



**Chemical Industry  
Methodology** for  
Portfolio Sustainability  
Assessments (PSA)



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# Foreword

Over the past years, attention to the sustainability performance of individual products and broader business solutions has increased substantially. Recent global agreements such as the Paris Climate Agreement and the United Nations Sustainable Development Goals, underpin the importance of improving sustainability performance. In support of these and other global ambitions, companies increasingly use Portfolio Sustainability Assessments (PSA) to proactively steer their overall product portfolios towards improved sustainability outcomes.

Many companies have started to develop in-house PSA methodologies – a number of which have already demonstrated tangible business value and delivered meaningful new information for stakeholders and customers.

Companies who have adopted PSA methods indicate that improved sustainability performance has resulted in such tangible business benefits, such as:

1. Better decisions, more robust strategies
2. Higher growth rate of more sustainable solutions
3. Credible communication on sustainability benefits
4. Stronger customer and stakeholder relationships
5. Reduced risks
6. Improved corporate image

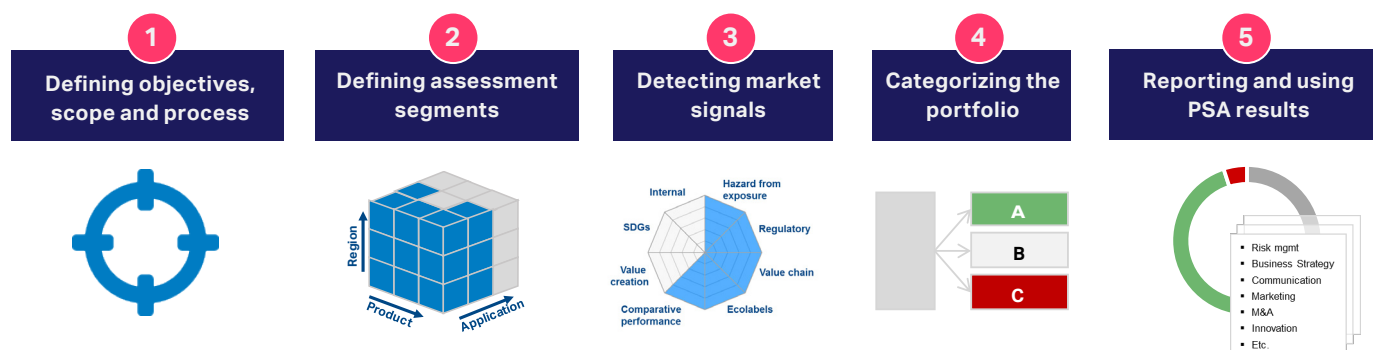
Companies within the World Business Council for Sustainable Development (WBCSD) expect that harmonizing approaches and developing a common approach for these practices will create value. A common methodology will significantly increase robustness and credibility of company efforts, because such a methodology would be built on leading best-practices. In addition, it will reduce complexity for external stakeholders, as a common approach enables more consistency in communicating results. It also helps to create shared language on sustainability-related benefits and concerns throughout value chains and industries.

The ambition of the **Chemical Industry Methodology for Portfolio Sustainability Assessments** (further referred to as 'PSA Methodology') is to guide companies from the chemical industry in developing and applying consistent, high quality PSA approaches that will result in more sustainable product portfolios.


The PSA Methodology focuses on the needs of companies in the chemical industry and is applicable for existing products, existing services and R&D projects. The PSA Methodology logic can also be applied to other areas, such as investments/divestments and mergers/acquisitions, yet may require some adjustments to accommodate for area-specific conditions.

Quality criteria have been defined and structured in line with the five typical steps of a best practice PSA approach, as illustrated below.

Illustration 1: Overall process for a PSA







# 1. The value of the PSA Methodology

This PSA Methodology has the specific objective to provide a robust, yet pragmatic methodology to proactively steer (part of) an overall product portfolio towards improved sustainability performance. Existing methodologies – such as environmental or social life cycle assessments (LCA) – cannot be easily applied to this task as they are typically effort-intensive and costly to perform.

Furthermore, such methodologies focus only on environmental or social impacts and don't take market perception and regulatory developments into account. While these tools should continue to be used for the purpose they are intended for and even deliver valuable input for PSA, a new more pragmatic approach is needed for the task at hand.

PSA doesn't focus on aggregated company sustainability impacts, such as quantifying total company emissions, or a company's exposure to child labor. Nor is the methodology suited for product labelling or comparative assertions (i.e. comparisons versus other companies' portfolios or individual products), even though companies may use individual products as illustrative examples of the methodology.

PSA approaches, because they are based on a variety of inputs including environmental and social impact, market perception, regulatory direction and other indicators, provide a robust approach for companies to understand the risks in the portfolio, take action - and ultimately - transform the company's product portfolio towards improved sustainability performance.

## 2. Ambition of the PSA Methodology



The ambition of the PSA Methodology is to guide companies in developing and applying consistent, high quality PSA approaches. The criteria enable companies to develop new PSA methodologies or to improve the quality and consistency of existing PSA approaches.

The PSA Methodology aims to:

- 1. Build a common understanding** of what is considered “sustainable” within product portfolios;
- 2. Improve robustness of existing PSA approaches**, by adopting best-practice approaches applied by peers;
- 3. Increase credibility of externally-communicated results**, by agreeing on requirements with which a high-quality PSA must comply;
- 4. Reduce complexity for companies starting with PSA**, by providing pragmatic “how-to” guidelines and case examples;
- 5. Improve consistency in communication** on sustainability attributes and performance.

Harmonization and standardization of sustainability metrics has been successfully achieved before by industry projects conducted by the WBCSD, e.g. related to Life Cycle Metrics (WBCSD, 2014) and Product Social Metrics (WBCSD, 2016).

The PSA Methodology focuses on the needs of companies in the chemical industry and is applicable for existing products, existing services and R&D projects. The PSA methodology’s logic can also be applied to other areas, such as investments/divestments and mergers/acquisitions, yet may require some adjustments to accommodate for sector- or area-specific conditions. Individual companies may decide (but are not obliged) to add further, more stringent criteria in order to achieve a more differentiated result.

Chemical companies, which successfully designed and implemented PSA approaches, now use the Methodology and its outcomes throughout key decision-making processes and internal/external communications, including for:

- Risk / opportunity identification
- Strategy development and review
- (Innovation) project management
- Capital expenditure decisions
- Mergers and acquisitions
- Sales planning and customer co-development projects
- Portfolio steering by target-setting
- External communication both at the product and the portfolio level
- External communication in customer/partner relationships

The versatile use of PSA outcomes for key business decision-making implies that it is critical for PSA methodologies to simultaneously address multiple – and sometimes contradictory – objectives of stakeholders.

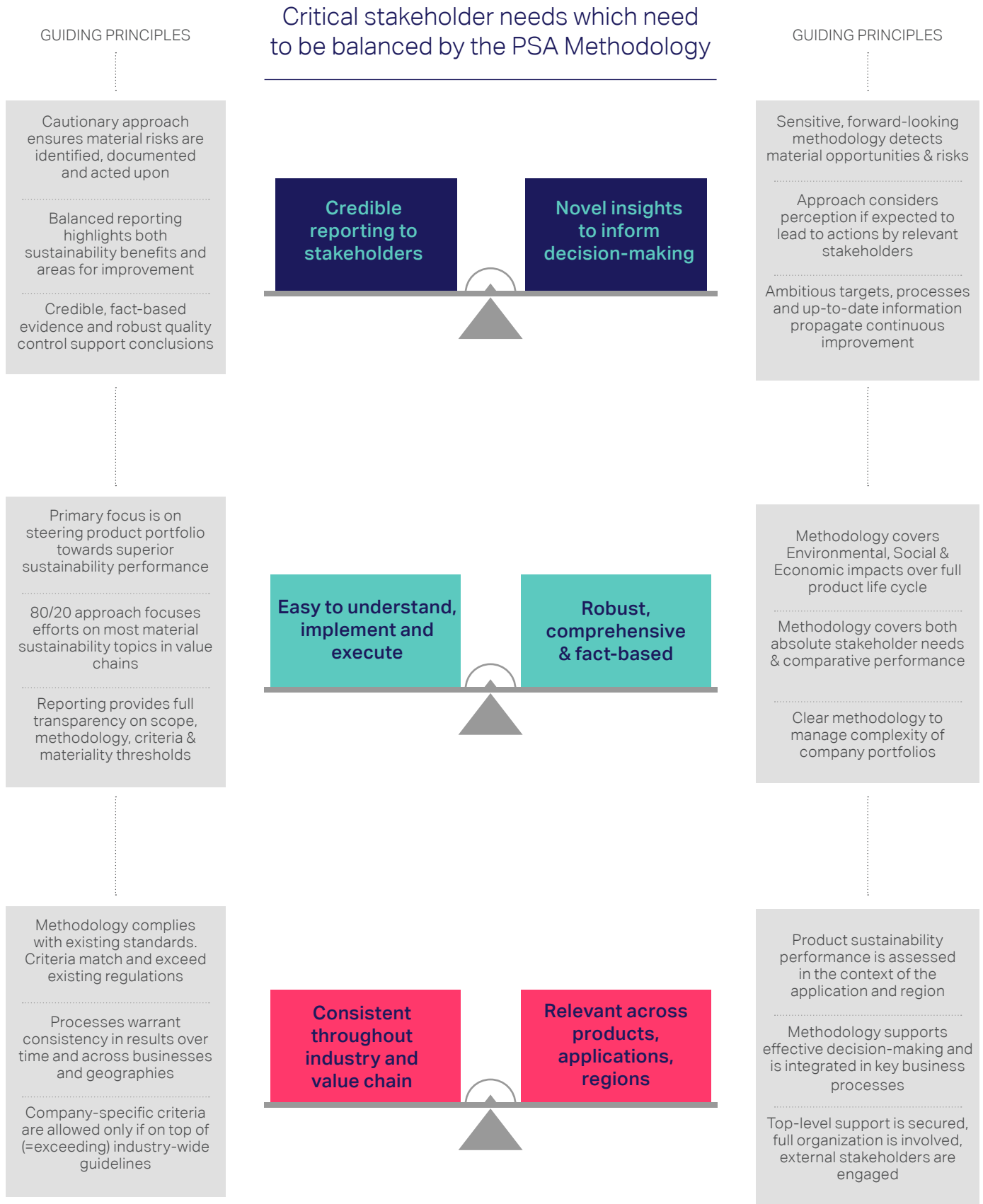
Effective PSA methodologies must for example:

