

Sustainability in Sourcing & Procurement

How integrating sustainability metrics in sourcing processes contributes to holistic sourcing decisions

The case for sustainable sourcing

Asking Chief Procurement Officers for topics that are high on their agenda has repeatedly brought up savings, digitalization and sustainability as overarching themes. While savings have been a constant for Procurement over the centuries, digitalization and sustainability have emerged primarily over the last two decades.

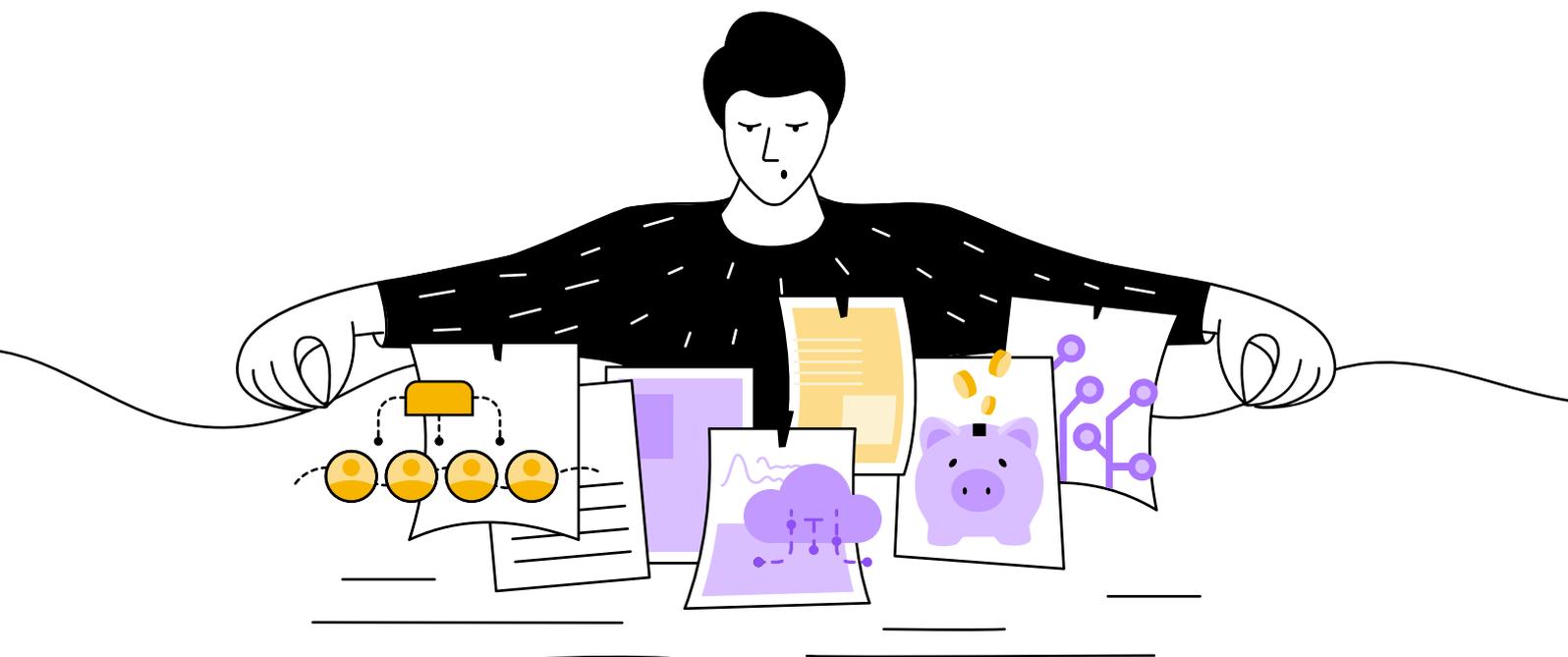
Since the beginning, digitalization has been well covered both in research and in practice, with software companies, analysts and consultancies supporting Procurement organizations in their digitalization efforts. Sustainability on the other hand has often been sidelined, never fully taking the spotlight as commercial implications and benefits could not adequately be assessed.

