



Sustainability into Pre-Procurement and Procurement: CERN's Recent Journey

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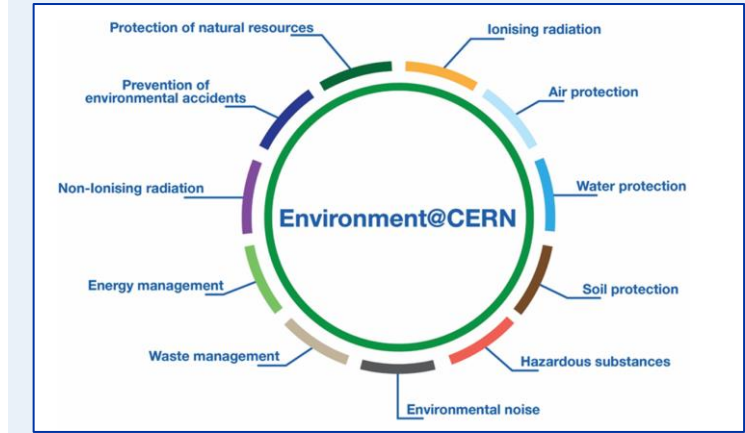
Sustainability in Europe

- United Nations - 2030 Agenda for Sustainable Development.
- « ... *Building a climate-neutral, green, fair and social Europe – Green Deal ...* »
- UN Sustainable Development Goals.
- EU Directives:
 - CSRD (Corporate Sustainability Reporting Directive) - Reporting
 - CS3D (Corporate Sust. Due Diligence Directive) - Supply Chain Due Diligence
- EU Framework : ESPR (Ecodesign for Sustainable Products Regulation).
- 2030 Agendas in EU in favor of Sustainable Development.

« ... *to reconcile the economy with the way we consume our planet ...* »



Sustainability at CERN



Education is one of CERN's core missions



Diversity is a core value for CERN



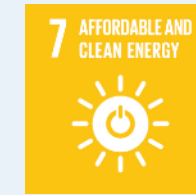
CERN is a model for collaboration



Technologies for health care



CERN Knowledge Transfer



CERN Energy management



CERN Environment Protection



Beam Line for Schools Competition



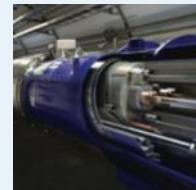
25BY'25 Diversity and Inclusion Initiative



Synchrotron Light Source (SESAME) in Jordan



Cancer therapy



Magnet in the LHC Tunnel



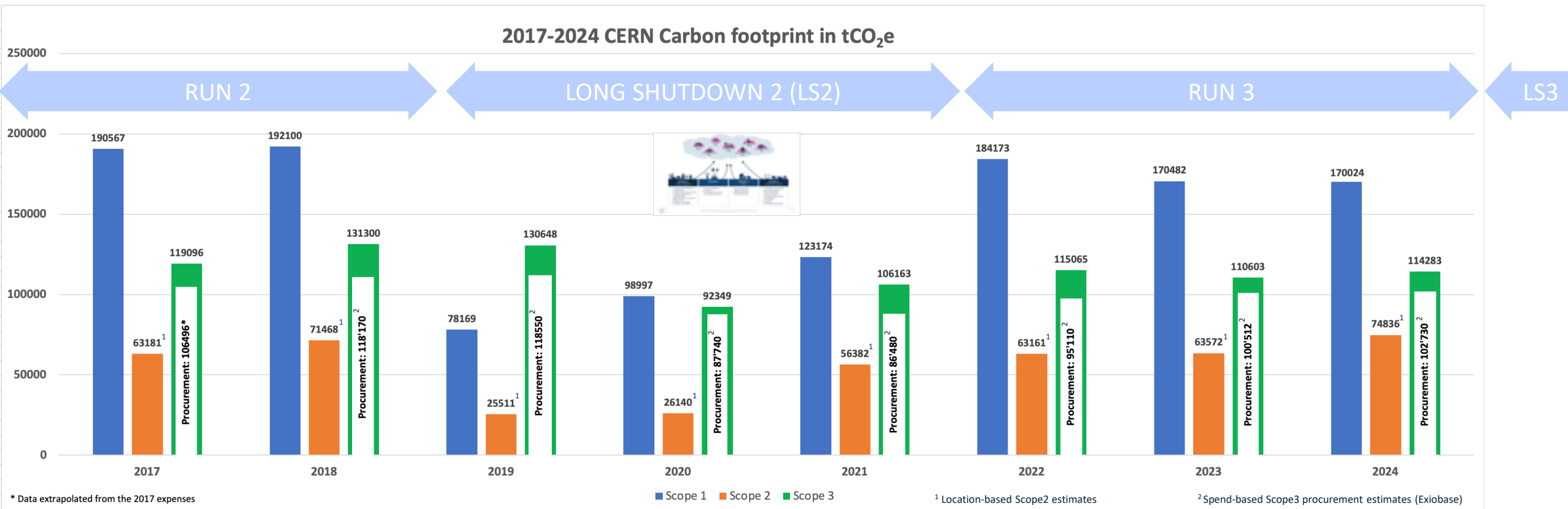
Heating local housing





Environment Report 2023 - 2024


Reports (GRI Standard)

CERN Procurement impact on Emissions, Compliance, and Risk Management




 40% of CERN's annual funding is spent with its suppliers.

