safe and Sustainable by design approach
- Waste reduction assessment and roadmap



- Sustainable procurement KPI's and roadmap
- Certifications benchmarking
- Suppliers' engagement
- Assess product lifecycle compliance with regulations



Sustainable products portfolio management

What we offer:

- Sustainable products portfolio strategy definition
- Product portfolio categorization (PEFCR approach)
- Compliance monitoring (incl. Digital passport, ESPR readiness)
- Claims/communication guidance

How we do it



- Environmental Impact Assessments
- Lifecycle analysis
- Circularity assessment



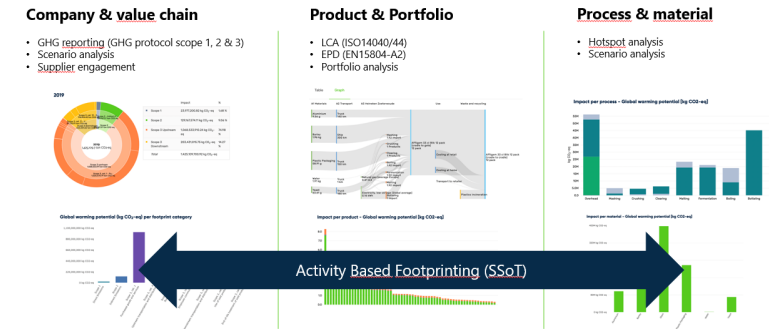
- Product Category Rules definition (PEFCR)
- Hotspots analysis



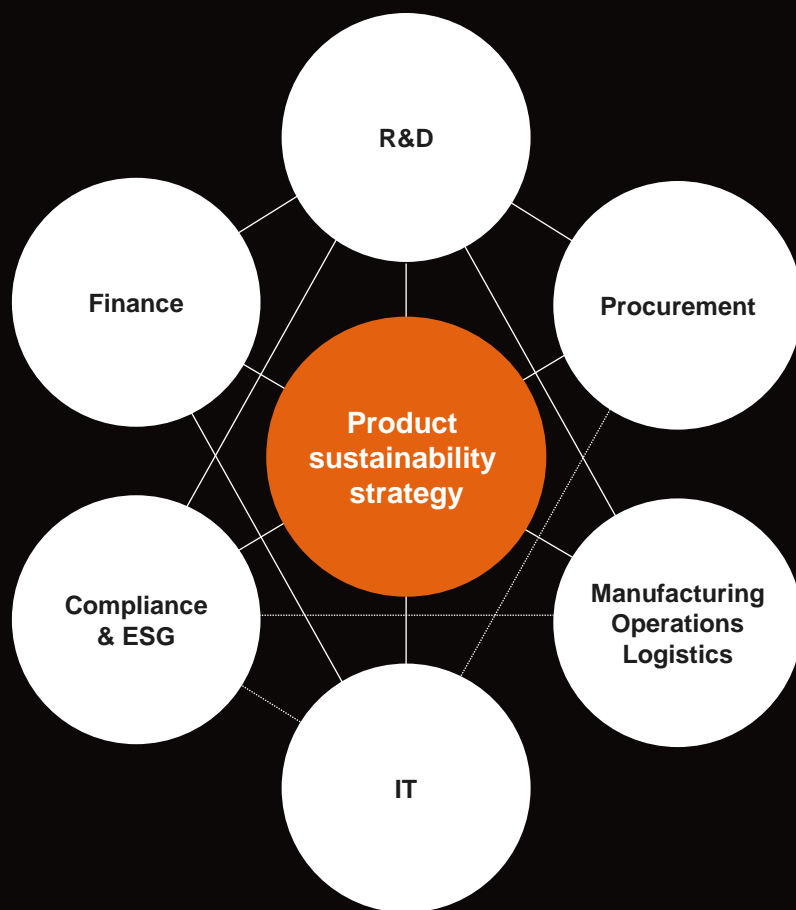
- Circular economy strategy (substitution, eco-design, industrial symbiosis)
- Sustainable and Safe by Design
- ESPR and Digital passport readiness assessment



- Claims and communication guidance
- Certifications benchmarking
- Stakeholders' engagement



Depending on the company maturity or level of ambition, we support the different functions in the organization to develop or implement product sustainability.



