



Materiality analysis 2022



VATTENFALL

Preface

We want to make fossil-free living possible within one generation, and we are driving the transition towards a sustainable energy system. To succeed, we need to understand our stakeholders' expectations on our strategy, results and ambitions, now and in the future.

Engaging with our stakeholders in a constant dialogue helps us to learn what they consider important, what is expected from us, and in turn to find suitable solutions, gain acceptance and make the best decisions possible. Now more than ever, with the current energy crisis and the aftermath of the pandemic, we need to listen to our stakeholders.

The so-called 'Materiality Analysis' is an important process which enables us to engage with our key stakeholders and gather their views on a range of sustainability topics. In line with best practice, we take a 'double materiality' perspective, which means Vattenfall wants to understand not only the impact that the company has on society and the environment, but also the impact that society and environment have on the company. The results help us to shape our strategic focus areas to ensure that we meet the expectations of our stakeholders moving forward.

Between June and October 2022, over 4100 stakeholders from Vattenfall's main markets have scored the most material topics based on financial impact and sustainability impact.



Annika Ramsköld

Annika Ramsköld, Vice
President Corporate
Sustainability

What is “materiality” and why conduct an analysis?

Materiality is a concept that aims to understand the importance of key sustainability topics. Vattenfall adopts a “double materiality” approach. The aim is to understand the extent to which these topics impact the company, and the company’s impact on these topics.

A materiality analysis is the process of engaging stakeholders to identify material topics through surveys and interviews. Our process was as follows:

- 1** Identify material topics and key stakeholders.
- 2** Establish a scoring and stakeholder engagement methodology.
- 3** Gather stakeholder input through interviews, surveys and consumer panels.
- 4** Analyse the survey data and interview notes.
- 5** Disseminate a final Materiality Matrix and most material topics for further processing, such as reporting or strategy development.

Outcomes



An **updated understanding** of how our stakeholders’ perspectives have shifted since the last analysis in early 2020.



A prioritised list of sustainability topics which will help us **shape our strategy and focus areas** to ensure we meet the expectations of our stakeholders moving forward.

Who participated in 2022 and how were they engaged?

This materiality analysis was the first time we used double materiality and asked the interviewees about long term perspective (10+ years). Vattenfall was supported by a third party to ensure the analysis employed best practice.

Our assessment included >4000 survey responses, ~60 interviews, 10 different stakeholder groups, 9+ countries.