- Provide credible reporting on sustainability performance which can be communicated to internal stakeholders and the outside world. At the same time, the PSA Methodology must be sufficiently forward-looking and sensitive to spot any material opportunities and risks so as to provide novel insights to inform decision-making.
- Be easy to understand, implement and execute, so that the barriers to start working with PSA become as low as possible. The PSA Methodology must also ensure that assessments are robust, comprehensive & fact-based to ensure that and PSA outputs can be effectively used for decision-making.
- Warrant a sufficient level of consistency across industries and value chains so as to create a common language on sustainability performance. The PSA methodologies must also allow for some degrees of freedom to ensure that outcomes are relevant across a vastly different landscape of products, applications, and regions.





**Illustration 2: Guiding principles to support the needs of key stakeholders**



# 3. Complying with the PSA Methodology

Requirements in these chapters have been defined using the terms "shall", "should", "may", and "can", in conformance with ISO/IEC directives (2011):

- **"shall"** indicates a requirement;
- **"should"** indicates a recommendation;
- **"may"** is used to indicate that something is permitted.

Companies claiming compliance with this PSA Methodology document shall:

- Follow the five steps described above;
- Comply with quality criteria defined for each of the steps, as summarized in the following chapters;
- Comply with existing guidelines/standards and on commonly-accepted sustainability metrics where possible and relevant;

Review the PSA Methodology and results from the PSA on a:

- o Regular, structured basis (at a minimum every five years) to ensure that the fact base on which the assessment relies is still up-to-date and representative;

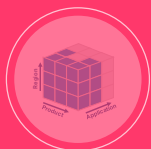
- o Ad-hoc basis, whenever any reason exists to believe that the assessment needs to be updated because of important changes in the market (e.g. new important regulation, industry initiatives, etc.). What is seen as superior performance today may be average or inferior performance tomorrow, because innovation and competition also drive improvements and because market requirements and regulations evolve.

Illustration 3: Overall process for a PSA



## 4. STEP I

# Defining objectives, scope & processes



## I. Key to successful PSA implementation

Companies which have successfully implemented PSA approaches, noted that a number of practices had been critical to the successful implementation of PSA within their company:

- Full support from company board and executives
- Engaged key (internal and external) stakeholders
- Use of cross-country, multi-disciplinary teams for PSA implementation, to stimulate acceptance and use of the methodology
- Centralized coordination of PSA implementation and execution, to warrant consistency in results over time and across businesses and geographies
- PSA thinking engrained throughout the full company organization and its key decision-making processes

The recommended involvement and support from such a wide range of stakeholders makes it important to clearly agree PSA objectives, scope and processes prior to starting the assessment to ensure that all key stakeholders have a shared understanding of the journey the company is undertaking.

## II. PSA scope

The primary scope of PSA includes, in principle, all activities covered by the company's external financial reporting ("relevant activities"). Business topics concerning exposure to controversial sustainability performance should be included. Thus, before deciding on the scope of business activities to be included in the PSA, companies should conduct a high-level screening of the complete portfolio. The objective of the high-level screening is to ensure that the company has an adequate understanding of where business topics with potential sustainability concerns are located in the portfolio. Reporting shall include a clear justification and rationale for activities included in and excluded from the primary scope.

Following the high-level screening, the company may decide to:

- i. Include all activities in scope of the PSA (full scope), with focus on existing products, existing services and R&D projects
- ii. Select a part of the business (e.g. one business unit) for assessment (after all, not all companies can be expected to directly assess the complete portfolio of activities)
- iii. Exclude activities from the scope of its assessment (e.g. because some activities are regarded to be non-core, activities that will be divested in the short term) provided that excluded activities:

- Do not contain any activities for which controversial items or critical sustainability impacts were identified during the analysis
- Are described (what is excluded) and justified (why is it excluded) in reporting

If a company opts to gradually increase the scope of business covered (e.g. PSA covers 25% of revenues in year one, 50% of revenues in year two and 75% of revenues in year three), reporting shall transparently explain:

- How the scope was selected
- What activities were excluded
- What the company roadmap towards more complete coverage of revenues looks like (e.g. what are key milestones)

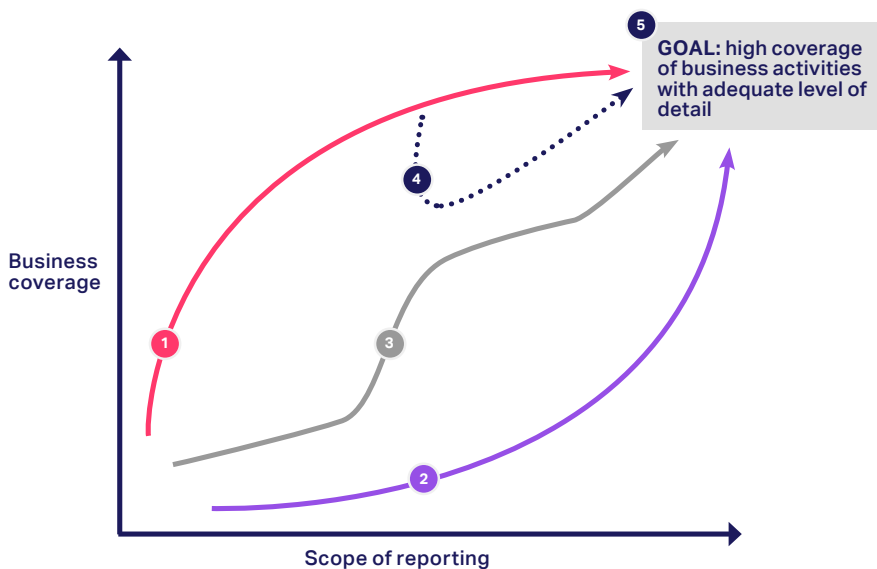
Quality criteria mentioned throughout this document must still be fulfilled even if there is a reduced scope. The process through which the scope is defined should plan for a step-wise implementation pathway, with the goal to have more complete coverage of the portfolio, over time.

### III. Implementation pathway

Although all companies were found to strive for broad coverage of business activities and increased scope of reporting (see Step 4), no single pathway to successful implementation was identified. Instead, companies were found to advance in different ways towards their goal, as shown in illustration 4.

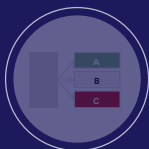
1. Companies may start by involving a broad range of business activities and gradually increase the scope of reporting over time
2. Alternatively, companies may opt to introduce PSAs in a pilot business and realize an adequate level of quality and detail before further rolling out to other businesses
3. By combining above approaches, companies may implement a roadmap which foresees in alternating upgrades in scope and granularity, with further expansions of business coverage
4. Mergers and acquisitions may result in a temporary reduction of business coverage and/or a temporary decrease in the level detail or quality of available data
5. Although most companies strive to achieve a high coverage of business activities with an adequate level of detail in the assessments, most companies experience that the end goal is a moving target, as stakeholder requirements change over time

**Illustration 4: Illustrative pathways through which companies may achieve high coverage of business activities**



## 5. STEP II

# Defining the unit of analysis (PARCs)



## I. Defining the unit of analysis

The purpose of portfolio segmentation is to ensure that PSAs consider the specific context of a product, and the value chain and a region (where appropriate). This increases the relevance and robustness of PSAs, while reducing complexity through the effective grouping of similar activities with similar sustainability performance. Chemical companies define Product-Application-Region-Combinations (PARCs) and use these as the unit of analysis in the PSA. The subdivision of Product-Application-Combinations based on Regions is optional and is further described under II.3. The approach acknowledges that one single product may have acceptable sustainability performance in one value chain or region, whereas the product may be regarded as problematic in another value chain or region. PARCs group combinations of products, applications and regions for which sustainability performance- in terms of both favorable and unfavorable sustainability signals- is similar. A well-defined PARC is homogenous in terms of sustainability performance and cannot be divided into smaller segments for which sustainability performance differs.