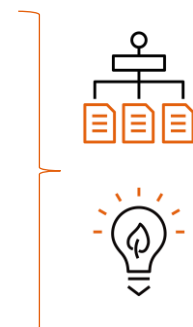
Regulatory compliance assessment for

- **Compliance and ESG** reporting
- **Manufacturing, Operations, Logistics** : anticipate impact on operations
- **Procurement** : anticipate requirements to be put on suppliers, selection criteria
- **Finance** : anticipate financial impacts of regulations



Product lifecycle environmental impact assessment as a tool for

- **R&D** : research for alternatives/substitutes, eco-design
- **Manufacturing, Operations, Logistics** : environmental performance, industrial symbiosis opportunities, ...
- **ESG reporting** : substantiated data



Digital services are key to be involved to collect and structure data required to perform such assessment as well as to enable automation of the assessment method.



Target setting and strategy definition will involve and have impact on all the levels of the organization.

Product sustainability leadership

We are the right partner to maximize positive impacts from your products.



References

Product Sustainability



Confidential client (pharmaceuticals)

Product Environmental Footprint (PEF) strategy

Client challenge:

Develop a science-based, consistent and robust methodology to perform product carbon footprint and lifecycle environmental assessment. Monitor the implementation of Group's sustainability strategy at product level.

Solutions:

- Support development of product category rules in alignment with existing standards
- Perform LCA and PCF on pharmaceutical products
- Develop harmonized methodology and governance for product carbon footprint
- Support digital product environmental footprinting strategy definition

Industrial symbiosis analysis

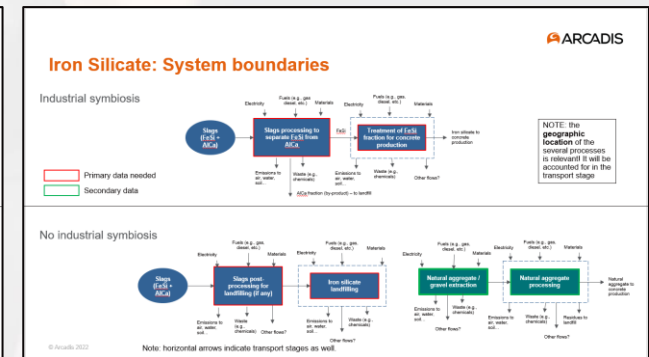
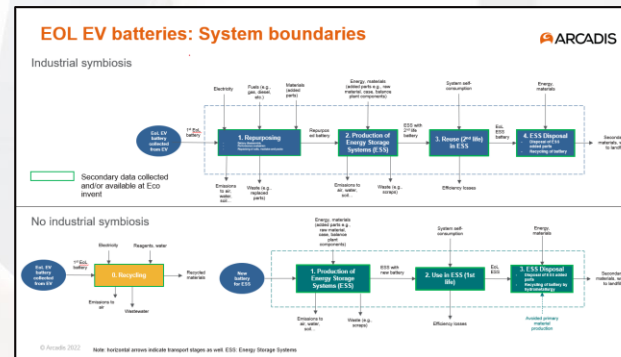
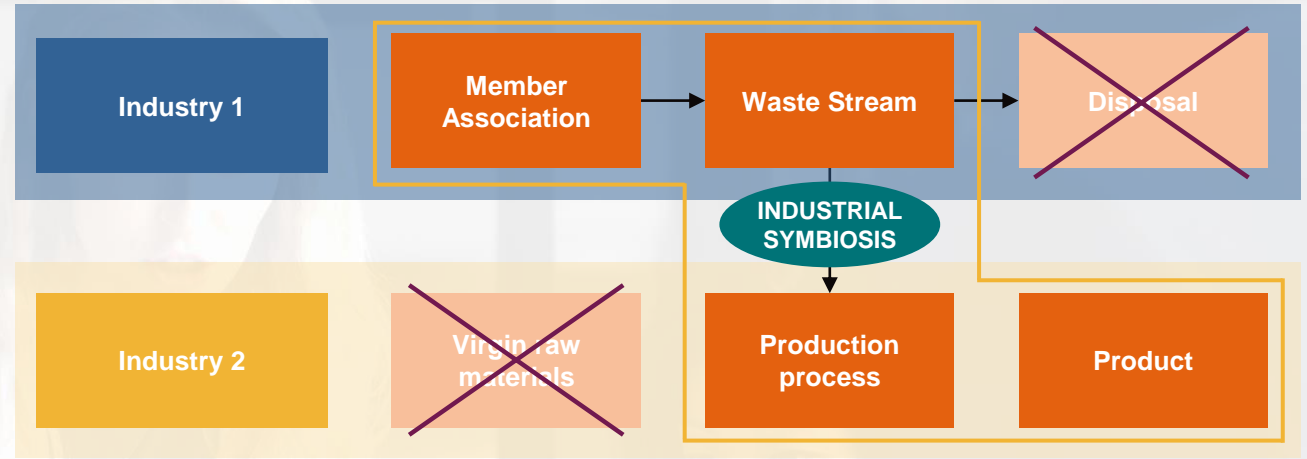
Client challenge:

Evaluate potential opportunities of industrial symbiosis for waste streams generated by its members.

Evaluate and quantify benefits in environmental and financial terms for 2 cases

Solutions:

- Research on the topic of industrial symbiosis in the copper sector (drivers / barriers / success stories / policies)
- Present to the association the potential opportunities identified
- LCA study on two opportunities to evaluate their environmental benefits
 - End of Life Vehicles EV batteries in energy storage applications
 - Iron silicate replacing aggregates
- Market analysis of the two opportunities to evaluate the economic feasibility (market size estimation and cost analysis)



Roadmap towards circular business model

Client challenge:

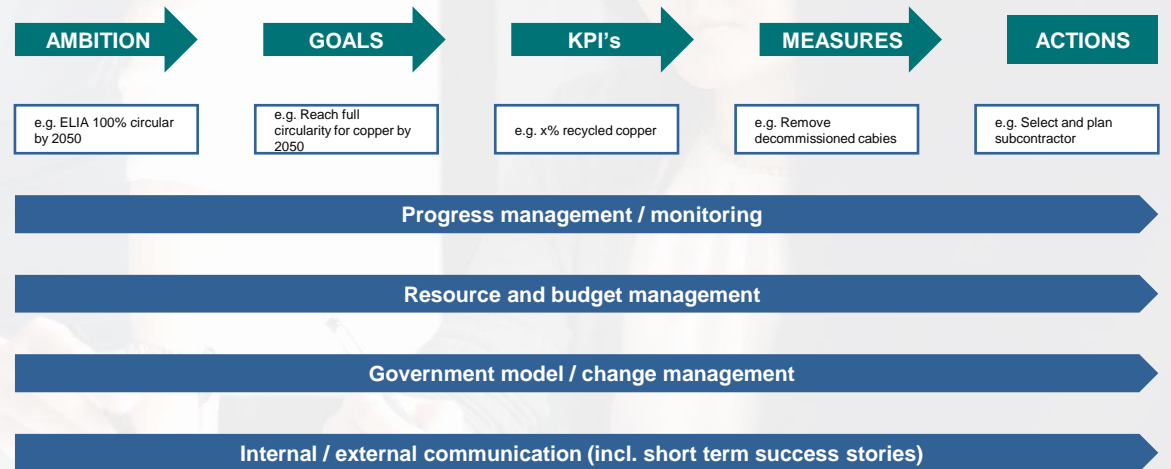
Understand what circular economy would mean for this sector.

Increase stakeholder engagement.

Develop a roadmap to include circularity in the business model.

Solutions:

- Organisation of a management workshop to introduce the concept of circularity and analyse opportunities
- Definition of circularity and overview of policies that are relevant for the sector
- Exploration and identification of the business case of circular economy applied to the client
- Development of roadmap and support in the implementation
- Evaluation of actions required based on legislative requirements in e.g., EU Taxonomy, CSRD, Environmental liability directive



Activity-based product environmental footprint

Client challenge:

Understand the footprint of a test strip manufacturing site.
 Guide the company with interpretation of results and definition of sustainability actions to improve sustainable production.