Today, politics and society exert enormous pressure on companies to minimize the environmental impact of their products, processes, and supply chains. Procurement as a strategic business partner can play a key role in reducing the environmental impact of organizations by integrating sustainability measures into supplier assessments and selection processes. And while the enabling technology is available today, the measurement of environmental metrics and the standardized integration into sourcing decisions still poses major challenges for companies.

To meet this market requirement and drive more holistic sourcing decisions, standardized sustainability indicators that can be considered in addition to costs, quality and other factors are needed. This research study advances the integration of environmental considerations in strategic sourcing by developing category-specific sustainability indicators for four spend categories with large environmental footprints, namely raw materials, packaging, logistics & transportation and operating resources & equipment.

We conducted 17 expert interviews on top of a comprehensive literature review and uncovered 6-10 sustainability indicators for each spend category. The individual relevance was subsequently assessed in an online survey with 107 procurement professionals from various industries.

Our findings enable and support the consideration of sustainability data in sourcing decisions in multiple ways. Firstly, they clearly outline the topics most relevant to sourcing professionals for key spend categories impacting the environmental footprint of organizations. Next, they clearly point the governmental, non-governmental and public community towards the areas with a high need and potential for additional research and standardization of definitions. Lastly, the results outline



opportunities for differentiation in the marketplace. With organizations aiming to assess and include the environmental performance of suppliers across their supply chain into the decision-making process, this transparency can be a source for innovation and competitive advantage for buying organizations and suppliers alike.

In summary, the study confirms that the integration of sustainability indicators into the sourcing process can positively contribute to the achievement of corporate goals. Using a mix

of sustainability indicators, environmental data and supplier sustainability performance metrics can support the evaluation and balancing of commercial and environmental implications in strategic sourcing decisions. Therefore, taking a step-by-step approach to measuring and integrating sustainability metrics for spend categories with the largest ecological footprint is advisable for organizations aiming to enhance their decision-making process with sustainability considerations.

Top 3 sustainability metrics by category			
	Sustainability indicator	Rank	Overall
Raw materials	CO2 (GHG) emissions during production	1	4.31
	Environmental certificates and labels	2	4.20
	Investments in sustainability projects & initiatives	3	4.07
Packaging	Certification of material (e.g., FSC)	1	4.24
	Usage of reusable packaging	2	4.17
	Percentage of recyclable content	3	4.06
Logistics & transportation	Transportation mode (Air, road, water or rail)	1	4.26
	Network optimization / Freight consolidation	2	4.25
	Transport-unit capacity utilization	3	4.16
Operating resources & equipment	Energy efficiency of equipment	1	4.42
	Use of renewable energy sources	2	4.24
	Equipment lifetime	3	4.14

Most relevant sustainability indicators by spend category (scale 1-5 with 5 being the most relevant)

Sustainability and Sourcing – an evolving relationship

In 1987, the UN has defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” In other words, it is the ability to maintain something at a certain rate or level.

Because this definition is rather abstract, the term Sustainability needs to be viewed through the lens of ones’ ability to influence it. The Chartered Institute of Procurement & Supply has therefore defined sustainability in Procurement as the “act of adopting social, economic and environmental factors alongside the typical price and quality considerations into the organizations handling of procurement processes and procedures.”¹

In the context of this study, **Sustainable Sourcing** means the identification and selection of the best source of supply for a good or service under consideration of environmental dimensions next to commercial aspects. With little to no established metrics available, the aim of the study was to establish meaningful sustainability metrics for different commodities.

¹ <https://www.cips.org/knowledge/procurement-topics-and-skills/sustainability/>

Especially for companies with low vertical integration, a large part of the emissions and environmental impacts occur in its supply chain. As such, sourcing decisions can play a key role in implementing sustainability measures and minimizing the overall environmental footprint. By assigning a monetary value to them, sustainability metrics can enhance traditional supplier selection criteria and allow organizations to measure the environmental impact of their decisions.