## II. Aligning PARCs with existing company segmentations

The definition of PARCs is very similar when compared to classical marketing segmentation approaches. Companies are advised to strive to align PARC segmentations as much as possible with existing segmentations (e.g. used in manufacturing, marketing and sales) to maximize relevance of outcomes for internal stakeholders and reduce the efforts required to gather data on PARCs. Companies should follow the recommendations below to ensure that the PSA segmentation is aligned with existing company market segmentations:

1. Product groups should be based as much as possible on existing product segmentations. Products in a well-defined segmentation will have a similar sustainability profile.
2. Application groups should be based as much as possible on existing business segments and be aligned, where possible, with segmentations used by marketing and in financial reporting.
3. Product-Application-Combinations may be further divided into different regions if this increases the relevance of the results.

Companies should maintain a precautionary principle and separate activities with potentially negative impacts in separate PARCs. The PARCs should be defined before starting the PSA, yet the results of the PSA may lead to the grouping or subdivision of PARCs.

### III. Regionalization

Companies may further subdivide Product-Application Combinations to reflect the specific context of a specific region. This 'regionalization' can help companies to increase relevance and representativeness of results by reflecting differences in legislative frameworks, alternative solutions available in the market, and/or differences in relevant ecolabels. Regionalization shall not be applied just to bypass negative signals found in other regions, as negative signals from other regions often influence decision-making of stakeholders in the region being assessed. Regionalization may therefore only be applied under strict conditions.

Regionalization should be used for classification if a PARC:

- Demonstrates superior sustainability performance compared to the market standards in one region, and not in other regions;

- Has a sustainability risk compared to the market standards, in one region and not in other regions.

Regionalization should not be used for classification if for example:

- Global regulation is applicable or expected;
- Global corporate rules are violated.

Companies shall therefore only apply regionalization for sustainability signal categories marked in green in illustration 5 (see Step 3 for more information on the signal categories).

When regionalization is applied, companies shall check whether identified risks in another region could impact the region being assessed.

For instance, if a product in an application is banned by multiple players in another region, the risk may also apply in the region being assessed.

Regionalization is not permitted for globally applicable regulations, such as the Montreal Protocol, for example. Companies may consider regulations in a specific region (e.g. the European Union) to only be relevant in this region (and for example not in the US), if fact-based analysis proves that decision-making of stakeholders in the region being assessed (the US) is not affected by the regulation in the other region (the EU).





## IV. Sizing Product-Application-Region-Combinations (PARCs)

The size of a PARC is determined based on the external sales (i.e. excluding intercompany sales) of the company to the application in the year of reporting, and if not possible, as recent as possible. Revenues used for sizing of PARCs shall be aligned with the financial and/or environmental reporting of the company such as IFRS, GAAP. In some cases, information on actual product end-use may be lacking, for example in the case of highly commoditized chemicals which are used in a wide range of applications. For such PARCs, companies shall:

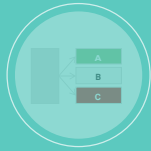
- Define relative size of applications (% of total) using credible market reports from authoritative bodies;
- Quantify the size of the PARC, by multiplying the relative application size with actual company product sales to derive PARC size;
- Start defining PARCs with the largest applications. Companies will continue defining applications using the previous two steps until PARC size becomes too small. The minimum size threshold (if applied) and the rationale for its level shall be explained in the company's PSA report;
- Start sizing the largest applications and continue defining applications until PARCs become too small to meet the company's materiality thresholds. All PARCs which together do not meet the company's materiality threshold may be grouped together in one PARC. Sensitive applications, as identified during the high-level screening should not be grouped, even when below minimum size threshold.

### Illustration 5: Guidelines related to the regionalization of PSA methodologies

SIGNAL CATEGORY		May companies apply regionalization?
1	Chemical hazard and exposure across the life cycle	NO
2	Global regulatory trends	NO
3	Authoritative ecolabels	YES
4	Sustainability ambitions in the value chain	YES
5	Sustainability performance compared to alternative solutions	YES
6	Economic value creation vs. the use of natural capital	YES
7	Contribution the Sustainable Development Goals	YES
8	Company internal guidelines & objectives	NO

## 6. STEP III

# Detecting Market Signals



## I. Scope of market signals

Having defined the unit of analysis - the PARCs - companies proceed to scan for "signals" on the perceived sustainability performance for the respective PARC. A signal is defined as a fact-based observation on material, sustainability-related actions or commitments of key stakeholders which indicate whether the PARC is perceived to be contributing to a transition towards a more sustainable world. These can include legislation, purchasing decisions, ecolabel requirements, among others.

Signals are identified through the evaluation of public communication from, or discussions with, key stakeholders. Key stakeholders may include, for example: customers, other value chain companies, governments, ecolabels, and industry associations.

Companies shall consider all of the below four elements in the assessment scope:

### 1. Environmental, social and economic impacts

- Assessment scope is limited to sustainability-related impacts (impacts not related to sustainability shall not be included in the assessment).
- Social indicators are fully included in scope of the PSA Methodology. For more information on potentially relevant social metrics, please refer to documents such as:

- o WBCSD Social Capital Protocol (2017),
- o WBCSD Social Life Cycle Metrics for Chemical Products (2016),
- o UN Sustainable Development Goals.
- Profitability may be included as minimum requirement, for example profitability below minimum level results as a negative signal, of which the minimum level is defined by the reporting company. Profitability alone may not be used as a positive signal.

### 2. Fact-based signals on stakeholder action

- Signals have to be based on facts and supported by evidence. Companies shall consider an identified sustainability signal to be material if it is:
  - o Significant – the signal is expected to lead to changed behavior / actions by relevant stakeholders, and
  - o Measurable – the signal is based on a factual observation from a credible source.
- Signals have to be based on actions undertaken by key stakeholders, which may also be driven by their perception on sustainability performance (e.g. new laws, changing decision making or company policies).

### 3. Absolute and relative performance criteria

- Absolute performance assessments compare PARC characteristics with the requirements and objectives of the relevant stakeholders in the value chains.
- Relative performance assessments compare PARC performance with the performance of competing solutions in the PARC.

### 4. The full life cycle of the product

- The assessment considers impacts from all relevant stages within the full product life cycle, including for example, exploration of raw materials, manufacturing footprint, processing, use and end-of-life.
- Level of granularity/depth of analysis may differ across dimensions of the PARC and the value chains.

## II. Additional observations on market signals

Companies shall apply a cautionary, robust and transparent approach when identifying sustainability signals, which means:

- Identified signals on sustainability performance shall be fact-based and supported by robust, independent (which may be internal) quality control.
- Materiality thresholds shall be clearly defined in the methodology. Typically, companies consider a sustainability signal to be material if the identified facts are expected to lead to changed behavior or actions by relevant stakeholders.
- Companies may include signals, which are an addition to industry-wide criteria to ensure the methodology remains relevant for them, in view of new market trends. Such additional, company-specific signals may not offset existing negative signals.

The signals described in this section apply for:

- Activities at any stage of the value chain, e.g. not only use, but also production, installation, end-of-life, re-use and recycling.
- Signals driven by either the product, any co-products (products used together with the product being assessed), or the application:
  - During intended use (use described on the product's technical data sheets) and observed use (unintended following the technical data sheet, yet observed to occur frequently in practice);
  - Across the product's full life cycle, which implies that sustainability-related opportunities and/or risks may be driven by activities at any stage of the value chain, co-products where it is known that the co-products are used together with the PARC being assessed, or in the application. If a material sustainability-related concern exists for a specific application (e.g. the application is seen as inherently 'bad' for human health or for the environment), this concern affects the categorization of the PARC, even if no sustainability-related concerns exist for the company's product.



It is understood and accepted that companies do not have high quality data on all environmental and social impacts of PARCs throughout the lifecycle, including impacts of related ingredients, co-products and competing products. Companies are expected to follow a best-effort approach by:

- Starting with information already available within the company;
- Completing and upgrading this information through additional research on the signals described in this document on a best-effort basis;
- Following-up on PSA results to determine in what areas data quality needs to be further improved.

Signals on environmental and social performance will evolve over time. For instance:

- Environmental and social impacts considered important in a specific application will change over time (e.g. water usage may become a material topic in a specific application);

- Expected minimum performance levels on indicators may change (e.g. updates to legislation may require companies to reduce exposure levels of a specific substance);
- The performance of alternative solutions changes as novel solutions emerge and the performance of existing solutions improves.

The assessment of Sustainability signals shall therefore be reviewed on a:

- Regular, structured basis (at a minimum every five years) to ensure that the fact base on which the assessment relies is still up-to-date and representative;
- Ad-hoc basis, whenever any reason exists to believe that the assessment needs to be updated because of important changes in the market (e.g. new important regulation, industry initiatives, etc.).



### III. Signal categories

The signals on sustainability performance aim to identify material environmental and social challenges and opportunities related to the PARC. The signal categories aim to represent the perspectives of different stakeholder groups, which are of relevance in the specific applications. Assessing sustainability using the criteria defined by relevant stakeholder groups enables the company to assess its own sustainability performance using a fact-based outside-in view and highlight areas where changes in decision-making are likely to occur because of sustainability-related reasons. For each of the identified signals, which could imply either perceived sustainability benefits or concerns, the company shall decide on the materiality of the signal for the PARC. Companies shall consider an identified sustainability signal to be material if the signal is:

- Significant – the signal is expected to lead to changed behavior or actions by relevant stakeholders, and
- Measurable – the signal is based on a factual observation from a credible source.

The PSA Methodology cannot be exhaustive in terms of signals, as companies may have specific sustainability requirements. The PSA Methodology therefore specifies minimum requirements to ensure consistent results. Companies may use additional requirements that are relevant to the specific company, as defined in signal Category 8: Company internal guidelines and objectives.

