

LIVE WEBINAR

CHEMICAL LEASING:

■ SUSTAINABILITY CRITERIA



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The Sustainability Criteria and their Indicators

It is in the interest of all involved partners that a performance-based business model, such as Chemical Leasing, follows high quality standards. Therefore, the following internationally agreed sustainability criteria shall be fulfilled:



1. **Reduction of adverse impacts** for environment, health, energy and **resource consumption** caused by chemicals and their application and production processes
2. **No substitution of chemicals by substances with a higher risk**
3. **Improved handling and storage** of chemicals to prevent and minimize risks
4. **Economic and social benefits** are generated; a contract should contain the objective of continuous improvements and should enable a fair and transparent sharing of the benefits between the partners
5. **Monitoring of the improvements** needs to be possible

<http://chemicalleasing.org/concept/sustainability-criteria>

The Sustainability Criteria and their Indicators

Concrete Project Content

- Sub-criteria and indicators for each Sustainability Criterion.
- Indicator checklist to screen a Chemical Leasing project.
- The SMART 5 tool.

SMART5

- Facilitate the implementation of Chemical Leasing in companies.
- Support the companies in their data collection efforts.
- Measure and quantify the benefits.
- Verify if the sustainability criteria are met.

The Sustainability Criteria and their Indicators

Sub-criteria and Indicators

Example with the First Criteria

**Reduction of
adverse
impacts
& of resource
consumption**

Emissions of pollutants into the air
Emissions of pollutants into wastewater
Waste (total and hazardous waste)
Power supply in the application
Energy supply (indirect) in the supply chain
Greenhouse gas emissions in the application
Resource requirements in the application

Nitrogen Oxides
Ammonia
Sulphur dioxide
Non-methane volatile organic compounds
Particulate matter
POPs (persistent organic pollutants)
Heavy metal
Other emissions into the air
Chemical oxygen demand
Biological oxygen demand
Absorbable organic halogen compounds
Nitrogen compounds
Phosphorus compounds
Other emissions in waste water
...

Criteria

Sub-criteria

Indicators

The Sustainability Criteria and their Indicators

Indicator Checklist

Sustainability Criteria	Sub-criteria	Indicator for Chemical Leasing	Screening	Comment
1 Reduction of adverse impacts for environment, health, energy and resource consumption caused by chemicals and their application and production processes	Pollutants emitted into the air	Nitrogen oxides (NO _x)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Ammonia (NH ₃)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Sulphur dioxide (SO ₂)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Non-methane volatile organic compounds (NMVOC)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Particulate matter (PM2.5/PM10)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		POPs (persistent organic pollutants)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Heavy metals	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Other emissions into the air	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
1 Reduction of adverse impacts for environment, health, energy and resource consumption caused by chemicals and their application and production processes	Pollutants emitted into the air	Nitrogen oxides (NO _x)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Ammonia (NH ₃)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Sulphur dioxide (SO ₂)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Non-methane volatile organic compounds (NMVOC, e.g. benzene)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Particulate matter (PM2.5/PM10)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		POPs (persistent organic pollutants)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? Does not apply
		Heavy metals (e.g. mercury)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? Does not apply
		Other emissions into the air	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
1 Reduction of adverse impacts for environment, health, energy and resource consumption caused by chemicals and their application and production processes	Pollutants emitted in waste water	COD (chemical oxygen demand)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		BOD (biological oxygen demand)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		AOX (adsorbable organic halogen compounds)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		POPs (persistent organic pollutants)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? Does not apply
		Heavy metals (e.g. mercury)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? Does not apply
		Nitrogen compounds	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Phosphorus compounds	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
	Other emissions in waste water	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply	
	Volume of waste and waste water (total and hazardous waste)	Waste volume (e.g. in metric tonnes)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Waste water (e.g. in m ³)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	
Tonnes or % of hazardous waste		<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply	