Solutions:

- Activity-based footprinting of the site
- Efficient ISO-conform LCA footprint of the value chain of all products produced on site
 - Data gathering
 - Data analysis
 - Evaluation and reporting
 - External verification



Glucose Testing

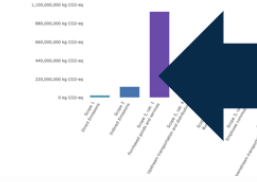


Company & value chain

- GHG reporting (GHG protocol scope 1, 2 & 3)
- Scenario analysis
- Supplier engagement

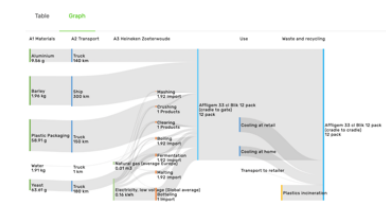


Global warming potential (kg CO₂-eq) per footprint category



Product & Portfolio

- LCA (ISO14040/44)
- EPD (EN15804-A2)
- Portfolio analysis



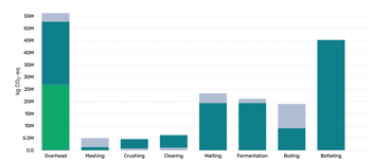
Impact per product - Global warming potential (kg CO₂-eq)



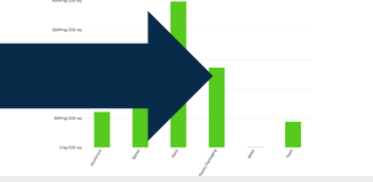
Process & material

- Hotspot analysis
- Scenario analysis

Impact per process - Global warming potential (kg CO₂-eq)



Impact per material - Global warming potential (kg CO₂-eq)



Activity Based Footprinting (SSoT)

Sustainability strategy

Client challenge:

Develop a definition for their sustainability strategy.

Solutions:

- Collaborate with a core group dedicated to the definition of the basis of the strategy through several workshops with key stakeholders
- Define the vision, values, communications, roles, needs, and actions for the association
- Set a direction to move forward with the finalisation of the strategy



Re-use of tertiary packaging

Client challenge:

“Passive shippers” used to transport “cold drugs” globally requesting a proper waste management system at location of delivery.

Ensure proper reuse of Passive Shipper by implementing return flow and re-use process in collaboration with the pharmaceutical producer. Increase circularity.

Solutions:

- Design of return flow and re-use process
- Identify and manage operational changes – reverse logistic flow
- Communicate with suppliers and distribution centers, build business case
- Financial assessment: assess the financial impact of the new process
- Environmental assessment using LCA: comparing different scenarios (number of re-use cycles, % lost in the flow, ...)



Soil decontamination lifecycle assessment

Client challenge:

The client has developed a soil decontamination process aiming at removing PFAS while improving circularity by enabling re-use of decontaminated soil. The client is requested by its customers to report about the climate impact of this solution.

Solutions:

- Considering the confidentiality of process data and reporting purposes, Arcadis supported the selection of adequate LCA methodology and reporting format.
- Arcadis performed the lifecycle assessment in alignment with the client’s requirements, while ensuring compliance with standard requirements.
- Arcadis assessed limitations and potential improvements for future LCAs.



2 Environmental Performance – Results

2.1 Environmental impacts

The following environmental impacts refer to the functional unit. In other words, they describe the impacts related to the remediation of 1 ton (wet mass) of contaminated soil via the soil washing process, as described by the system boundaries.

Table 4. Environmental impacts according to the categories selected by the EPD 2018 method.