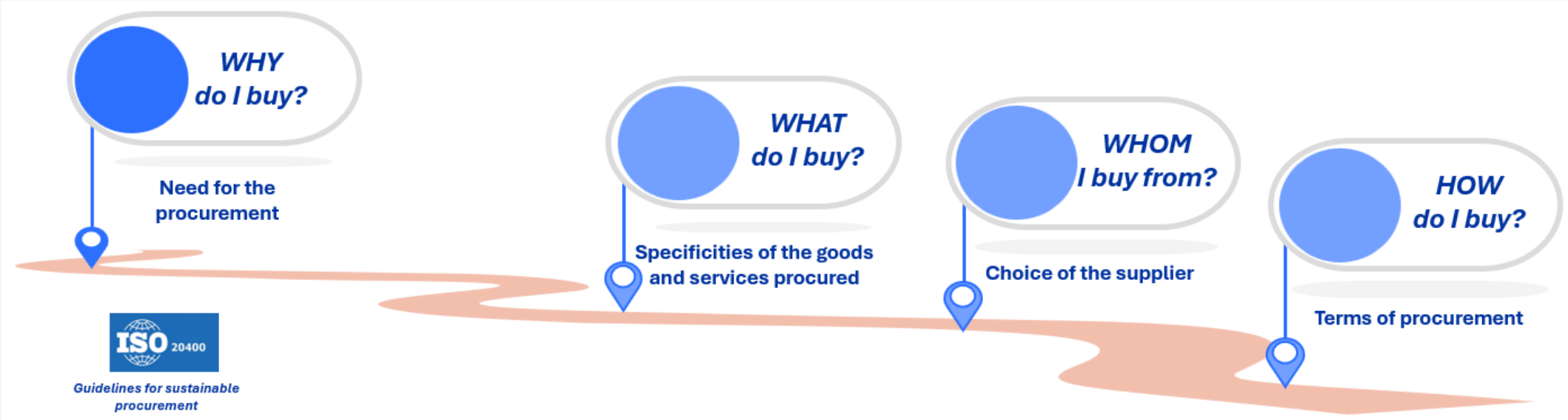
 > 90% of CERN's indirect (Scope 3) emissions resulted from purchases of goods & services.

 35% (RUN) up to 50% (LS) of CERN's annual carbon footprint is driven by procurement.

- 
- Increasing Rules/Regulations on Sustainability.
 - Alignment with CERN sustainability goals.
 - CERN decision to report (GRI standards)

- 
- Mitigate risks of environmental impacts.
 - Partnership with strategic suppliers to prevent/mitigate supply chain risks.
 - Enhance responsibility across the supply chain.

Embedding Sustainability into Pre-Procurement and Procurement Process



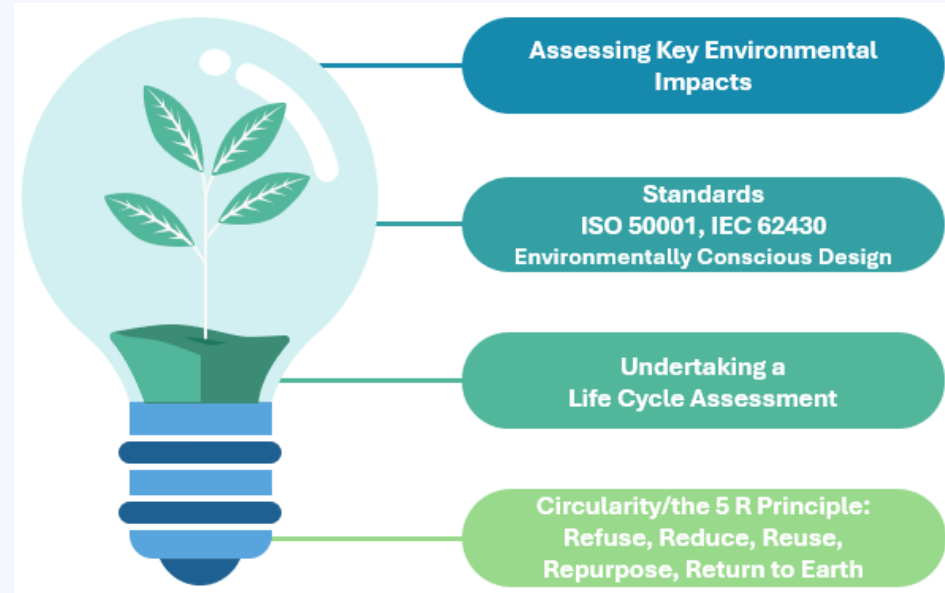
Pre-Procurement phase

Procurement Process

↑
Most impactful time to embed sustainability

↑
Set mandatory/desirable sustainability criteria (risk mitigation)

- **Assessments (Need & Lifecycle)**
Challenge, Perform!
Start with environment!



- **Guidelines**
Check best practices!

Decarbonization Opportunity – Lifecycle Carbon Assessment
CERN should include requirements related to LCA for Designers in Market Surveys and then, if it does not limit competition, tenders

Decarbonization Opportunity – UPS System Demand Management
CERN should support a study to remove redundant Uninterruptible Power Supply (UPS) systems to reduce both environmental impacts and fire risk

Carbon Cycle in the Built Environment

Opportunity: Lifecycle Carbon Assessment

Spend Area: Civil Engineering

Source: LCA Practice Guide

Decarbonization Opportunity – UPS System Demand Management

Opportunity: UPS Demand Management

Spend Area: Industrial Controllers (UPS)

Description:

- Uninterruptible Power Supply (UPS) systems keep electronic systems safe and operational during power surges and failures. A UPS provides battery backup power when the flow of electricity drops or stops.
- Technical Officer Vincent Curran reports that there are 310 UPS systems on the CERN site. These are Monobank UPS systems and have lead-acid batteries that have to be replaced every 5 years.
- Vincent believes that some of these UPS systems should be removed as they are not necessary from a technical perspective and is working on a policy to reduce the number of UPS systems.