While the goal of including supplier sustainability performance in sourcing decisions is minimizing the operational impact on the environment along the supply chain, the motivation to do so is more diverse. External drivers include stricter regulatory requirements and heightened customer awareness & expectations alike.

Politicians and society as a whole demand more sustainable raw materials, products and packaging as well as reduced transportation emissions, independent of categories and industries. With investment funds increasingly pegging their investment decisions to corporate sustainability goals, incorpo-

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rating sustainability metrics in decision making can support the implementation of organizational initiatives and improve the public image of an organization.

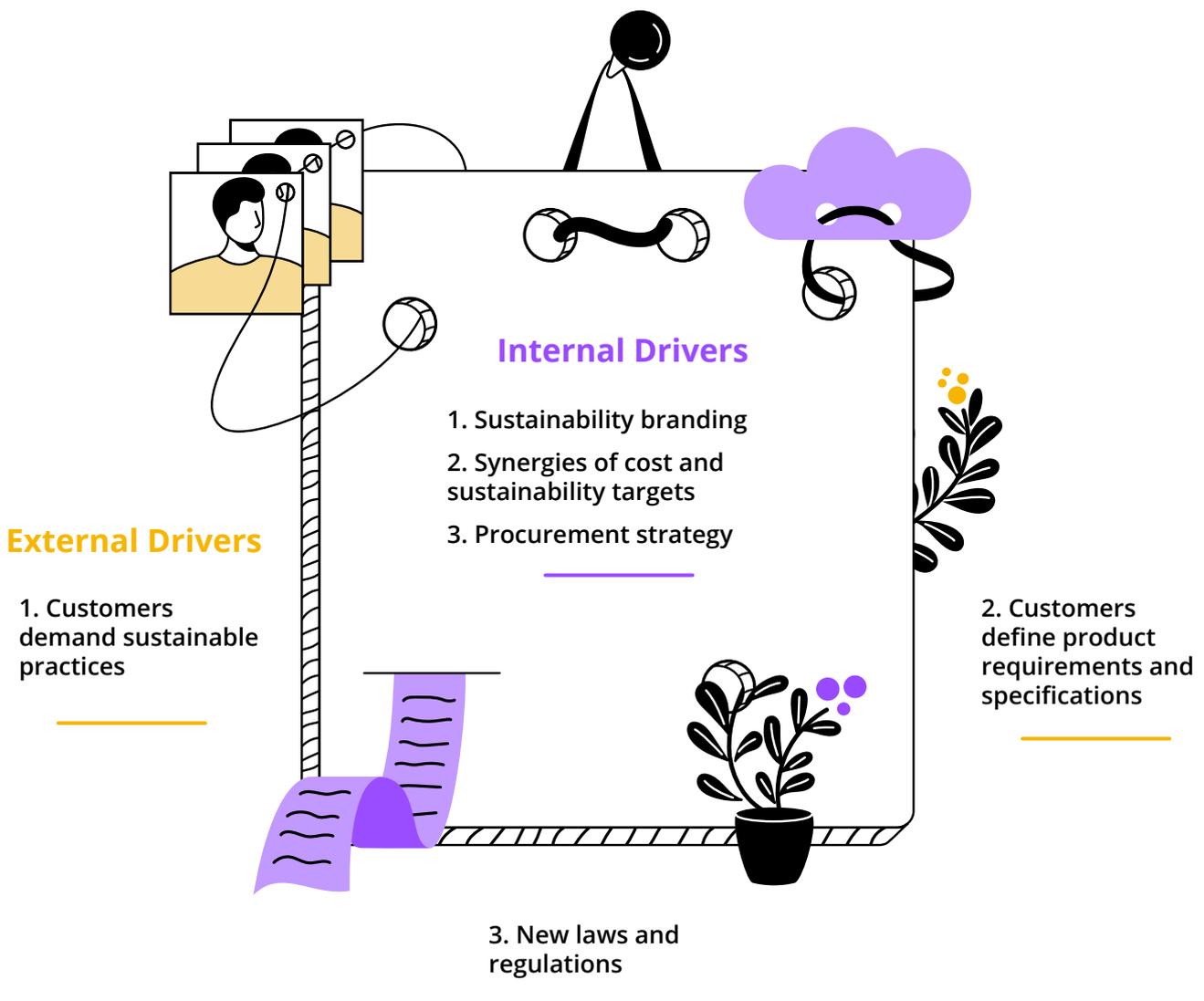
Today, many organizations have established a minimum of sustainable sourcing practices by establishing a mandatory Supplier Code of Conduct. The Code of Conduct specifies all requirements a supplier must fulfill to qualify for working with the organization. It usually stipulates general expectations for environmental, social and regulatory compliance with established standards and norms, but rarely specific and actionable metrics for environmental and social standards on a category level.