Companies **SHALL** consider five categories of signals on sustainability performance

1. Chemical hazard and exposure across the life cycle
2. Regulatory trends and global conventions
3. Sustainability ambitions along the value chain
4. Authoritative ecolabels, sustainability related certification and standards
5. Environmental and social performance across lifecycle compared to alternative solutions

Companies **SHOULD** consider the following three categories of signals on sustainability performance:

6. Sustainable value creation
7. Contribution to the Sustainable Development Goals
8. Company internal guidelines and objectives

Sustainability concerns or opportunities often appear in more than one category, for instance if a PARC is banned by governments, and the PARC is banned by key players in the value chain, and the PARC prohibits players from obtaining a leading ecolabel. As the Methodology is designed to ‘scan’ for material opportunities and risks, the appearance of opportunities/ concerns in several signal categories does not constitute a problem. The next step will describe how the identified signals lead to the categorization of a PARC. In line with the precautionary principle, sustainability benefits shall only be recognized when the contribution of the chemical product is substantial, extensive or fundamental (as per the ICCA-WBCSD guidance Addressing the Avoided Emissions Challenge).

**Illustration 6: Guidance on significance of contribution, based on ICCA-WBCSD, “Avoiding Greenhouse Gas Emissions: The Essential Role of Chemicals”**

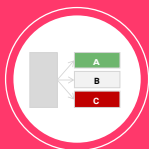
SIGNIFICANCE OF CONTRIBUTION	RELATIONSHIP BETWEEN CHEMICAL PRODUCT AND END-USE SOLUTION
<b>Fundamental</b>	The chemical product is the key component that enables the GHG emission avoiding effect of the solution.
<b>Extensive</b>	The chemical product is part of the key component and its properties and functions are essential for enabling the GHG emission avoiding effect of the solution
<b>Substantial</b>	The chemical product does not contribute directly to the avoided GHG emissions, but it cannot be substituted easily without changing the GHG emission avoiding effect of the solution.
<b>Minor</b>	The chemical product does not contribute directly to the avoided GHG emissions, but it is used in the manufacturing process of a fundamentally or extensively contributing product.
<b>Too small to communicate</b>	The chemical product can be substituted without changing the GHG avoiding effect of the solution.

**Table 1: Summary overview of the signal categories. Details on each of the signal categories are found in Appendix III**

SIGNAL CATEGORIES		--	-	0	+	++
Mandatory ('shall') signals	1 Chemical hazard and exposure across the life cycle	Safe intended or observed use of the PARC across its lifecycle cannot be demonstrated because of material risk from priority 1 substances	Safe intended or observed use of the PARC across its lifecycle cannot be demonstrated because of material risk from priority 2 substances	Neither positive nor negative signals were identified	The PARC actively eliminates a material risk from priority 2 substances	The PARC actively eliminates a material risk from priority 1 substances
	2 Anticipated regulatory trends	Faces bans or restriction by OECD countries, supranational institutions and/ or globally relevant conventions	Is at risk of facing bans or restriction as evidenced by inclusion on authoritative 'Candidate' list		Supports customers in delivering on today's regulations and conventions or replacing substances which are listed under 'weak negative'	Supports customers in implementing future regulations and global conventions, or in replacing substances which are listed under 'strong negative'
	3 Sustainability ambitions along the value chain	Is banned/restricted by at least two relevant opinion leaders or large market players or one association	Is banned/restricted by one opinion leader or large market player		Delivers on other sustainability commitments in industry	<ul style="list-style-type: none"> <li>Delivers on top sustainability commitments of actors in value chain,</li> <li>Is regarded top performing solution on respective sustainability indicator</li> </ul>
	4 Authoritative ecolabels, sustainability related certification and standards	Prevents customers from being granted standard ecolabels and/or certificates	Prevents customers from being granted leading ecolabels and/or certificates		Enables customers to obtain standard ecolabel(s) and/or certificate(s)	Enables customers to obtain leading ecolabel(s) and/or certificate(s)
	5 Environmental and social performance across lifecycle compared to alternative solutions	Is amongst bottom sustainability performers on key sustainability indicators	Has below average sustainability performance (yet not a bottom performer)		Provides better sustainability performance than mainstream solutions	Is amongst the best-in-class solutions in the market in terms of sustainability performance
Recommended ('should') signals	6 Sustainable value creation	Value of withdrawn natural resources substantially exceeds economic value	Value of withdrawn natural resources exceeds economic value		Economic value exceeds value of withdrawn natural capital	Economic value substantially exceeds value of withdrawn natural capital
	7 Sustainable Development Goals	Not applicable	Not applicable		Provides significant contribution the SDGs	Provides fundamental contribution the SDGs
	8 Company internal guidelines & objectives	Does not comply with company minimum requirements / standard	Company aims to reduce consumption or use of PARC		Not applicable	Not applicable

## 7. STEP IV

# Categorizing the Portfolio





## I. PSA performance categories

Following the identification of sustainability signals, companies shall evaluate all material signals identified and categorize PARCs based on the overall sustainability performance. The categorization of PARCs enables companies to aggregate results and evaluate performance at the portfolio level.

When categorizing results, companies shall make use of at least three performance categories. Companies may select the most appropriate colors, company-specific category names (e.g. Accelerator, Aligned, etc.) but shall be referenced to the following categories in this PSA Methodology to avoid confusion:

- A. PARCs contributing to a more sustainable world
- B. Neutral PARCs
- C. PARCs with a material sustainability concern

Best-practice approaches use five categories, as defined in illustration 7.

**Illustration 7: Definition of five sustainability performance categories**

PARC has one or more strong sustainability-related benefits (no material sustainability challenges identified)	A	A ++
PARC has one or more sustainability-related benefits (no material sustainability challenges identified)		A +
PARC has neither sustainability-related benefits nor risks	B	
PARC has one or more sustainability-related challenges	C	C -
PARC has strong sustainability-related challenges		C --



## II. Weighting and trade-off

Companies shall not balance or offset material sustainability-related concerns and negative signals with sustainability benefits (positive signals), which means that:

- If one or more strong negative signals are identified, indicating that important minimum or must-have requirements in the application are not fulfilled, a PARC shall be directly allocated to the most negative performance category (C - -).
- If a weak negative signal is identified, indicating that material concerns or risks are identified, the company shall directly allocate the PARC to the C- category.
- Companies should confirm whether a weak negative signal is indeed material in the application in view of the overall, weighted environmental and social performance of the PARC. It is material when it results in changing buying behavior or actions by relevant stakeholders in the respective PARC. For example:

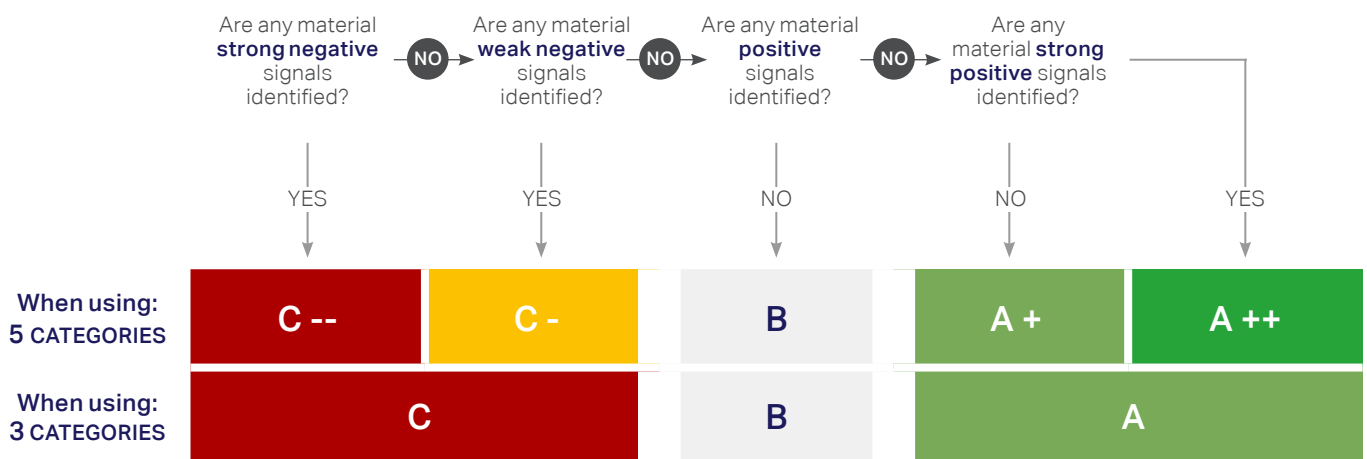
- o A slightly higher water footprint of an insulation material for a refrigerator does not immediately imply a weak signal unless any actions or changes in buying behavior are observed, as stakeholders are likely to prioritize sustainability impacts such as for instance energy consumption
- o A higher greenhouse gas footprint in the production phase may not result in a negative signal, if the product provides larger greenhouse gas savings during the use phase
- If an identified weak negative signal is considered not to be material, for example, it does not influence stakeholder decision making, the signal should not influence PARC categorization. Still, companies are advised keep track of such weak signals, and review on regular intervals to establish whether the status of these signals has changed.
- It should be stressed that all solutions are legally compliant. Allocation to the C- category means that material business

risks or concerns exist which are relevant to acknowledge.

