

VTTs Double Materiality Assessment

VTT's latest double materiality analysis was approved in 2025. It examined the materiality of sustainability topics for VTT through the impacts it causes, as well as the risks and opportunities it faces. The results of the double materiality analysis guide our sustainability work and strategic choices and create a basis for our sustainability reporting.

In the double materiality analysis, potential and actual impacts on people and the environment were identified and assessed through our due diligence process. The analysis examined VTT's potential and actual impacts in terms of its own operations and business relationships in different functions



and value chains. In addition, the impacts that VTT can influence through its own actions and decisions were specified, as well as impacts that can be linked to VTT on the basis of its business relationships and reputation. Financial materiality was examined through risks and opportunities arising from sustainability themes.

Methodology

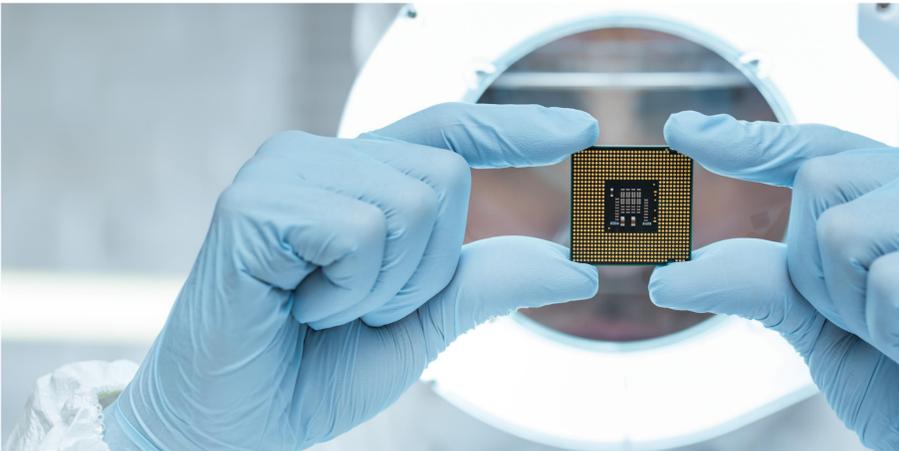
VTT's double materiality assessment was carried out qualitatively by collecting views from internal and external stakeholders through questionnaires and by interviewing VTT's management and owners. VTT's sustainability team analysed the results by scoring the identified impacts, risks and opportunities based on the collected data, and finally by determining the materiality thresholds.

Before the results were approved, they were validated through internal expert interviews. The double materiality analysis was carried out in accordance with the European Sustainability Reporting Standards (ESRS) framework. The topics discussed in the analysis were based on the ESRS standards and their subtopics, as well as the results of VTT's first double materiality assessment.

Climate change
Biodiversity and ecosystems
Resource use and circular economy
Own workforce
Workers in the value chain
Customer's responsibility
Societal resilience
Research ethics
Governance
Data security

Overview of the process

1. Stakeholder engagement and data collection
2. Defining impacts, risks and opportunities
3. Scoring impacts, risks and opportunities based on stakeholder assessments
4. Validation rounds with experts
5. Validation round with the executive leadership team
6. Board of Directors' approval of the results



Stakeholder engagement and sources of information

The double materiality assessment maps the views of different stakeholders in order to achieve a balanced analysis. In VTT's double materiality assessment, the executive leadership team and a few board members were interviewed, and the views of the company's own personnel were collected with questionnaires.

With regard to external stakeholders, representatives of the owner were interviewed, and a survey was sent to selected customers, suppliers of goods or services, members of the scientific community and funders. In addition, interview data from VTT's previous round of double materiality analysis were utilized to deepen the perspectives obtained from external stakeholders. External experts were not used in VTT's double materiality assessment, since as a research centre, VTT has extensive and diverse internal expertise on various sustainability topics.

VTT's own experts and management, as well as external and internal stakeholders, were used as sources of information in the double materiality analysis. In addition to the data collected from them, the analysis was supported by, among other things, the results of VTT's annual personnel survey, carbon footprint calculations, the results of the trust and reputation survey, and a biodiversity footprint analysis.

The analysis of the actual and potential impacts in the value chain, especially in supply chains, was largely based on estimates, as quantitative data was not yet available.



Assessing VTTs impacts

In the interviews and questionnaires, it was assessed for each topic how negative sustainability impacts could arise in VTT's operations or its value chain. On the other hand, it was analysed what kind of positive impacts VTT has or could have on sustainability topics.

For example, VTT's day-to-day operations took into account the need to continuously develop occupational safety practices and support for mental well-being, while the potential adverse effects related to human rights focused on VTT's global subcontracting chains. Negative impacts on occupational safety were identified as particularly affecting those engaged in experimental research and other laboratory work. The human rights impacts were assessed using the Business and Human Rights course of the UN Global Compact conducted by VTT's experts, which identified potential risks and impacts.

Office work and research do not involve major environmental risks, but VTT's operations cause greenhouse gas emissions, which have an impact on climate change mitigation and biodiversity. However, VTT's emissions have been estimated to be relatively low, and the most significant contribution in mitigating climate change is the impact of our research. Positive impacts were identified especially through the effectiveness of research and customer work, but also through the impact of the company's own personnel.