Defining sustainability targets on this granular level in category strategies is required to actively minimize the environmental impact of the company and its supply chain though. Only few companies with strong internal motivations are doing this today, but it enables them to systematically include standardized

sustainability metrics alongside cost, quality, and risk metrics in their supplier selection process.

Sustainability rating agencies like EcoVadis or MSCI support companies in the assessment of their supplier base with standardized sustainability ratings. Including these ratings into the supplier evaluation and selection process is an easy way to consider and commercially evaluate the environmental impact of different sourcing alternatives.

While these ratings are a great starting point, they often rely on self-assessments of suppliers. This means additional standardized metrics are needed to drive impactful sustainable sourcing decisions.



Sustainability metrics in Strategic Sourcing

Sustainability metrics measure the current state of environmental practices, enabling organizations to monitor their supply chain partners and to compare available options. This drives transparency and allows the tracking of progress over time. By addressing and quantifying sustainable practices, the metrics are ideally suited to enhance the supplier selection in strategic sourcing processes.

For this study, we developed category-specific sustainability indicators for four different spend categories and industries through expert interviews and a subsequent survey. We assessed the relevance of each indicator by asking participants to rate all indicators on a 5-point scale from “not relevant at all” (1) to “very relevant” (5). This chapter explores the findings and associated challenges of the identified indicators.

In summary, all identified category-specific sustainability indicators in our framework were considered relevant for assessing the environmental impact in strategic sourcing processes. By highlighting the commercial implications of environmentally friendly practices they can result in more holistic sourcing decisions.

On the flipside, difficulties with assessing some indicators proves to be a challenge for organizations who want to include sustainable metrics in a standardized way into their sourcing process. Further research and cross-industry alignment are therefore required to define generally acceptable sustainability metrics.

Challenges in measuring sustainability indicators

Besides the obvious challenge of collecting information in a harmonized, reliable and consistent way, missing standards for calculating and reporting metrics is cited as the main reason for not including sustainability metrics in sourcing decisions. With information on suppliers and external market data often sitting in multiple disconnected systems, a consistent application across the organization is further complicated.

On the other hand, sourcing managers see a lack of willingness in suppliers to share information with them. The inability to validate or to commercially evaluate the provided information is also seen as a significant challenge. On top, stakeholders opting for cheaper rather than more sustainable options add frustration for Procurement teams.

The lack of consistent and readily available data paired with insufficient sourcing technology and limited organizational commitment therefore limits the standardized inclusion of sustainability metrics in strategic sourcing decisions.





The technology sector experiences a lot of traction for providers tracking and maintaining sustainability information. Integrating these into sourcing applications will simplify the modelling of sourcing scenarios and commercially evaluating the economic implications. This will allow Procurement to take a more holistic view on available award options and have more fact-based discussions with stakeholders and suppliers alike.