Potential:

- Lead-acid batteries have an approximate environmental impact per kWh energy delivered of 2 kgCO₂e. Depending on the number of UPS systems it is possible to remove this policy could have a significant impact.
- There will also be a commercial benefit if batteries do not need to be replaced every 5 years.
- Lastly, UPS systems pose a fire risk so from a technical perspective Vincent believes that removing unnecessary UPS systems will reduce this safety risk.

Next Steps:

- Support Vincent to carry out the study and create a policy to remove unnecessary UPS systems.

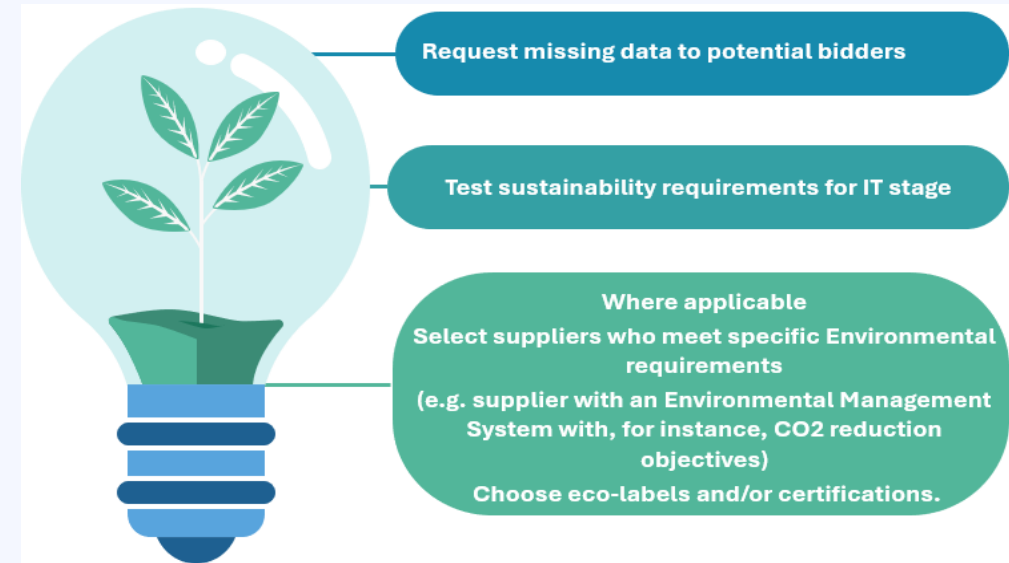


- **Investigate**

- *Collect information, analyse supplier sustainability maturity.*
- *Evaluate suppliers based on their sustainability performance.*

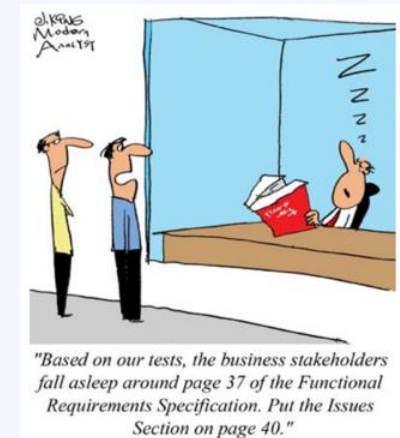
- **Communicate**

- *Communicate Corporate Sustainability mission and goals.*
- *Engage supplier to discuss Sustainability expectations and capabilities.*



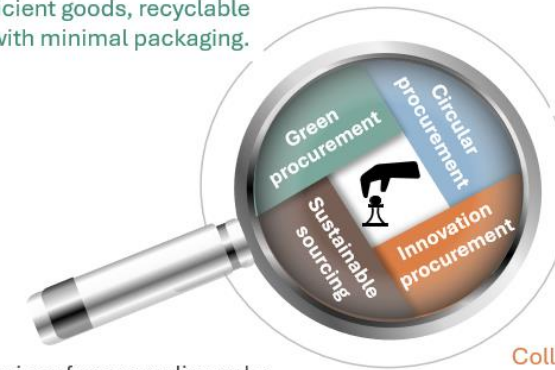
- **Influence specs**

- *Include mandatory or desirable sustainability requirements.*
- *Include measurable sustainability requirements.*
Example: Supplier shall take back all packaging, delivery outside peak hours, delivery in bulk quantities...



- **Set Sustainability Strategy**
Set Targets!

Purchasing products that have a reduced environmental impact throughout their lifecycle such as energy-efficient goods, recyclable materials, or products with minimal packaging.



Selecting suppliers who offer products/services designed for reuse, refurbishment, or recycling thus emphasizing the entire lifecycle of the product and its potential for reuse.

Procuring goods/services from suppliers who demonstrate environmental responsible practices such as reducing carbon emissions, etc.

Collaborating with strategic suppliers on innovative solutions such as new technologies, materials, or processes that meet CERN's environmental objectives.

- **Total Cost of Ownership**
Consider!

Example: For energy at CERN, all costs such as maintenance, repairs, and disposal are taken into consideration in the adjudication price (ISO 50001 certification).