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
1 Reduction of adverse impacts for environment, health, energy and resource consumption caused by chemicals and their application and production processes	Energy demand during the application	kWh or MJ (separately for electric and thermal energy demand)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
	Energy demand (indirect) in the supply chain	kWh or MJ	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
	Greenhouse gas emissions during the application	Amount of CO ₂ equivalents	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
	Resource demand during the application	Amount of chemicals	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? • Modified starches • PVA- polyvinyl alcohol • Acrylates • Fatty acids
		Amount of water	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Amount of other resources in the supply chain in kg, m ³ , l (e.g. recycling)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Which one(s)? Does not apply

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
2 No substitution of chemicals by substances with a higher risk	Substitution of the chemical	Did a substitution of one or more chemicals take place (different substance or improved quality)?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	<i>If no: Continue with criterion 3</i> BIOSIZE MP-LV BIOSIZE MP-MV
	Material characteristics of substitutes	Safety Data Sheet (SDS) of the substitute	<input checked="" type="checkbox"/> available <input type="checkbox"/> not available	
		Hazards for environment and health (e.g. CMR ¹ substances, irritant, bio-accumulative)	<input type="checkbox"/> decreased <input checked="" type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Other hazards (e.g. flammability)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
	Overall risk	Altered risks due to the substitution (overall assessment and reasons)	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
3. Improved handling and storage of chemicals to prevent and minimise risks	Available information base	Safety Data Sheets (SDS) for hazardous substances according to GHS	<input checked="" type="checkbox"/> available <input type="checkbox"/> not available	
		Is the information actively used (e.g. is it read by workers or is there a notice at the production site or are trainings performed)?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> partly <input type="checkbox"/> no	
	Number and extend of work accidents	Number of work accidents per year	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply
		Severity of the work accidents	<input type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	Does not apply

Sustainability criteria	Sub-criteria	Indicators for Chemical Leasing	Screening	Comment or specification
3. Improved handling and storage of chemicals to prevent and minimise risks	Exposure of workers	Type of exposure (per hazardous substance, if applicable)	<input type="checkbox"/> dermal <input checked="" type="checkbox"/> inhalative <input type="checkbox"/> oral	
		Level of exposure, e.g. concentration of pollutants in the air in mg/m ³ (separately per hazardous substance)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Duration of exposure in min/day (separately per hazardous substance)	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
		Description of the measures that caused a change in the direct contact or exposure of workers to the applied chemical (e.g. personal protective equipment, air extraction are in place and in use)	It decreases the product so there is less quantity and exposure time of workers	

<p>4 Economic and social benefits are generated; a contract should contain the objective of continuous improvements and should enable a fair and transparent sharing of the benefits between the partners</p>	Costs for the user	e.g. €/year If possible distinguish between costs for chemicals, maintenance, energy demand, complaints, etc.	<input checked="" type="checkbox"/> decreased <input type="checkbox"/> equal <input type="checkbox"/> increased	
	Economic performance of the supplier	e.g. €/year	<input type="checkbox"/> improved <input checked="" type="checkbox"/> equal <input type="checkbox"/> decreased	
		Description of the changes in business relations with customers (e.g. sole supplier, long-term planning security)	Long-term relationship with the provider, possibility of new sustainable developments in companies	
	Business opportunities	New customers or sales opportunities?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
		New fulfilment of requirements for labels, certificates, etc.?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
		New business developments or innovations?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
	Qualification of employees	Hours for training and education per employee per year (possibly including the topic) or description of changes in personnel structure and/or costs	<input type="checkbox"/> more training/ qualification <input checked="" type="checkbox"/> equal	
	Creation of new jobs	Number of jobs that are related to the application at the user side	<input type="checkbox"/> more <input checked="" type="checkbox"/> equal <input type="checkbox"/> less	
		Number of jobs that are related to the application at the supplier side	<input type="checkbox"/> more <input checked="" type="checkbox"/> equal <input type="checkbox"/> less	

5 Monitoring of the improvements needs to be possible	Measurement of the indicators for the criteria 1-4	Are the relevant parameters monitored?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> partly <input type="checkbox"/> no	
		Is an improved monitoring process established?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> partly <input type="checkbox"/> no	

Thank you!

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