Sustainability metrics

Raw Materials

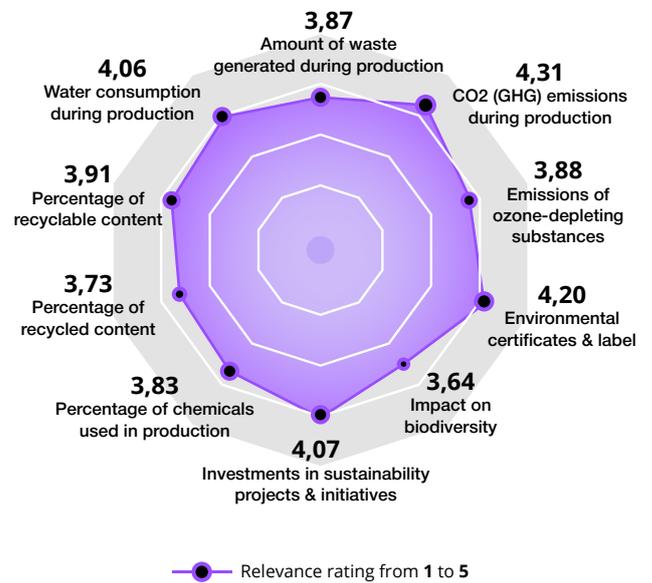


While 'raw materials' is a rather broad term, the relevant sustainability drivers have been consistent across industries. **CO2 (GHG) emissions during production, Environmental certificates & labels** and **Water consumption during production** are the dominant metrics.

The high focus of politicians and society as a whole on CO2 emissions and water usage of

companies, combined with standardized procedures for measuring and evaluating them, is the main driver behind this focus. On top, certificates allow companies to efficiently verify compliance with a variety of environmental standards and regulations by means of simple check-off criteria.

The inclusion of sustainability metrics in strategic sourcing decisions can therefore significantly contribute to reducing the company's overall environmental impact when they require large amounts of raw materials.



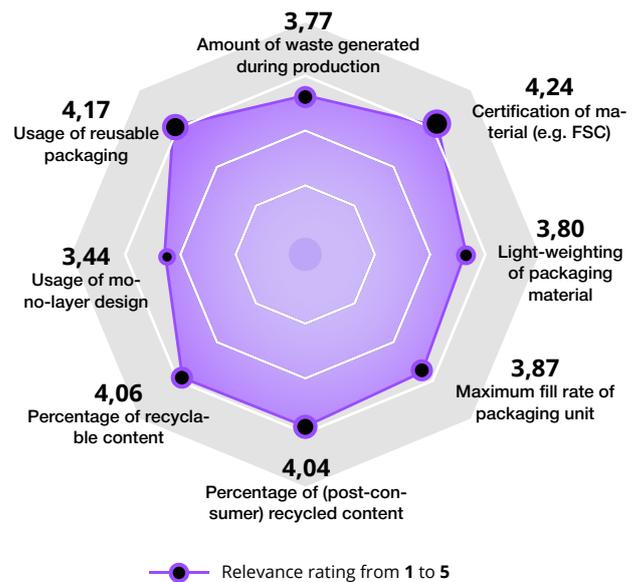
Packaging



Packaging is again a broad category, yet relevant sustainability drivers are consistent across industries. The **certification of the material**, the **usage of reusable packaging** and **light-weighting of packaging material** have the highest relevance. Differences across sub-categories haven't been explored in detail and require further research.

FSC certificates are well established for packaging materials and the main metric quoted. While the automotive and machine industry have a high focus on reusable packaging circulating between buyer and suppliers, the chemical and FMCG industry focus more on recyclable materials.

Besides that, respondents see high value in the overall reduction of packaging weight/material. Benefits include cost savings from the reduced material consumption and reduced emissions during distribution.