Both negative and positive impacts were prioritised by assessing their scale, extent, likelihood and possible irremediability of the negative impacts. When identifying the impacts, it was also determined whether they were actual or possible, and they were assessed at different time intervals. Numerical scales were drawn up for these attributes, which the interviewees were asked to use in the assessment;

The time scale was measured with a time span of 1. Short (1 year), 2. Medium (2–5 years) and 3. Long (more than 5 years).



- The scale of the impact was chosen to be measured as follows: 0. No impact 1. Some (change) in the impact and 2. Significant (change) in impact
- The scope was selected to be measured on the following scale: 0. No impact 1. Somewhat widespread impact 2. Extensive impact.
- The irreparable nature was selected to be measured on the following scale: 0. Easily repairable 1. Possible (requires effort) to repair 2. Impossible/almost impossible (significant time interval) to repair.
- The likelihood was selected to be measured on the following scale describing VTT's existing risk management framework: 0. Unlikely = has not happened at VTT, 1. Possible = has happened to us before and 2. Probable = has happened to us several times or several close accidents.

Finally, numerical materiality thresholds were defined and based on them both negative and positive impacts were prioritised. After the analysis, the scoring and the materiality of the impacts were also assessed with internal experts to ensure a balanced outcome.

Assessing risks and opportunities

Financial materiality, i.e. risks and opportunities stemming from sustainability-related topics, was assessed qualitatively through magnitude and likelihood. The magnitude of the risks and opportunities was determined on a scale based on the expected impact on VTT's cash flow.

The operating income for 2023 was used as a basis as follows:

- 0. (>EUR 1.5 million): Non-material: <0.5%,
- 1. Material: 0.5% (>EUR 1.5 million) $\leq x \leq 1\%$ (EUR 1.5-2 million) and
- 2. Highly material: >1%. (EUR 3 million or more).

The likelihood was assessed in the same way as for the impacts, based on VTT's general risk assessment process. Sustainability-related risks are assessed and prioritised in the same way as all other risks at VTT.

Risks were identified especially related to occupational and cyber safety, the availability of labour, research ethics and the due diligence process. Opportunities related to environmental topics were identified from the perspective of the impact of our research, as well as for our own personnel, for example, in terms of competence development. The relationship between impacts, risks and opportunities was also assessed in the process – for example, our positive environmental impacts are directly linked to the economic opportunities arising from them.

Developing the process of Double Materiality Assessment

VTT carried out its first materiality analysis as part of the definition of sustainability priorities in 2020. The first double materiality assessment was carried out in 2022, and its results were approved in 2023. At that time, the analysis was supported by draft versions of the ESRS, and the analysis focused on identifying broad outlines in terms of sustainability priorities and involving stakeholders extensively in the workshops.

The update carried out in 2024–2025 utilised the results of the previous double materiality analysis and partly the data collected in it. The update focused in particular on refining the definitions and scoring of impacts, risks and opportunities, and the update was carried out using EFRAG guidelines. The method changed from the previous time so that instead of workshops, the views of personnel and external stakeholders were collected through surveys, and interviews with management were extended.

The results of the analysis are evaluated annually by examining the need for changes in the definitions or scores of impacts, risks and opportunities. The next more extensive analysis is planned for 2028.

Risk management and decision-making process in defining materiality

Sustainability perspectives have been taken into account in VTT's risk matrix, which is used to support risk assessment. The matrix describes the potential impacts of different types of risks and the related risk appetite determined by the executive leadership team. For example, the impacts on occupational safety and the environment are one of the aspects to be assessed whenever a risk assessment is carried out. The identified significant risks are monitored as part of VTT's enterprise risk management.

The risk management process and responsibilities are defined in VTT's risk management principles. VTT's comprehensive risk management includes the identification, assessment and management of all types of risks, including those identified as relevant in a double materiality assessment or otherwise. VTT's management participates in the identification and assessment of impacts, risks and opportunities as part of the double materiality assessment. The Management Team continuously monitors the related measures and progress towards the targets in accordance with VTT's sustainability governance model.

Decision-making process in double materiality assessment:

1. VTT's sustainability experts drew up a plan for the implementation of the double materiality assessment (incl. the selection of topics)
2. The OEDS Area SVP approved the plan and proposed some changes
3. Sustainability experts collected data according to plan
4. Sustainability experts analyzed the results
5. For each theme, in-house experts evaluated the results of the analysis
6. The CFO and the OEDS SVP validated the results with minor changes
7. VTT's Executive leadership team validated the results
8. VTT's Board of Directors approved the results

VTT's internal auditor and audit committee supervise the processes related to the double materiality analysis in accordance with the corporate governance model.

Results of the double materiality assessment

Below is an overview of the material sustainability topics identified by VTT based on the analysis. Material impacts, risks and opportunities (IROs) are detailed in the tables on the following pages.