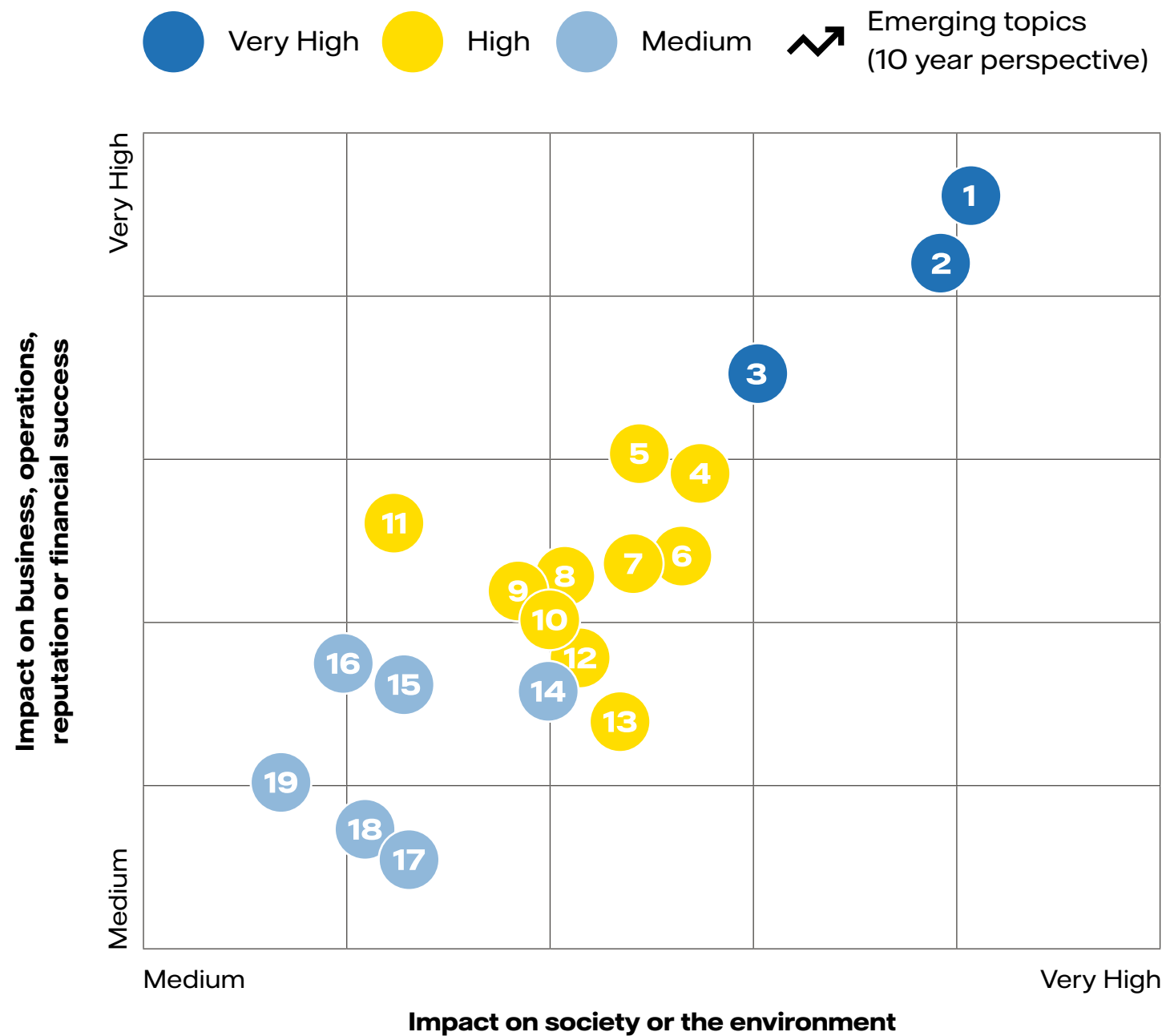


Stakeholder	Survey responses	Interviews
General public	2826	n/a
Employee	653	31
Customer	599	5
Supplier	17	9
Investor / Financial institution	8	7
Industry association / Trade association and Governmental agency / Politician / Regulator	6	10
Partner	5	3
NGO	5	3
Other	7	0
Total	4126	68

Country	Survey responses	Interviews
Germany	1957	8
Sweden	1173	35
The Netherlands	915	9
Denmark	34	6
United Kingdom	22	3
Finland	6	0
France	3	3
Norway	1	1
Other	9	3
Total	4126	68

Vattenfall 2022 materiality assessment results

The overall result of the 2022 materiality analysis is displayed in the matrix below. The most material topics are the topics in the top right corner and are ranked highest by our stakeholders in both financial and impact materiality.