• Evaluation of Suppliers and adjudication

- **Lowest Compliant (LC):** Environmental aspects are evaluated separately.
- **Best Value for Money (BVFM):** Bidders' proposal assessed, scored, and weighted as part of the quality criteria.

**Lowest
Compliant**

→ Yes/No assessment and lowest compliant bidder wins.

**Best Value
For Money**

→ Quality Score+Price Score, Weighting.

• Contract Management

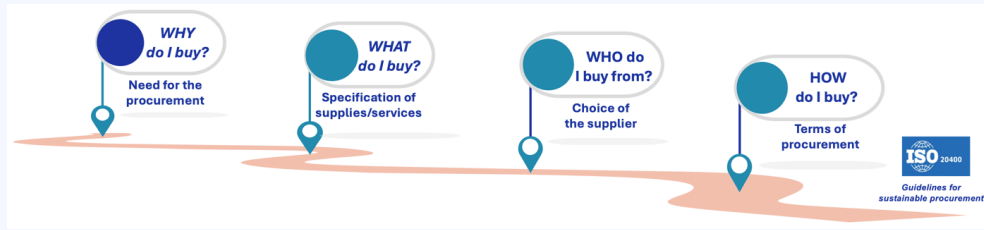
- **Monitor the supplier's adherence to sustainability clauses of the contract.**
- **Collaborate with suppliers for continuous improvement/new opportunities (e.g. innovation).**

Set KPIs and/or SLAs that can be used to measure sustainability performance over the contract

CERN journey from Environmentally Responsible Procurement to Sustainable Procurement

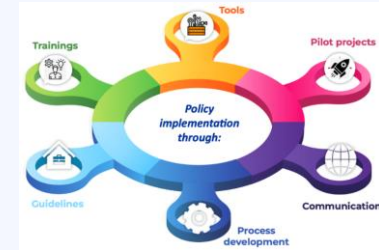
Jan 2024
Policy approval

CERN Environmentally Responsible Procurement (CERP) Policy



2024 - 2025
Kick off phase

CERP Policy implementation



Dec 2025
CERP Review



Gap Analysis

ISO 20400 alignment

Expert benchmarks

Best practitioners' insights



Implementation Clusters



Lessons learnt
Feedback
Proposals
Objectives Setting

2026 - 2030
Deploy & Scale

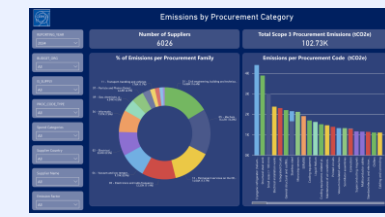


The CERP Policy Project becomes the CERN Sustainable Procurement (CSP) Project!

Deployment and scaling supported by KPIs (draft), roadmaps (draft), a supplier sustainability due diligence tool, and dashboards.

Proposed CSP KPIs	Policy Implementation Areas
1 # of Departments/Groups with an approved Sustainable Procurement action plan (in compliance ESG)	Governance endorsement
2 tCO ₂ e/CHF (minimal and constant prices) for the CERN top 8 procurement families by Scope 3 emissions	CERN Scope 3 Procurement decarbonisation performance
3 % of procurement Scope 3 emissions covered by suppliers with SBTi-approved (or equivalent) targets	Supplier Scope 3 Procurement decarbonisation performance
4 # of high-impact procurement families (or contracts) with a completed ESG risk assessment and supplier screening	Deployment of ESG Risk Management
5 % of high-impact tenders/contracts with ESG requirements embedded and traceable (internally + externally)	Sustainable Procurement Integration in tenders/specifications

	Roadmap wrt Vision & Strategy		
	Short-Term (2026)	Medium-Term (By 2028)	Long-Term (By 2030)
Leadership Commitment	• Publish 2 Sustainable Procurement Implementation Framework with Milestones, KPIs for procurement rates and alignment with the Strategic management	• Launch wider leadership actions (e.g. Sustainability Awards, ESG training in regions, external stakeholders)	• Full implementation of CERN Sustainability Policy
Vision & Targets	• Develop strategic climate targets for top 8 procurement families	• Develop climate Scope 3 targets	• High sustainable procurement targets across suppliers including also sub-Tier
Strategic Planning	• Choose an ESG Risk analysis Framework for top 8 procurement families	• Assess physical, transitional climate risks and mitigation actions for the other procurement families	• Integrate climate risk assessment and mitigation actions into CERN's scientific planning including knowledge technologies (e.g. open data, smart analytics)
Supplier Procurement	• Approved and results whenever possible, use suppliers to achieve GHG targets and CO ₂ reduction targets	• Require top 30% suppliers (by procurement) to disclose GHG footprints and reduction targets	• Shift CERN procurement to suppliers with verified net-zero pathways whenever possible