Parameter	Unit	Upstream	Core	Downstream	Total
Global warming potential	kg CO ₂ eq.	Confidential			
Acidification (fate not incl.)	kg SO ₂ eq				
Eutrophication	kg PO ₄ --- eq				
Photochemical oxidation	kg NMVOC				
Abiotic depletion, elements	kg Sb eq				
Abiotic depletion, fossil fuels	MJ				
Water scarcity	m ³ eq				
Ozone layer depletion (ODP) (optional)	kg CFC-11 eq				

The global warming potential indicator (climate change) reports a total impact of XXX CO₂ eq per ton of soil entering the treatment process.

Product Carbon Footprint and Scope 3 GHG emissions accounting

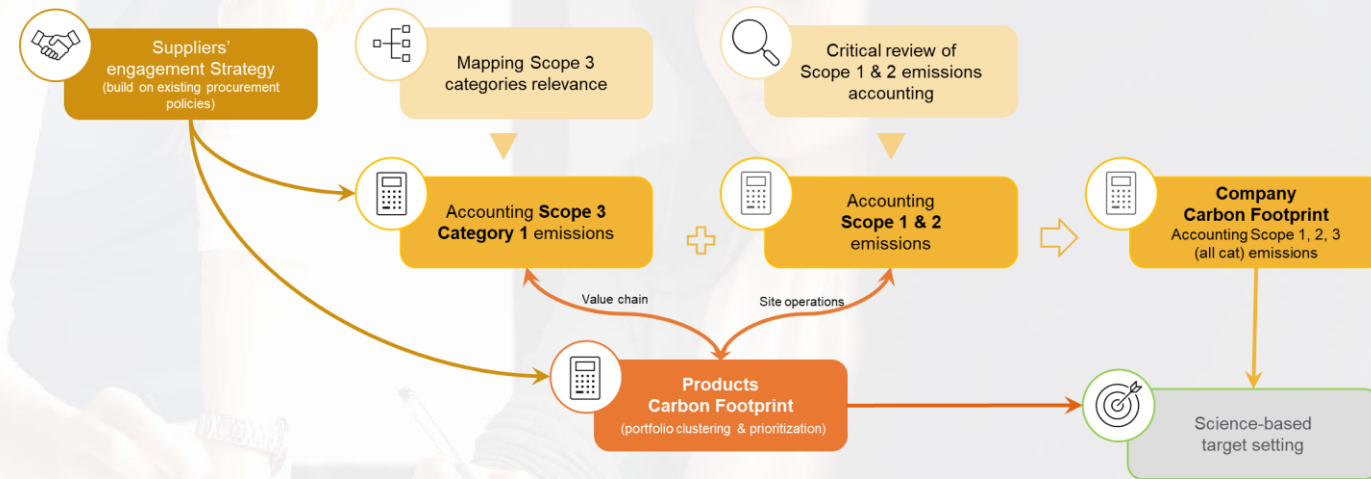
Client challenge:

The client is increasingly facing the demand for Product Carbon Footprint (PCF) reporting from its customers.

The company is required to report its Scope 3 GHG emissions and faces major challenges to account for Scope 3 category 1 emissions.

Solutions:

- Arcadis supported the client in piloting Product Carbon Footprint (PCF) calculations for a group of products, following Together for Sustainability guidelines. We developed a dedicated tool and guidelines to enable future PCF calculations.
- Arcadis supports further to company's climate strategy definition with product portfolio carbon footprinting and accounting of Scope 3 GHG emissions related to purchased goods and services.



Product environmental compliance and Carbon Footprint

Client challenge:

The client wants to assess the impact of the evolving EU sustainability legislation on its products (high density polyethylene films).

In addition, the client is willing to review its carbon footprint calculation method for internal purposes.

Solutions:

- Arcadis delivers tailor-made regulatory landscape assessment to detect what are potential impacts of legislation on the client's business (opportunities and threats) and operations.
- Arcadis performs a review of the internal carbon footprint calculation as per existing relevant standards and sectorial guidance (GHG Protocol, Tfs).



Contact us

Europe and APAC



Chrystelle Verhoest

Senior Consultant Product Sustainability

Chrystelle.Verhoest@arcadis.com

United States of America



Noor Shaikh

Senior Consultant, Sustainability Advisory

Noor.Shaikh@arcadis.com

Arcadis. Improving quality of life.