	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Environmental	Climate change	<u>Positive impact</u>	VTT's research and innovation activities promote climate change mitigation and adaptation.	●
		<u>Negative impact</u>	Greenhouse gas emissions caused by VTT and its value chain.	●
		<u>Financial risk</u>	Climate change may pose physical risks and/or disruptions to VTT.	●
			The risk that funding for research related to climate change will decrease.	●
			The acceleration of climate change causes costs for VTT.	●
		<u>Financial opportunity</u>	VTT gains financial opportunities from climate change mitigation and adaptation.	●
Materiality*				
=Not material		●		
=Medium high		●		
=Very high		●		

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Environmental	Biodiversity	<u>Positive impact</u>	VTT aims to prevent biodiversity loss through the impact of research.	●
		<u>Negative impact</u>	VTT's use of materials and research may also have negative effects on nature.	●
		<u>Financial opportunity</u>	VTT will have financial opportunities from solutions that have a direct or indirect impact on halting biodiversity loss.	●
	Resource use and circular economy	<u>Positive impact</u>	VTT's research aims to promote more efficient use of resources and the circular economy, which has indirect positive effects.	●
		<u>Financial opportunity</u>	VTT gains financial opportunities from developing sustainable materials and advancing circular economy.	●
Materiality*				
=Not material		●		
=Medium high		●		
=Very high		●		

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Social Materiality* =Not material =Medium high = Very high	Own workforce	Positive impact	VTT promotes the well-being of its employees and thus creates positive effects.	
			Developing VTT's safety culture increases the feeling of safety and improves occupational safety.	
			VTT strongly supports the development of personnel competence and expertise, which has positive effects on employees.	
			VTT has a diverse workforce, especially multinational, which has a positive impact on both research and personnel.	
		Negative impact	Project-based expert work can be stressful and fragmented, which has negative effects on coping.	
			Accidents or other injuries may occur while commuting or at work (especially in laboratory conditions), which could have a negative impact on the employee.	
			Employees may experience sense of exclusion or other similar negative effects related to equality and inclusion.	

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Social Materiality* =Not material =Medium high = Very high	Own workforce	Financial risk	If VTT fails to retain its employees and attract talent, it poses a financial risk.	
			Health and safety risks can also pose a financial risk.	
		Financial opportunity	VTT's motivated and competent personnel are a financial opportunity for VTT, and competence is constantly being developed.	
			VTT's diverse workforce is a financial resource and opportunity for VTT.	

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Social	Workers in Value Chain	Positive impact		
		Negative impact	There may be partners or actors in our value chain having negative impacts on labor rights or human rights.	
		Financial risk	If VTT does not implement the due diligence obligation well enough, there will be a reputational risk and a risk of failing stakeholder expectations.	
		Financial opportunity		
Materiality* =Not material  =Medium high  = Very high 				

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Governance	Business conduct	Positive impact	VTT adheres to good governance in all areas, which has a positive impact on VTT's reliability, and on the other hand, VTT disseminates good practices with its own example.	
			Providing researched information to decision-makers and transparent political influence promotes positive goals in society.	
		Negative impact		
		Financial risk	There is a risk of making bad business deals and failing risk assessments in projects, or other business practices.	
		Financial opportunity		
Materiality* =Not material  =Medium high  = Very high 				

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Governance Materiality* = Not material  = Medium high  = Very high 	Research ethics	<u>Positive impact</u> VTT is an ethical and reliable actor, and we disseminate good ethical practices to the operating environment.		
		<u>Negative impact</u> If good research ethics are not followed, this will have negative effects on the reliability of VTT and research in general. (there may be deliberate fraud or damage and negligence, use of AI poses new risks)		
		<u>Financial risk</u> Failure to comply with good research ethics will have a negative impact on VTT's reliability, which poses a financial risk.		
		<u>Financial opportunity</u>		

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Governance Materiality* = Not material  = Medium high  = Very high 	Data security	<u>Positive impact</u> VTT's continuous efforts to improve data security protects its personnel and customers and may bring positive impacts, and VTT develops data security.		
		<u>Negative impact</u> In the event of a data breach or leak, this would have a negative impact on both VTT and/or its employees and/or customers.		
		<u>Financial risk</u> If VTT failed to securely manage the data, this would pose a financial risk.		
		<u>Financial opportunity</u> VTT can receive financial returns and opportunities for developing data security.		

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Governance Materiality* =Not material  =Medium high  = Very high 	Responsible customers	<u>Positive impact</u> When we choose our customers responsibly, our projects bring about positive impacts.		
		<u>Negative impact</u> If VTT fails to select responsible customers, the results of the work may have negative effects.		
		<u>Financial risk</u> Failure to select responsible customers could result in reputation disadvantage or even loss of funding.		
		<u>Financial opportunity</u> Responsible customers bring VTT significant financial opportunities.		

	Material topic(s)	Type of IRO (Impact, Risk, Opportunity)	Material impact / risk / opportunity	Materiality
Research impact Materiality* =Not material  =Medium high  = Very high 	Societal resilience	<u>Positive impact</u> VTT's role in society as a promoter of stability and sustainable growth produces positive effects.		
		<u>Negative impact</u>		
		<u>Financial risk</u>		
		<u>Financial opportunity</u> VTT's role in stabilizing society and securing and developing various functions creates financial opportunities for it.		