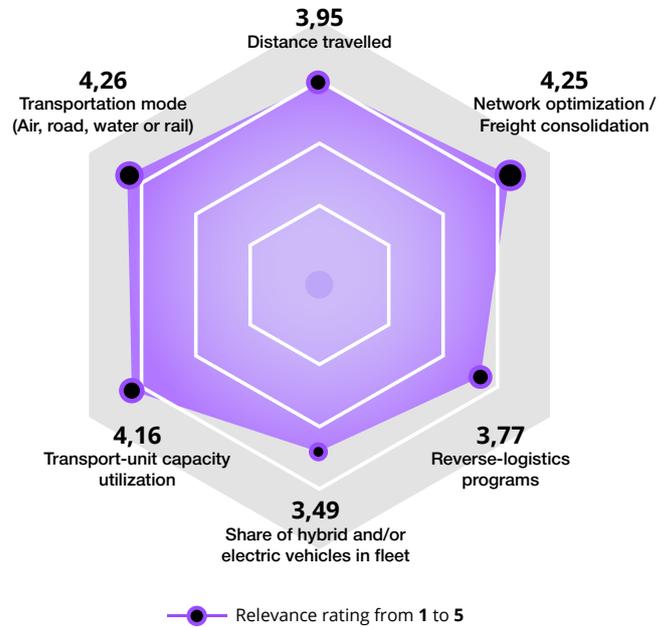


Logistics & Transportation



The sustainability indicators in the area of logistics & transportation are mostly commercially motivated. The most relevant indicators are **transportation mode (air, road, water or rail), network optimization / freight consolidation** and **transport-unit capacity utilization**.

The utilization of truck capacities determines the number of trucks needed, a direct correlation with the generated CO2 emissions. The main driver for considering these metrics is the potential cost saving generated from improved vehicle utilization, route optimization or distance reduction. Therefore, sustainability and cost targets can be achieved simultaneously in this sourcing category.

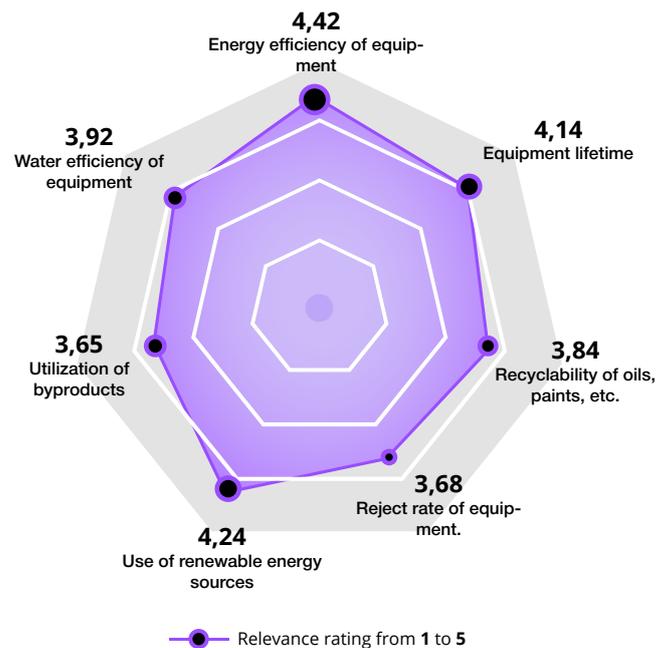


Operating Resources & Equipment



For the category operating resources & equipment the metrics **energy efficiency of equipment, use of renewable energy sources** and **water efficiency of equipment** are most relevant. All three indicators have a major influence on the company's environmental impact and corporate governance puts high priority on achieving these targets.

The consideration of the **equipment lifetime, utilization of byproducts** and **reject rate of equipment** on the other hand is strongly motivated by economic reasons. Improvements in these metrics reduce the amount of waste generated and can therefore result in significant cost-savings.