- A PARC can only be said to be A+ or A++ if all material sustainability requirements are met and no material negative signal is identified.
- Positive signals are only acknowledged if the solution provides a direct, significant, measurable contribution to sustainable development. Positive sustainability performance implies a contribution to a world with improved sustainability performance, which goes beyond just complying with requirements.
- Companies shall transparently report on the reasoning applied to categorize PARCs.

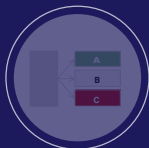
The above guidance is illustrated in the following decision tree.

Illustration 8: Decision tree



## 8. STEP V

# Using and Reporting PSA Results



## I. Internal use of PSA results

Chemical companies already make extensive internal use of PSA throughout key decision-making processes, such as:

- Risk and opportunity identification
- Strategy development and review
- (Innovation) project management
- Capital expenditure decisions
- Mergers and acquisitions
- Sales planning and customer co-development projects
- Portfolio steering by target-setting

Any guidelines related to internal use should be read as recommendation and best-practices and are not mandatory. These recommendations aim to support companies to make optimal use of PSA results. For internal use related to risk and opportunity identification and for internal strategy development it is recommended that companies:

- Expand the number of assessment categories (beyond the minimum of three) to ensure that more attractive and/or less attractive areas are correctly identified and managed.
- Use the results of the sustainability performance assessment as a direct input, and therefore not use a weighting methodology to balance the identified favorable

or unfavorable signals, as these signals provide useful signals related to potential risks and opportunities.

- Develop risk mitigation or management plans for negative signals identified during PSA.
- Group sustainability signals identified in separate Product-Application-Combinations to create a more comprehensive plan targeting a challenge or benefits which could impact several PARCs (e.g. one action plan related to hazardous substances with material risk, or related to healthy food/beverage products, or social benefits).
- Develop a holistic approach to improve performance across the portfolio.
- Develop plans to capitalize on the positive sustainability indicators identified during the assessment and promote sustainable development along the value chain.
- Integrate the sustainability perspective in relevant business processes and functions such as strategy or risk management, so that insights from PSA are logically integrated in these processes and decision-making.
- Continue to evaluate improvement potential in products which already have positive sustainability performance, as benchmarks change over time.

## II. External reporting of PSA results

When reporting results externally, companies shall provide full transparency in their reporting on:

- The methodology used to assess sustainability performance;
- The scope of assessment, including a summary of excluded activities and logic for exclusion;
- The overall assessment results at least for the three categories of positive, neutral and negative;
- The processes used to conduct the assessment;
- The assurance process, including what steps are taken to assure the quality, accuracy and representativeness of results, and assurance results.

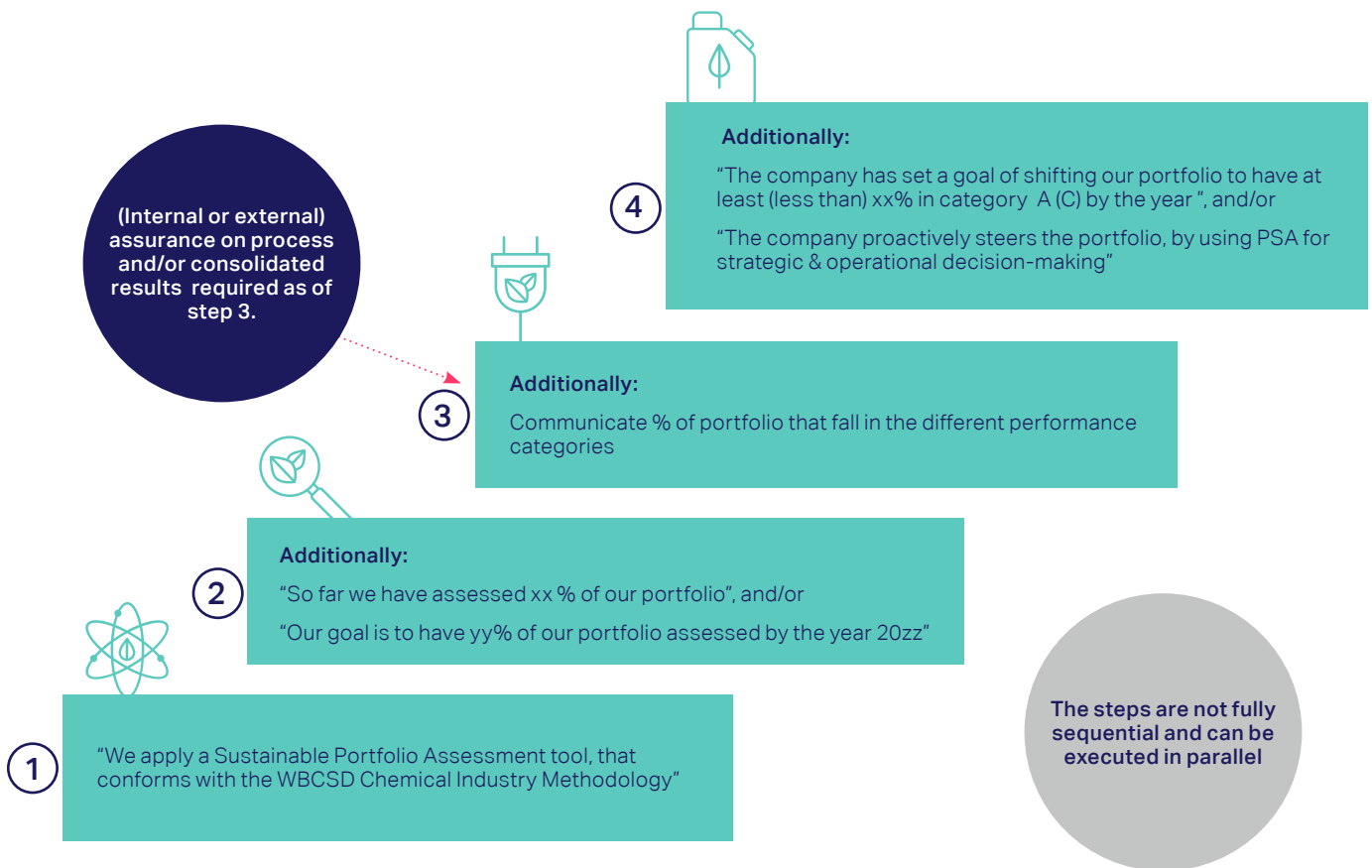
It's important to reiterate that the **Methodology aims to identify sustainability-related opportunities and risks**. The categorization of PARCs does not prescribe a specific action for the company, and as such, **C - -** does not mean 'phase out'. It is upon the company to decide how to best take action.

Company reporting should ensure consistency between reports at the product and at the portfolio level:

- Companies shall not report individual products as part of their product portfolio with a sustainability advantage (eco+, ecopremium, eco-efficiency), if the product has internally been assessed to have a neutral or material negative contribution to sustainability;
- Companies are recommended to comply with existing standards and guidance on product-level claims;
- PSA results shall not be used for comparative assertion versus other companies' portfolios or individual products.

Four levels of PSA reporting, displayed in illustration 9, are distinguished:

Illustration 9: Four levels of PSA reporting





## When reporting in conformance with the PSA Methodology (level 1), companies:

### SHALL:

- Only indicate the PSA is conducted in line with the WBCSD PSA Methodology if all mandatory requirements at the PSA Methodology level are met;
- Report on selection of options contained in the Methodology, for example, what optional signal categories were taken into account;
- Report transparently on any material sustainability-related concerns which were compensated for by a sustainability-related benefit;
- Not apply any criteria in conflict with guidelines which lead to more positive outcomes.

### SHOULD:

- Regularly check for the latest version of all guidelines, regulations, market requirements, etc.

### MAY:

- Apply company-specific criteria which lead to more conservative outcomes;
- Expand the number of sustainability performance categories (i.e. beyond A, B, C) to ensure that PARCs are appropriately categorized and managed according to company strategy.

## When reporting on targets related to portfolio coverage (level 2), companies

### SHALL:

- Report on coverage using revenues to weight the percentage of portfolio covered;
- Report the scope of revenue covered by the PSA assessment;
- Explain rationale for scope selection;
- Communicate the target that was set;
- Report progress versus targets;
- Not exclude parts of their business from reporting without explaining the rationale for exclusion.

### SHOULD:

- Report on progress versus previous years
- Explain the roadmap towards targeted coverage and when intermediate milestones are reached (e.g. 80% milestone)

### MAY:

- Explain what is already covered and what is not;
- And, report coverage using other parameters (e.g. tons, etc.);
- Comment on the ambition level of coverage over time (i.e. why is the target e.g. 25%).

## When reporting on the percentage of the portfolio in each of the PSA performance categories (level 3), companies

### SHALL:

- Apply (internal or external) assurance and report on assurance processes followed;
- Use at least three categories (positive, neutral, negative) to report sustainability performance of the portfolio, although use of five categories is recommended, and report both on the positive (A) and negative categories (C);
- Cross-reference the company's definitions of categories with definitions provided in this document;
- Not report on individual categories (e.g. only report on A+ products);
- Not use PSA outcomes for comparative assertions versus other companies' portfolios or individual products.

### SHOULD:

- Report on additional performance measures and targets that support sustainable portfolio steering.

### MAY:

- Choose to report on three categories (A, B, C) or five categories (A++, A+, B, C-, C- -) or more if these can be translated back to the three or five categories indicated in this Methodology.