Quick takeaways

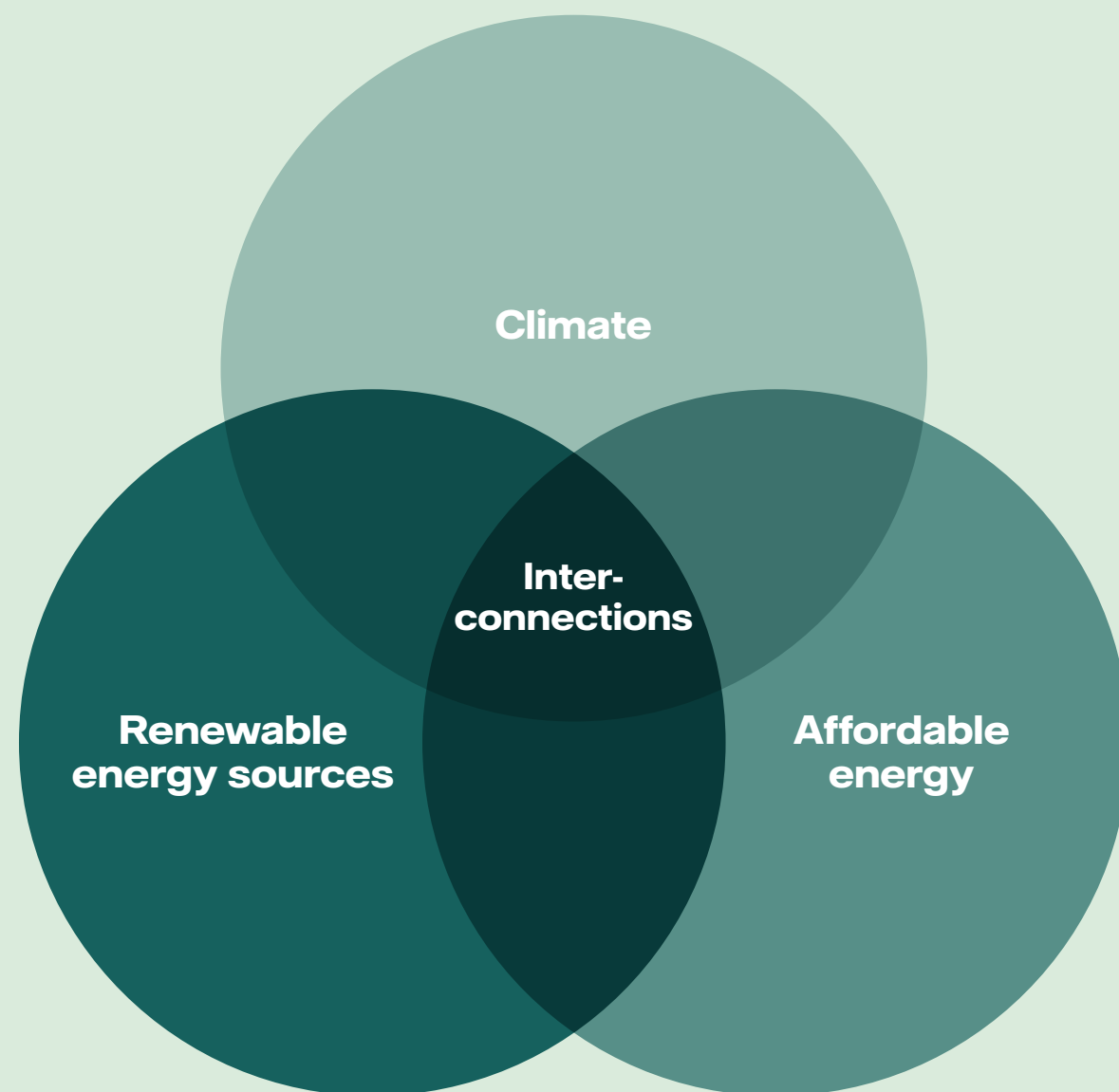
Top 3 the same

- Renewable energy
- Climate change
- Affordable energy

All are considered important, as all topics scored “Medium” or higher.