Overview of sustainability metrics by category and relevance

Relevance of sustainability metric								
	Sustainability indicator	Rank	Relevance	Automotive & Machine	Chemical & Pharmaceutical	FMCG	Packaging	Assessment Difficulty
Raw materials	CO2 (GHG) emissions during production	1	4.31	4.21	4.14	4.39	4.00	2.79
	Environmental certificates and labels	2	4.20	4.25	3.93	4.22	4.75	3.82
	Investments in sustainability projects & initiatives	3	4.07	3.89	3.90	4.18	4.25	3.49
	Water consumption during production	4	4.06	3.71	4.00	4.22	3.75	2.87
	Percentage of recyclable content	5	3.91	4.07	3.57	3.92	3.75	3.07
	Emissions of ozone-depleting substances	6	3.88	3.96	3.83	3.84	3.50	2.65
	Amount of waste generated during production	7	3.87	3.64	3.66	4.00	4.00	2.79
	Percentage of hazardous chemicals used in	8	3.83	3.89	3.41	3.96	3.75	2.87
	Percentage of (post-consumer) recycled content	9	3.73	3.68	3.31	3.90	4.00	2.84
	Impact on biodiversity	10	3.64	3.29	3.31	3.98	3.50	2.30
Packaging	Certification of material (e.g., FSC)	1	4.24	4.25	4.10	4.29	4.25	3.66
	Usage of reusable packaging	2	4.17	4.18	4.03	4.22	3.50	3.08
	Percentage of recyclable content	3	4.06	3.86	3.79	4.18	4.25	2.85
	Percentage of (post-consumer) recycled content	4	4.04	3.82	3.76	4.18	4.25	2.80
	Maximum fill rate of packaging unit	5	3.87	3.89	3.48	3.98	3.75	3.55
	Light weighting of packaging material	6	3.80	3.75	3.43	3.94	4.00	3.58
	Amount of waste generated during production	7	3.77	3.70	3.66	3.84	3.50	2.55
	Usage of mono-layer design	8	3.44	3.31	3.10	3.10	3.10	2.99
Operating resources & equipment	Energy efficiency of equipment	1	4.42	4.36	4.24	4.46	4.25	3.64
	Use of renewable energy sources	2	4.24	4.07	4.17	4.30	3.75	3.59
	Equipment lifetime	3	4.14	4.14	4.14	4.06	4.25	3.44
	Water efficiency of equipment	4	3.92	3.82	3.62	4.08	3.75	3.42
	Recyclability of oils, paints, etc.	5	3.84	3.75	3.79	3.80	4.25	3.10
	Reject rate of equipment	6	3.68	3.82	3.55	3.59	3.25	3.25
	Utilization of byproducts	7	3.65	3.71	3.38	3.65	3.75	2.89
Logistics & transportation	Transportation mode (Air, road, water or rail)	1	4.26	4.14	4.24	4.33	3.50	3.79
	Network optimization / Freight consolidation	2	4.25	4.29	4.24	4.24	3.75	3.11
	Transport-unit capacity utilization	3	4.16	4.14	3.97	4.22	3.75	3.33
	Distance travelled	4	3.95	4.14	3.83	3.98	3.25	3.63
	Reverse-logistics programs	5	3.77	3.93	3.48	3.84	3.25	2.93
	Share of hybrid and/or electric vehicles in fleet	6	3.49	3.50	3.28	3.59	3.50	3.07