## When reporting on targets related to the shifting of the portfolio towards specific PSA performance categories (level 4), companies

### SHALL:

- Communicate the target that was set;
- Report progress versus targets;
- Explain how PSA is integrated in key business processes decision-making (i.e. how do PSA results influence company decision-making).

### SHOULD:

- Not only set targets to increase the A categories, but also reduce the C categories (where appropriate);
- Aim to further improve in positive categories.

### MAY:

- Set targets for only one of the categories;
- Comment on the ambition level over time (i.e. why is the target e.g. 25%);
- Provide case examples of how PSA has influenced decision-making.





# Appendices

## APPENDIX I

### Relationship to existing guidance documents

The PSA Methodology builds on internationally accepted standards and guidelines on LCA and carbon footprinting and is therefore not a stand-alone document. Use of the terms “shall”, “should” and “may” conforms to ISO/IEC directives (2011). Illustration X shows how the guidance document builds on existing guidance documents and standards.



- ISO 14040:2006 (Environmental management – Life cycle assessment – Principles and framework)
- ISO 14044:2006 (Environmental management – Life cycle assessment – Requirements and guidelines)
- ISO/TS 14067
- GHG Protocol (Scope 1+2+3)
- European Commission Product Environmental Footprint (PEF)
- PAS 2050

## APPENDIX II

# Definition of signal categories

### SIGNAL CATEGORY 1 Chemical hazard and exposure across the life cycle

Companies shall evaluate chemical hazard and exposure across the life cycle. The chemical industry Methodology follows a risk-based approach, implying that both the hazard level and the risk from exposure are considered.

The Methodology aims to achieve further convergence in guidance with leading platforms on ecotoxicology and toxicology, which will be reflected in the next updates of the Methodology document.

#### At the minimum companies shall:

- Regularly review latest standards to ensure that applied criteria and thresholds are in line with relevant regulatory standards in the area of Toxicology and Ecotoxicology
- Apply a risk-based approach, implying that both the hazard level and exposure are considered

Companies shall develop a list of Priority 1 substances, which should **at least**<sup>1</sup> include substances classified as:

- GHS Cat. 1A/1B CMRs (H340, H350, H360, H362), IARC group 1 and 2A Carcinogens and/or NTP known human carcinogens and reasonably suspected human carcinogens
- Substances determined as very persistent and very bio-accumulative (vPvB) or persistent, bio-accumulative and toxic (PBT) in the environment as defined by EU REACH, US TSCA or equivalent
- Endocrine disruptors<sup>2</sup>

Companies shall develop a list of Priority 2 substances, which should **at least**<sup>1</sup> include substances classified as:

- GHS Cat. 2 CMRs (H341/351/361), IARC group 2B Carcinogens
- GHS Cat. 1/2 Acute toxic (dermal, oral, inhalation) (H310/H300/H330)
- GHS Cat. 1 Specific target organ toxic (repeated exposure) (H372)
- GHS Cat. 1A/1B Skin sensitizer and Cat. 1 respiratory sensitizer (H317/H334)
- GHS Cat 1 Acute aquatic toxic (H400) and Cat I chronic aquatic toxic (H410)
- GHS Ozone depleting substances (H420)

Companies may also consider (optional):

- Other safety and health risks related to the use of the product in the application

**Companies shall apply the following criteria to determine whether exposure to substances leads to a material risk:**

- The hazardous substance (as per categories on the previous page) represents:
  - o For Priority 1 substances: > 0.1%, weight-for-weight of the final product
  - o For Priority 2 substances: > 1.0%, weight-for-weight of the final product
- **And** the product is intended for professional or consumer use or for industrial use where the substance is not fully contained
- **And** a full risk assessment following a recognized methodology<sup>3</sup> was either not executed, or the assessment indicated an unacceptable risk to be present (e.g. Risk Characterization Ratio (RCR) > 1)

### Signal categorization:

<b>Strong positive</b>	The PARC actively eliminates <sup>4</sup> a material risk from priority 1 substances
<b>Weak positive</b>	The PARC actively eliminates <sup>4</sup> a material risk from priority 2 substances
<b>Neutral</b>	The PARC has neither positive nor weak signals
<b>Weak negative</b>	Safe intended or observed use of the PARC across its lifecycle cannot be demonstrated because of material risk from priority 2 substances
<b>Strong negative</b>	Safe intended or observed use of the PARC across its lifecycle cannot be demonstrated because of material risk from priority 1 substances

<sup>1</sup> This is a minimum list. Companies may add additional substances and/or move substances from priority 2 to priority 1 (though not the other way around)

<sup>2</sup> Companies should use the EU definition as it is the most advanced. If another definition of Endocrine disruptors is used, companies shall report on the definition used

<sup>3</sup> Recognized by a regulatory authority such as the ECHA, US-EPA or equivalent government body regulating hazardous substances

<sup>4</sup> "Actively eliminates" implies that the PARC is not yet a mature solution: (potential) customers in the PARC are still using an incumbent solution with identified material risk.



## SIGNAL CATEGORY 2

### Regulatory trends and global conventions

Companies **shall** evaluate announcements by regulatory bodies and lists considered to be 'early warning indicators' for upcoming legislation.

Companies shall develop a list of Priority 1 substances, which should at least<sup>1</sup> include substances classified as:

• **Banned and restricted substances**, as communicated with a clear sunset date by individual OECD countries and/or supranational governments (e.g. EU) and/or supranational bodies (e.g. UN, UNEP), including at least:

- o US EPA Section 6 Banned Chemicals
- o REACH authorization list (Annex XIV)
- o Ban of a substance identified under REACH restrictions (Annex XVII)
- o Laws, regulations, bans/restrictions from individual OECD countries<sup>2</sup>

• **Globally relevant conventions, including at least:**

- o Substances causing damage to the ozone layer as listed in the Montreal protocol
- o Persistent organic pollutants (POPs), as identified under the Stockholm Convention
- o Substances subject to prior informed consent (PIC) under the Rotterdam Convention

Companies shall develop a list of Priority 2 substances, which should **at least**<sup>1</sup> include substances classified on:

- Authoritative '**candidate**' lists, indicating the possibility of being negatively affected by future legislation (a negative outcome is expected by experts and the legislation is relevant for the application in question), including at least:
  - o Substances of very high concern, as identified under REACH regulation (candidate list), or similar lists in other countries

- o California proposition 65
- o OSPAR list

Companies may also consider (optional):

- Other relevant 'opinion leading' countries (e.g. BRIC) and states (e.g. California)
- Other countries/states representing significant share of PARC demand or use
- Other lists considered to be early warning indicators

#### Signal categorization:

<b>Strong positive</b>	The PARC supports customers in: <ul style="list-style-type: none"> <li>o Implementing future regulations &amp; global conventions which have already been passed (yet not put in force) today, or</li> <li>o Actively replacing<sup>3</sup> substances which are listed under 'strong negative'</li> </ul>
<b>Weak positive</b>	The PARC supports customers in: <ul style="list-style-type: none"> <li>o Delivering on today's regulations (e.g. fiscal incentives) and global conventions or</li> <li>o Actively replacing<sup>3</sup> substances which are listed under 'weak negative'</li> </ul>
<b>Neutral</b>	The PARC has neither positive nor weak signals
<b>Weak negative</b>	The PARC contains substance(s) included in the priority 2 substance list and the listing is relevant for the application (i.e. a ban on use in food applications is only relevant for food applications)
<b>Strong negative</b>	The PARC contains substance(s) included in the priority 1 substance list and the listing is relevant for the application (i.e. a ban on use in food applications is only relevant for food applications)

<sup>1</sup> This is a minimum list. Companies may add additional substances and/or move substances from priority 2 to priority 1 (though not the other way around).

<sup>2</sup> The strong negative does not apply to other regions if credible evidence indicates that the risk will not spread beyond the current countries in which the PAC is banned

<sup>3</sup> "Actively replacing" implies that the PARC is not yet a mature solution: (potential) customers in the PARC are still using an incumbent. solution with substances on the mentioned lists.

## SIGNAL CATEGORY 3 Sustainability ambitions along the value chain

Companies shall evaluate how a PARC performs on sustainability-related requirements and objectives of relevant actors in the value chain.

To evaluate how a PARC performs on sustainability-related requirements and objectives, companies shall:

### 1. Analyze sustainability requirements and objectives of key actors in the respective application and region. At the minimum, companies shall assess the requirements and objectives of:

- o Opinion leaders which may include organizations whose opinion is expected to lead to changed behavior or actions by market players (e.g. early

warning indicator lists which are relevant in the respective value chain, such as SIN list), and/or

- o Large players in application or value chain, which may include relevant direct and intermediate, potential customers, relevant brand owners and retailers, end-customers or consumers, associations or alliances, suppliers and supplier associations

### 2. Define:

- o Top sustainability commitments of key actors in the value chain and/or their representative associations (as evidenced by a materiality assessment, or a strong partnership by relevant players to deliver on the commitment)

- o Other secondary sustainability commitments of actors in the value chain and/or their representative associations as evidenced by a commitment made in public communication which includes an action plan with explicit date

### 3. Assess the implications of the above sustainability commitments for specific products and applications, e.g.:

- o What products are banned/restricted because of sustainability reasons?
- o What products are promoted because of their contribution to sustainability requirements and objectives?