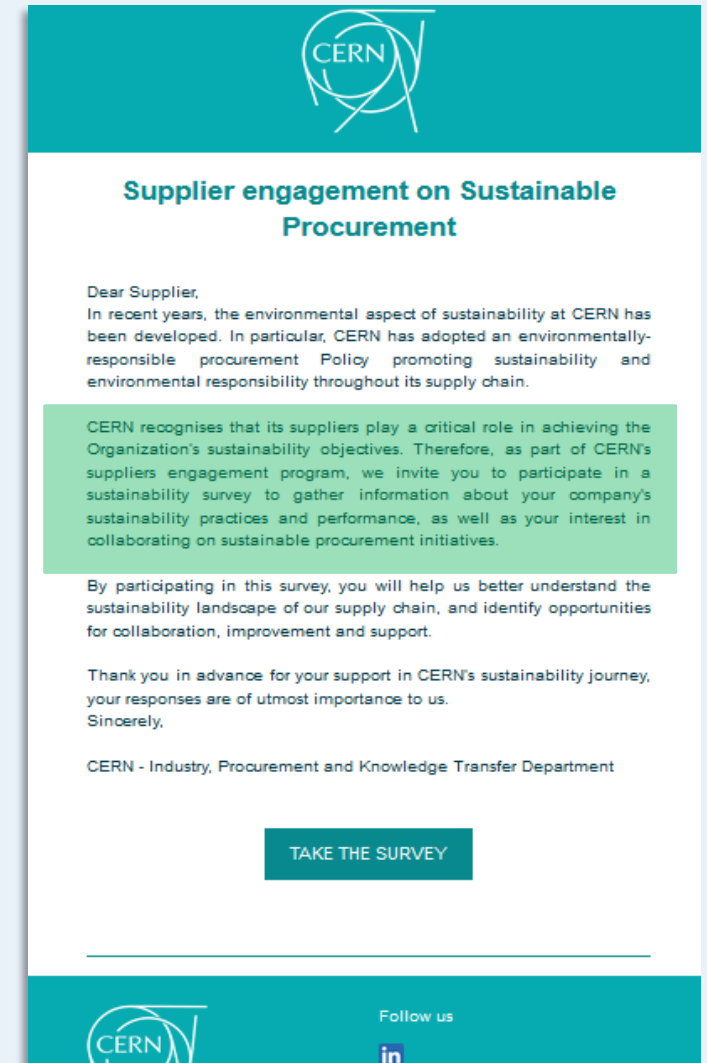


CERN Supplier Engagement - Survey

Scope and data collected













WHY	Identify maturity of suppliers on sustainability level Identify to what degree suppliers are willing to collaborate
WHO	Sent to +300 suppliers from all procurement code families
WHAT	Questionnaire with targeted sustainability questions
HOW	Weekly automated emailing through SpotlerMail+

Response Rate
87 out of 267 suppliers among 9 procurement code families = **32.5%**

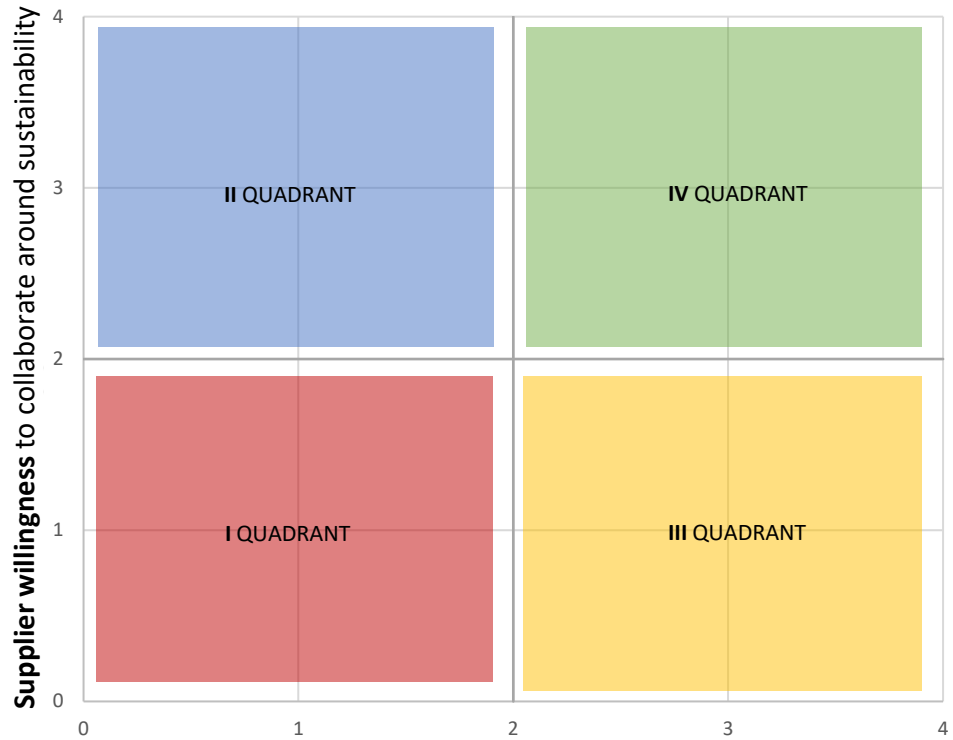


CERN Supplier Engagement - Methodology

Questions were asked to **suppliers** to **assess** and **score** their level of:

Sustainability Maturity		Weight on score	Engagement Willingness		Weight on score
	Does your company currently have a sustainability/environmental policy or program in place ?	10%		Would you be interested in collaborating with CERN to calculate these emissions?	50%
	Does your company hold any certifications related to environmental or sustainability practices?	10%			
	Does your company have initiatives in place to encourage sustainability/environmental practices across its supply chain ?	15%		Would your company be open to setting targets for reducing the carbon footprint of its supplies or services provided to CERN?	20%
	Does your company measure its carbon footprint ?	20%			
	Does your company publish a report on its carbon footprint ?	15%			
	Is your firm able to provide data on CO2 emissions specifically related to services or products provided to CERN contracts?	10%		Length of relationship with CERN in years	15%
	Has your company defined specific sustainability/environmental goals for the next 5 years ?	20%		Yearly average contract amount in the last 3 years	15%