The future belongs to holistic sourcing decisions

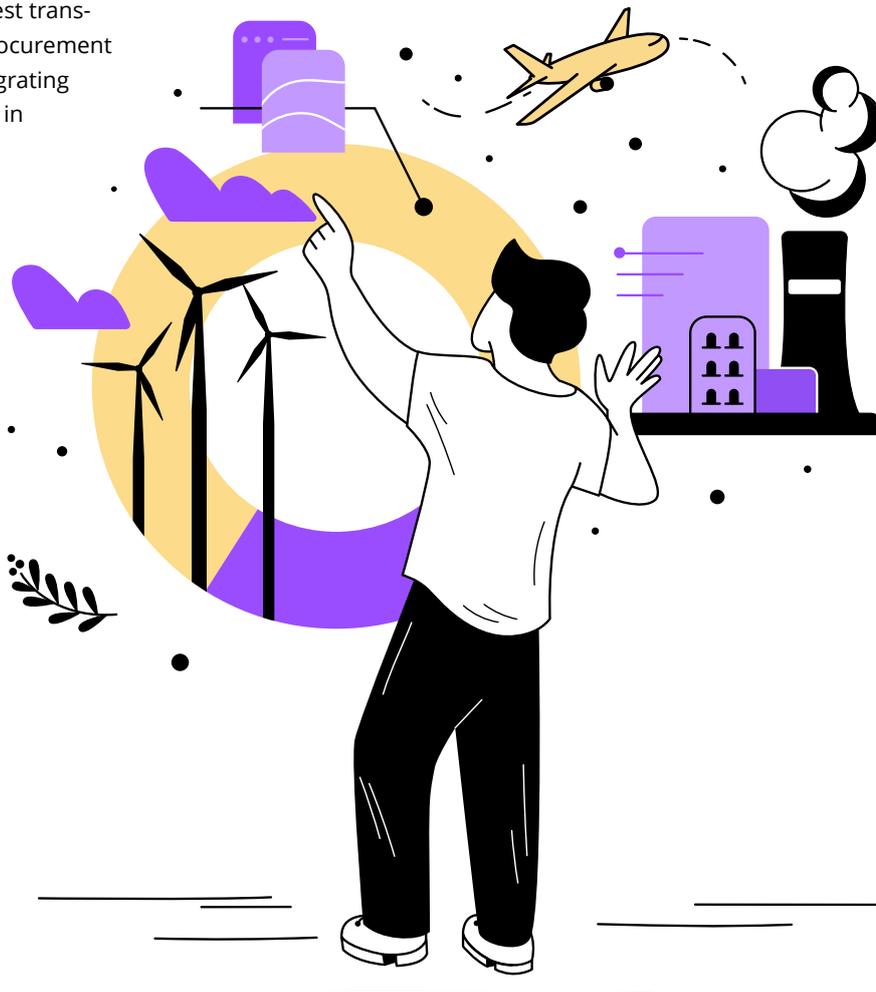
Today, the highest motivation to embed environmental considerations in strategic sourcing and supplier selection decisions is a direct correlation with competitive advantages like cost benefits and efficiency gains or high external stakeholder pressure.

To change this, defining general sustainability goals and criteria for Procurement is not sufficient. Instead, category-specific sustainability targets must be implemented in sourcing strategies to incentivize the desired behavior. So far, only companies with strong internal motivations for reducing their environmental footprint break organizational targets down to the category level and continuously track their progress.

As more data becomes available and metrics evolve though, regulators, investors and consumers will continue to request transparency and leave Procurement no alternative to integrating sustainability metrics in

their sourcing decisions. Few companies are applying them consistently today, due to missing standards, difficulties in measurement & reporting or the lack of supporting tools. However, modern Procurement technology allows organizations to integrate sustainability metrics alongside commercial, risk, diversity or performance scores in their decision making.

Especially advanced sourcing analytics & optimization tools empower holistic sourcing decisions and bring transparency to opportunity costs of competing alternatives. While more research is required to define specific indicators for additional spend categories, the sustainability metrics outlined in this paper offer actionable insights for driving sustainability in strategic sourcing and supplier selection processes.



Contact us

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Archlet's user-centric sourcing software empowers pioneering Procurement teams across industries, company sizes and digital maturity to make data driven and holistic sourcing decisions. Clients include PepsiCo, Emmi Group, Deutsche Bahn and more.



To learn **more about Archlet** and **how integrating sustainability metrics** contributes to more holistic sourcing decisions, visit www.archlet.io or write to contact@archlet.ch.

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