#### Signal categorization:

<b>Strong positive</b>	The PARC delivers on top sustainability commitments of actors in the value chain and/or their representative associations, e.g. by: <ul style="list-style-type: none"> <li>– Substituting a “Strong Negative” solution, or</li> <li>– Delivering on a top sustainability commitment in the industry (as evidenced by a materiality assessment, or a strong partnership with relevant players to deliver on the commitment)</li> </ul> AND: The PARC must be regarded as amongst the best-in-class solutions in the market in terms of sustainability performance on the respective sustainability indicator
<b>Weak positive</b>	The PARC delivers on other sustainability commitments of actors in the value chain and/or their representative associations (as evidenced by a commitment made in public communication which includes an action plan with explicit date at which the ban / restriction becomes effective) The PARC delivers on top sustainability commitments of top players and/or industry without having top performance
<b>Neutral</b>	The PARC has neither positive nor weak signals
<b>Weak negative</b>	The PARC is banned/restricted because of sustainability reasons by one opinion leader or large market player <b>Optional:</b> companies may consider non-public communication from credible sources (e.g. direct customer communication) on bans / or restrictions of relevant actors in the value chain because of sustainability reasons
<b>Strong negative</b>	The PARC is banned/restricted because of sustainability reasons by at least two relevant opinion leaders or large market players or one association <b>Optional:</b> companies may consider non-public communication from credible sources (e.g. direct customer communication) on bans / or restrictions of relevant actors in the value chain because of sustainability reasons

## SIGNAL CATEGORY 4 Authoritative ecolabels, sustainability related certification and standards

Companies shall evaluate requirements and objectives of relevant ecolabels and sustainability-related certification in the application

- **At the minimum, companies shall consider** ecolabels and certificates which are leading and accepted indicators on sustainability performance in the value chain, as defined by the materiality analysis

- **Companies should define what a relevant ecolabel is.** If there is no relevant ecolabel/certificate, there is no signal
- **Companies may also consider:**
  - o Ecolabels which are nice-to-have and which signal superior sustainability performance
  - o Other relevant ecolabels to be identified per application and region (examples can be found on [ecolabelindex.com](http://ecolabelindex.com), for example)

### Examples of relevant sources

- Requirements for ecolabel classification
- Requirements for certification

### Signal categorization:

<b>Strong positive</b>	The PARC enables customers to obtain ecolabel(s) and/or certificate(s) which are leading indicators on sustainability performance in the value chain ( e.g. for which the market penetration is <20% (i.e. strong differentiating performance)
<b>Weak positive</b>	The PARC enables customers to obtain ecolabel(s) and/or certificate(s) which are leading indicators on sustainability performance in the value chain (e.g. for which market penetration is <50%)
<b>Neutral</b>	The PARC has neither positive nor weak signals
<b>Weak negative</b>	The PARC prevents customers from being granted ecolabels and/or certificates which are leading indicators on sustainability performance in the value chain ( e.g. and for which the market penetration is >50%)
<b>Strong negative</b>	Not applicable

## SIGNAL CATEGORY 5

### Environmental and social performance across lifecycle compared to alternative solutions

Companies **shall** evaluate how the PARC performs on sustainability signals when compared to alternative solutions

- **At the minimum, companies shall consider any relevant**

- o WBCSD guidance for the chemical industry on environmental LCA minimum requirements (Product Life Cycle Metrics for Chemical Products (WBCSD, 2014))
- o WBCSD social metrics minimum requirements (Social Capital Protocol, WBCSD 2017 and Social Metrics for Chemical Products, WBCSD 2016)

o It's not a minimum requirement to execute LCAs

- **Companies may also consider:** Other sustainability-related signals
- Excluded are: profitability, price, volume, growth
- Included are: helping to increase access to or penetration of solutions which improve environmental or social performance (e.g. availability of high quality food)

#### Typical process to follow

1. Start with full list of relevant criteria
2. Select relevant sustainability performance criteria for the application (e.g. energy, water, etc.)
3. Consider relevant competing solutions, which shall include the most mainstream alternative solution, in the market
4. Estimate overall performance<sup>1</sup> versus competing solutions on the relevant sustainability criteria in the relevant life cycle step(s) of the product
5. Optional materiality test: Is the benefit direct and significant so that customer will opt for your solution instead of a competing solution?<sup>2</sup>

#### Signal categorization:

<b>Strong positive</b>	The PARC provides a direct, significant and measurable improvement over relevant competing solutions in the market, and <ul style="list-style-type: none"> <li>– AND: The contribution of the chemical product to the PARC is fundamental or extensive<sup>3</sup>)</li> <li>– AND: The PARC is amongst the best-in-class solutions in the market in terms of sustainability performance</li> </ul>
<b>Weak positive</b>	The PARC provides a direct, significant and measurable improvement over mainstream solutions (or over next-best alternative if you are the leading solution <sup>4</sup> over the life cycle, and The contribution of the chemical product to the PARC is fundamental, extensive, or substantial
<b>Neutral</b>	The PARC has neither positive nor weak signals
<b>Weak negative</b>	The PARC has direct, significant and measurable disadvantages in terms of environmental and social performance (over the life cycle when compared to relevant solutions, performance is below average, yet not a bottom performer)
<b>Strong negative</b>	The PARC has direct, significant and measurable disadvantages in terms of environmental and social performance over the life cycle and the PARC is amongst bottom sustainability performers on key sustainability indicators

<sup>1</sup> Performance benchmark to be based on credible external evidence. Determining overall performance may require weighting, which can be done using quantitative measures (e.g. monetization, weights) or qualitative expert judgments

<sup>2</sup> i.e. companies are allowed to disregard sustainability benefits for which no demand in the market was identified

<sup>3</sup> As defined in the avoided emissions guidance, Avoiding Greenhouse Gas Emissions: The essential role of chemicals

<sup>4</sup> Only if the next-best alternative has a significant market share (else the positive signal cannot be claimed)

## SIGNAL CATEGORY 6

### Sustainable value creation

Companies **should** compare the PARC's economic value creation with environmental and societal impacts.

The chemical industry, like other energy-intensive industries such as the cement and steel, is scrutinized by stakeholders because of the industry's perceived environmental impacts. Given the importance of the topic for key stakeholders and that such environmental impacts (externalities) will potentially be internalized following 'the polluter pays' principle, it is important for companies to measure whether the PARC's cradle-to-gate footprint entails an opportunity or risk to the company.

This recommended, but not mandatory, section focuses on assessing the PARC's economic value creation compared to the impacts of its cradle-to-gate operations on the environment. In addition to assessing environmental impacts, companies may also include social impacts with the cradle-to-gate value chain in the assessment.

#### Typical process to follow

Companies generally apply slightly different approaches to evaluate signals in this category, although the overall reasoning is often consistent. Best-practice approaches include:

- Calculate environmental footprint (LCA from cradle to exit gate of the factory) for one unit of product (typically by weight)
- Weight the different

environmental impacts (for example, but not necessarily through the monetization of environmental impacts)

- Compare value withdrawn of environmental and societal impacts by the PARC's cradle-to-gate operations with PARC revenues. Companies typically either:
  - o Subtract environmental damage created from economic revenues
  - o Divide economic revenues by monetized environmental damage created
- The guidance in this section aims to provide flexibility to companies in the way that economic value creation is compared to the environmental impacts

#### Signal categorization:

<b>Strong positive</b>	Economic value substantially exceeds value of environmental and societal impacts Example metrics: – Value of economic value is more than double the value of natural resources withdrawn, or – Selling price > twice the monetized manufacturing footprint per kg product
<b>Weak positive</b>	Economic value exceeds the value of environmental and societal impacts Example metrics: – Value of economic value is more than the value of natural resources withdrawn, or – Selling price > the monetized manufacturing footprint per kg product
<b>Neutral</b>	Economic value is (about) equal to withdrawn natural capital
<b>Weak negative</b>	Value of environmental and societal impacts exceeds economic value Example metrics: – Value of natural resources withdrawn is more than the PARC's economic value, or – Monetized manufacturing footprint per kg product > selling price
<b>Strong negative</b>	Value of environmental and societal impacts substantially exceeds economic value Example metrics: – Value of natural resources withdrawn is more than double the PARC's economic value, or – Monetized manufacturing footprint per kg product > twice the selling price



## SIGNAL CATEGORY 7 Contribution to the Sustainable Development Goals

Companies should evaluate the contribution of PARCs to the delivery of the UN Sustainable Development Goals (SDGs). In addition, the guidance in this section provides a standardized approach to cross-reference identified sustainability-related benefits to the SDGs, enabling the company to report how its solutions contribute to the SDGs.

### What are the SDGs?

On 25 September 2015, UN Member States adopted a set of 17 goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. More information on the SDGs can be found [here](#).



### Typical process to follow

Companies should assess which of the SDGs material for the PARC, by reviewing the SDG targets and SDG indicators.

### Signal categorization:

<b>Strong positive</b>	The chemical product is the key component (contribution is 'Fundamental') that contributes to the achievement of the material UN SDG(s) Please refer to the Guidance, "Avoiding Greenhouse Gas Emissions: The essential role of chemicals" for details on the methodology to evaluate the level of contribution of the chemical product
<b>Weak positive</b>	The chemical product is part of the key component (contribution is 'extensive') and its properties and functions are essential to the achievement of the material UN SDG(s). Please refer to the Avoided Emissions guidance for details on the methodology to evaluate the level of contribution of the chemical product
<b>Neutral</b>	The PARC has neither positive nor negative signals
<b>Weak negative</b>	Not applicable
<b>Strong negative</b>	Not applicable

## SIGNAL CATEGORY 8

### Company internal guidelines and objectives

Companies should evaluate compliance to internal sustainability-related guidelines. This section is optional and there are no minimum requirements. In line with the cautionary approach, application of internal guidelines shall only lead to more negative evaluations, and therefore cannot lead to the identification of positive signals.