CERN Supplier Engagement - Action Plan



Maturity of the suppliers' strategy towards sustainability

- Matrix key**
- I Supplier **not mature, nor willing** to engage
 - II Supplier **not mature, but willing** to engage
 - III Supplier **mature, but not willing** to engage
 - IV Supplier **mature and willing** to engage



Notes	Actions
<p>Supplier sustainability category: Quadrant IV - mature and willing - BUSINESS CASE MATERIAL</p> <ul style="list-style-type: none"> Not able to provide CO2e activity-based data. At another level. Carbon neutral business for Scope 1, 2 and element of Scope 3 → report on their CO2 emissions publicly. Offsetting. Extremely strong compliance and due diligence processes on both the environmental and social impact. They audit, they go on site and are very selective about their mills across the globes. Great knowledge and awareness on sustainability governance, policies and stakeholders' expectations and related risks 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> CO2e emissions/contract requested <input type="checkbox"/> Send invitation to the Supplier Workshop. <input type="checkbox"/> Send Data Request through Responsibly to update info
<p>Supplier sustainability category: Quadrant II - not mature, but willing</p> <ul style="list-style-type: none"> 3 persons company. Comply to many sustainability Norwegian regulations, especially on metal waste and energy. Renewable energy supplied company (hydropower) Not able to provide CO2e activity-based data. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> CO2e emissions/contract requested <input type="checkbox"/> Send invitation to the Supplier Workshop. <input checked="" type="checkbox"/> Send training material and CO2e calculator. <input checked="" type="checkbox"/> 2024 CO2e received on 📅 15 Aug 2025 - link



To develop **ad hoc engagement action plans** for suppliers per quadrant.

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Key takeaways

01

Why an Environmentally Responsible Procurement Policy?

- ✓ **Procurement impact:** 35% (RUN) up to 50% (LS) of CERN's annual carbon footprint is driven by procurement.
- ✓ **Prevent/mitigate** supply chain risks.
- ✓ **Stakeholder expectations:** CERN wants to align with internal sustainability objectives and global best practices (e.g. ISO 20400, GRI, SDG reporting).

02

Embedding Sustainability

- ✓ **Ideally** at the need definition and design phases.
- ✓ **Set mandatory/desirable sustainability criteria** throughout the procurement process.
- ✓ **Engage suppliers on sustainability** to learn/spread value in the Supply Chain.

03

Supplier Engagement - Who's ready and who needs help?

- ✓ **Tailor** engagement per quadrant.
- ✓ **Use** surveys, audits, training, and pilot collaboration.



04

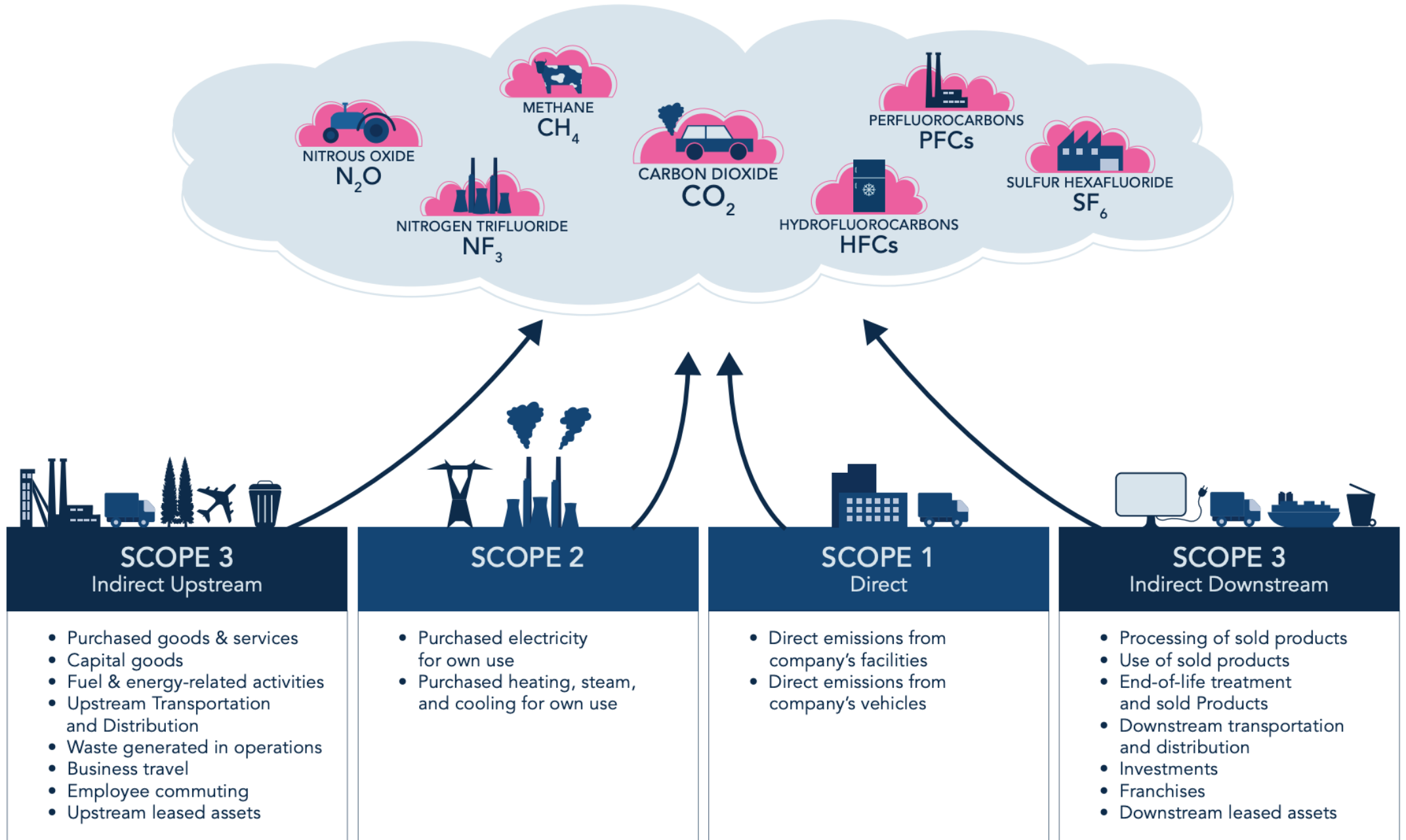
The CERP Policy Project becomes the CERN Sustainable Procurement (CSP) Project.