Examples of internal guidelines and objectives applied by companies include sustainability-related corporate guidelines on:

- o Company code of conduct
- o Product Safety
- o Sustainability Objectives & Strategy (e.g. on GHG emissions, energy efficiency, etc.)
- o Minimum profitability levels
- o No-go applications
- o Supplier sustainability requirements

#### Signal categorization:

<b>Strong positive</b>	Not applicable
<b>Weak positive</b>	Not applicable
<b>Neutral</b>	The PARC has neither positive nor negative signals
<b>Weak negative</b>	The company aims to reduce consumption and/or use of the PARC
<b>Strong negative</b>	The PARC does not comply with company minimum requirements / standard



## APPENDIX III

# Glossary

### Assurance

The quality management process aimed at safeguarding that the inventory results and report are complete, accurate, consistent, transparent, relevant, and without material misstatements.

### Chemical product

The chemical product is the product sold by the reporting company.

### Comparative assertion

A claim regarding the superiority or equivalence of the performance of one product versus a competing product that performs the same function.

### Company

The term company is used in this PSA Methodology as shorthand to refer to the entity developing a PSA, which may include any organization or institution, either public or private, such as businesses, corporations, government agencies, non-profit organizations, assurers and verifiers, universities, etc.

### Cradle-to-gate inventory

A partial life cycle of an intermediate product, from material acquisition through to when the product leaves the reporting company's gate (e.g., immediately following the product's production).

### Cradle-to-grave inventory

Environmental and social impacts of a studied product from material acquisition through to end-of-life.

### Downstream

Environmental or social impacts associated with processes that occur in the life cycle of a product subsequent to the processes owned or controlled by the reporting company.

### Final product

Goods and services that are consumed by the end user in their current form, without further processing, transformation, or inclusion in another product. Final products include not only products consumed by end consumers, but also products consumed by businesses in the current form (e.g., capital goods) and products sold to retailers for resale to end consumers (e.g., consumer products).

### Intermediate products

Goods that are used as inputs to the production of other goods or services.

### Materiality

Signals on sustainability performance are considered to be material when both of the following aspects apply:

- Significant – the signal is expected to lead to changed behavior / actions by relevant stakeholders, and
- Measurable – the signal is based on a factual observation from a credible source

### May

The term "may" is used in this document to indicate a course of action permissible within the limits of the document. (ISO/IEC, 2011).

### Shall

The term "shall" is used in this document to indicate requirements strictly to be followed in order to conform to the guidelines in this document and from which no deviation is permitted. (ISO/IEC, 2011).

### Should

The term "should" is used in this document to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited. (ISO/IEC, 2011).

### Life cycle

Consecutive and interlinked stages of a product system, from raw material acquisition or generation of natural resources to end-of-life.

### Life cycle Assessment (LCA)

Compilation and evaluation of inputs, outputs and potential environmental impacts of a product system throughout its lifecycle.

### Life cycle stage

A useful categorization of the interconnected steps in a product's life cycle for the purposes of organizing processes, data collection, and inventory results.

### PARC

Product-Application-Region Combination. PARCs are the unit of analysis for PSA in the chemical industry methodology for PSAs.

### Quality criteria

Guidelines to support companies in developing and applying consistent, high quality PSA approaches.

### Reporting

Presenting data to internal management and external users such as regulators, shareholders, the general public or specific stakeholder groups. External reporting refers to the reporting to external stakeholders.

## SDGs

UN Sustainable Development Goals. For more information, please refer to <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

## Signal

A signal is defined as a fact-based observation on material, sustainability-related actions or commitments of key stakeholders (e.g. legislation, purchasing decisions, ecolabel requirements) which indicate whether or not the PARC is perceived to be contributing to a transition towards a more sustainable world. Signals are identified through the evaluation of public communication of key stakeholders (e.g. governments, downstream players, ecolabels, industry associations, etc.).

## Solution

Any product in its application along the value chain, a chemical product, a material from another industry, a component or a final technology which fulfills the need of the purchaser.

## Solution to compare to

The alternative (often competing) solution providing the same benefit to the customer as the reporting company's solution.

## Sustainability goals

Key objectives of respective actors to improve environmental or social performance.

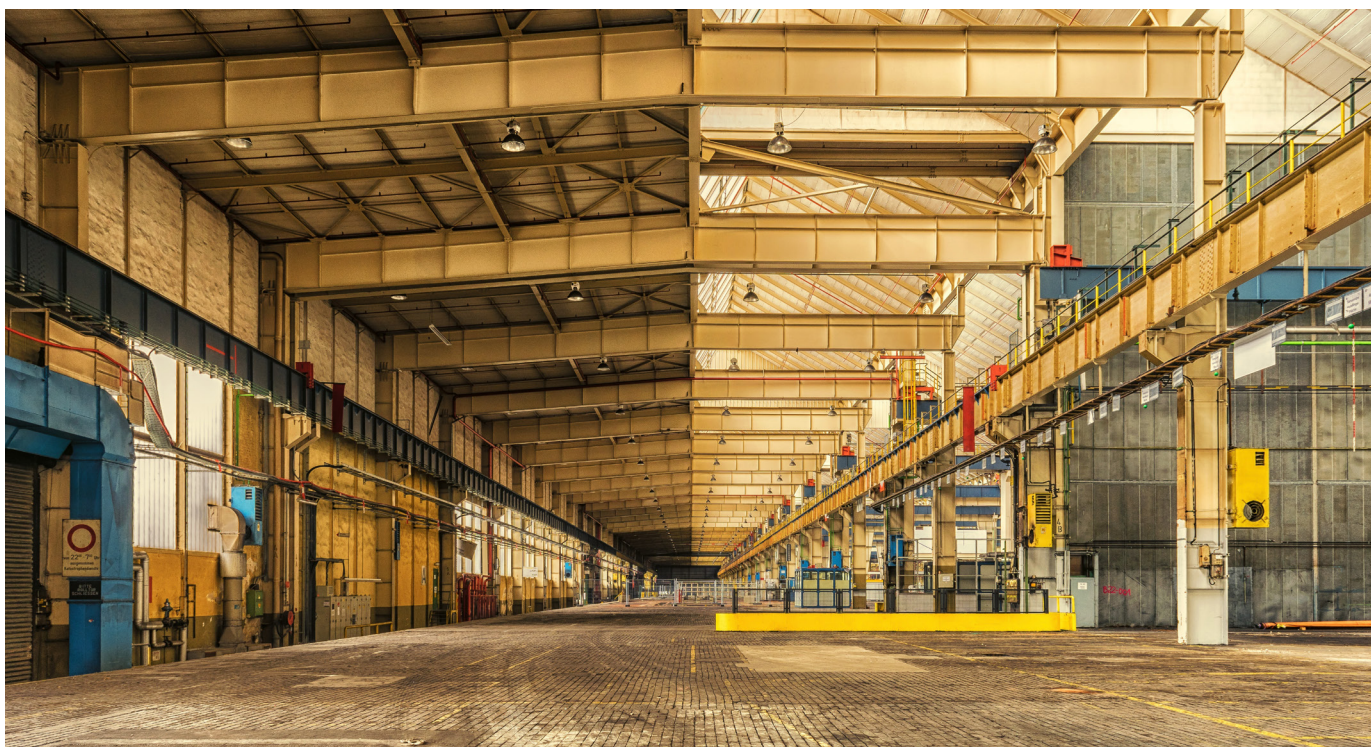
## Third party (external) assurance

Assurance performed by a person(s) from an organization independent of the company performing the PSA process.

Internal assurance refers to assurance processes performed by the reporting company itself, without a review by independent external parties.

## Value chain

In this PSA Methodology, "value chain" refers to all of the upstream and downstream activities associated with the operations of the reporting company, including the use of sold products by consumers and the end-of-life treatment of sold products after consumer use.



## Authors

The working group has been led by Andrea Brown, Director, Circular Economy for WBCSD and has been supported by Marijn Vervoorn of Arthur D. Little. We would like to thank Marijn and other collaborators for their contribution in this project.

A special thanks to Andreas Kicherer (BASF), Eric Bischof (Covestro), and Dominique Debecker (Solvay), that have Co-Chaired this project.

## Working group participants:

**Klas Hallberg, Julian Hunter,**  
(AkzoNobel);

**Andreas Kicherer, Dirk Voeste,**  
(BASF);

**Lynette Chung** (Clariant);

**Eric Bischof, Lydia Simon**  
(Covestro);

**Jacobine Das Gupta** (DSM);

**Jennifer Creek, Camille de Moor, Lauren Johnson** (Eastman Chemical);

**Frank Steding, Guido Vornholt,**  
(Evonik Industries);

**Daniel Gambus, Sreepad**

**Karanam, Matthew Morrison**  
(SABIC);

**Dominique Debecker, François De Vos, Bruno Van Parys** (Solvay).

We also thank the many other external stakeholders we have engaged with throughout.

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**World Business Council  
for Sustainable Development**

Maison de la Paix  
Chemin Eugène-Rigot 2B  
CP 2075, 1211 Geneva 1 Switzerland  
[www.wbcsd.org](http://www.wbcsd.org)