- ✓ **Deployment and scaling** in all Departments.
- ✓ **Setting targets and KPIs** supported by **dashboards**.
- ✓ **Launch** new supplier engagement rounds.



Thank you!

Questions?

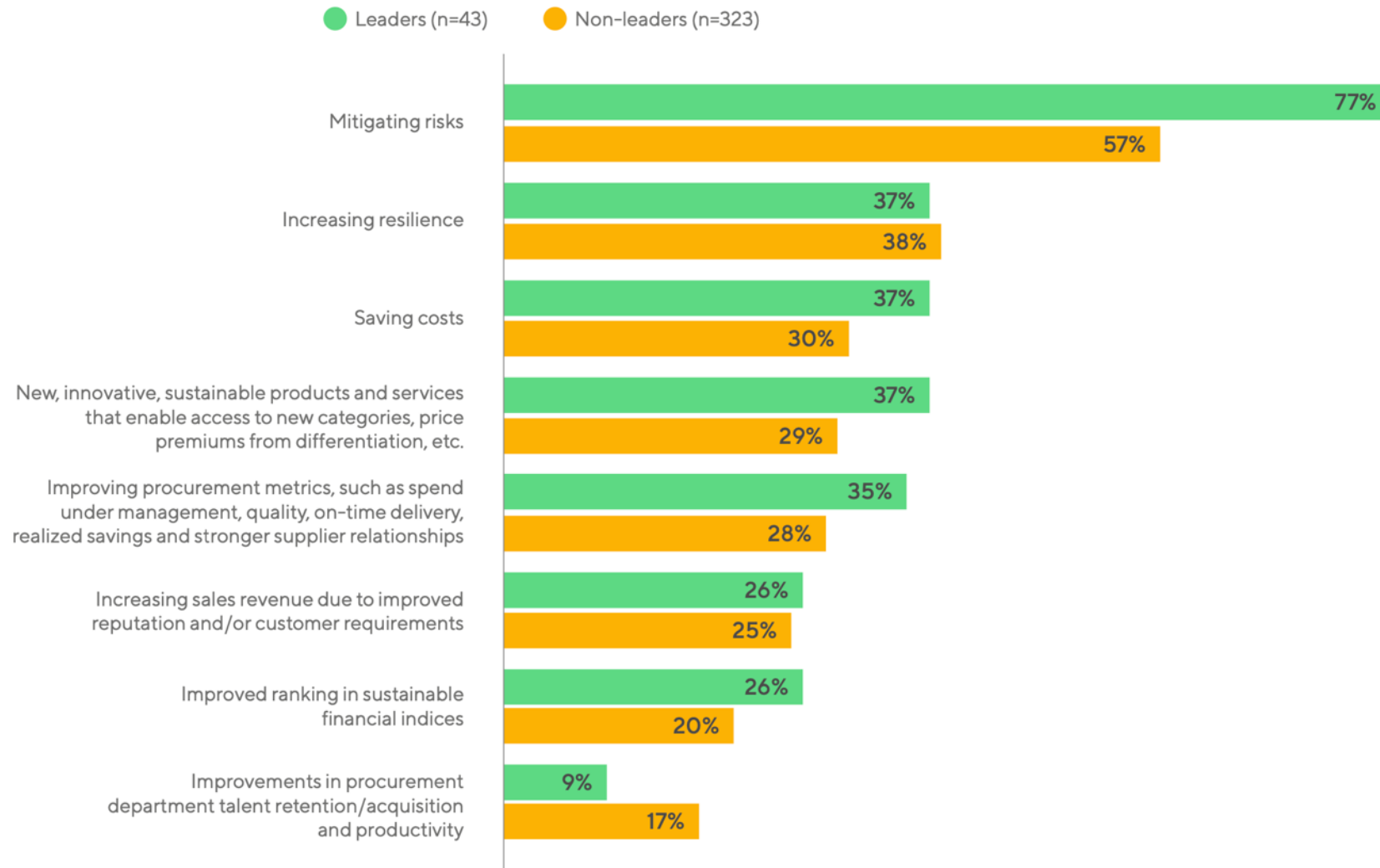


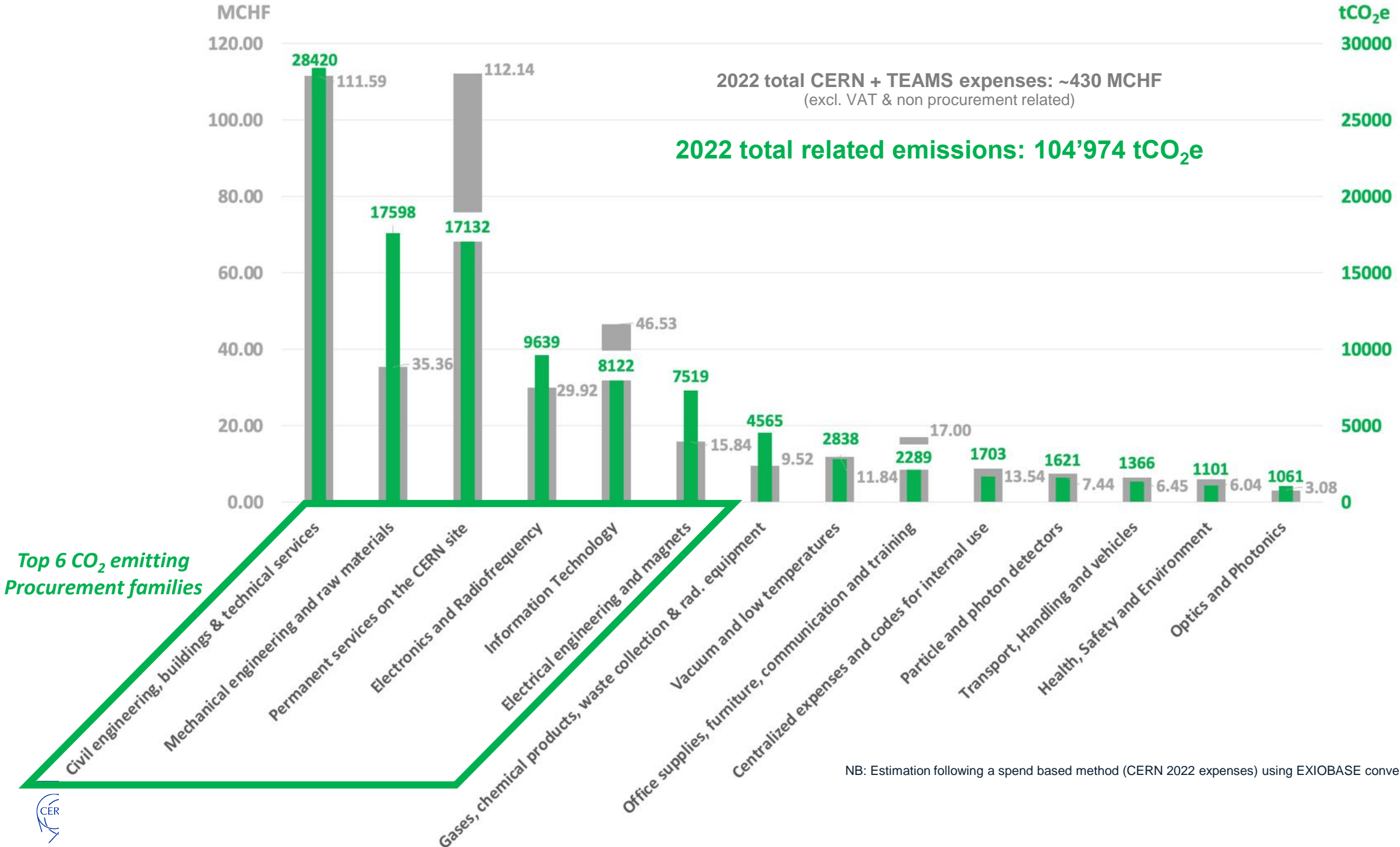
Graphic by Embedding Project (Adapted from GHG Protocol)

Benefits of Sustainable Procurement

“Sustainable Procurement Barometer 2024,” EcoVadis and Accenture, February 2024. Based on data collected from nearly 600 buyers and more than 1,000 suppliers, worldwide.

What benefits has your organization derived from its sustainable procurement program? (n=366)





NB: Estimation following a spend based method (CERN 2022 expenses) using EXIOBASE conversion factors.

Location-based vs. Market-based Scope 2 estimation

These are two different methods of calculating carbon emissions associated with electricity consumption.

Location-based Scope 2 estimates are based on the average emissions intensity of the electricity grid in a particular location.

- It considers the emissions from all electricity sources in that location, regardless of the contractual agreements or specific electricity purchases made by the consumer.
- This method assumes that consumers are using the average mix of electricity sources in their region.
- Location-based estimates may not accurately reflect the emissions impact of consumers who have made efforts to support renewable energy.

Market-based Scope 2 estimates consider the specific contractual agreements and electricity purchases made by the consumer.

- It considers the emissions associated with specific renewable energy certificates (RECs) or power purchase agreements (PPAs) that the consumer has invested in.
- This method allows consumers to track the emissions associated with their own electricity choices and helps support the development of renewable energy projects.
- Market-based estimates are more conservative because they provide a more accurate reflection of the emissions impact of individual consumers.

In summary:

- **Location-based estimates provide a general overview of the emissions intensity of the electricity grid in a specific location, while market-based estimates reflect the specific choices and investments of the consumer.**
- **Market-based estimates can give consumers more accurate information about their own emissions impact and allow them to support renewable energy projects directly.**