- 1 Renewable energy
- 2 Climate change and GHG emissions
- 3 Affordable energy
- 4 Energy storage
- 5 Grid infrastructure
- 6 Health and safety
- 7 Sustainable supply chain
- 8 Partnership for decarbonisation
- 9 Nuclear energy
- 10 Business ethics
- 11 Innovation
- 12 Resource use and circularity ↗
- 13 Biodiversity ↗
- 14 Water ↗
- 15 Employee engagement and empowerment
- 16 Community engagement
- 17 Other emissions (non-GHGs) ↗
- 18 Diversity, inclusion and equality ↗
- 19 Data privacy

Stakeholders often commented on the interconnections among the top three topics



Climate

“Climate change is a crucial topic. There [are many actors in the big] picture to focus on - but Vattenfall has the power to drive innovation and change to combat climate change.” (Supplier)



Renewable energy sources

“There is a huge need to expand the renewable capacity of the energy system. [...] This has both great financial prospects and is necessary for society.” (Investor)



Affordable energy

“As part of the just transition, Vattenfall has to recognise that a fundamental commodity like energy cannot become something only for the rich. Furthermore, the ongoing situation and historically cheap prices have turned society expectation upside down. But Vattenfall has to relate to this large shift in mindset and act accordingly or it will have large ramifications for the long-term success of the company.” (Employee)



Interconnections

“Most people care about affordability first and climate change second. Renewable energy, reducing climate impact and affordability go hand in hand.” (Employee)

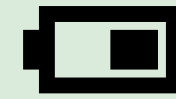
“Renewable energy, storage and affordability are strongly connected, you can't have one without the other. The overlap is the sweet spot.” (Investor)

“If energy is too expensive, climate change mitigation will not be a priority.” (Customer)

There were a few notable changes from 2020, with a number of topics moving up or down in relative importance

A common feedback from interviewees was that everything is important, and thus prioritization was difficult. Topics that have lost relative materiality have not lost their importance.

Relatively more material



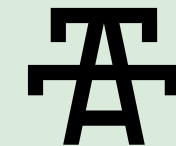
Energy storage

“Due to the nature of intermittency of renewables, energy storage is a package deal. If Vattenfall prioritises renewable energy growth, then energy storage must follow with equally high importance.” (Investor)



Sustainable supply chain

“We are starting to see that the renewable supply chain is growing and developing the same issues, especially related to human rights, as other sectors of the economy. For example, there will be many more difficult cases, like solar panels from China.” (NGO)



Grid infrastructure

“If grids aren’t built out, the whole transition fails.” (Supplier)

Relatively less material



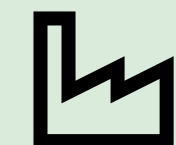
Biodiversity

“Biodiversity is kind of a container for our operations. We need to address climate change, but need to do so in a way that protects biodiversity.” (Industry Association)



Innovation

“Innovation will be a prerequisite if Vattenfall wants to deliver on their climate change and resource use/circularity goals. It’s important to question how we do things, how we work, etc.” (Industry Association)



Other emissions (non-GHG)

“Once the focus on decarbonisation resides, other environmental topics, like non-GHG emissions, will be increasingly in the spotlight.” (Employee)

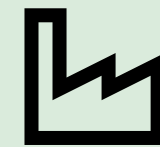
Respondents also highlighted topics they believe will be critical in the long-term

These five topics¹ were picked most frequently by stakeholders as less material topics today, which are however likely to be critical in ten years' time.

The inclusion of 'Other emissions' and 'Biodiversity' in the list is particularly interesting, as these topics were in the top five in 2020. We interpret this to mean that the topics were, are, and will continue to be, important, and that those topics which have increased in materiality in 2022 represent a sense of acute urgency among stakeholders.

1. Excluding topics which were in the top five of overall materiality.

Most frequent topics



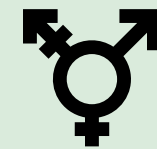
Other emissions (non-GHG)

(See previous page)



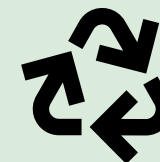
Water

"Vattenfall could do well to act more in the space, especially as water scarcity and pollution are becoming more and more mainstream issues." (Investor)



Diversity, inclusion and equality

"There is tremendous value in diversity and differences in individuals, both for society and Vattenfall as a company. It covers risks and false assumptions, provides new ideas and is more representative of society at large." (Employee)



Resource use and circularity

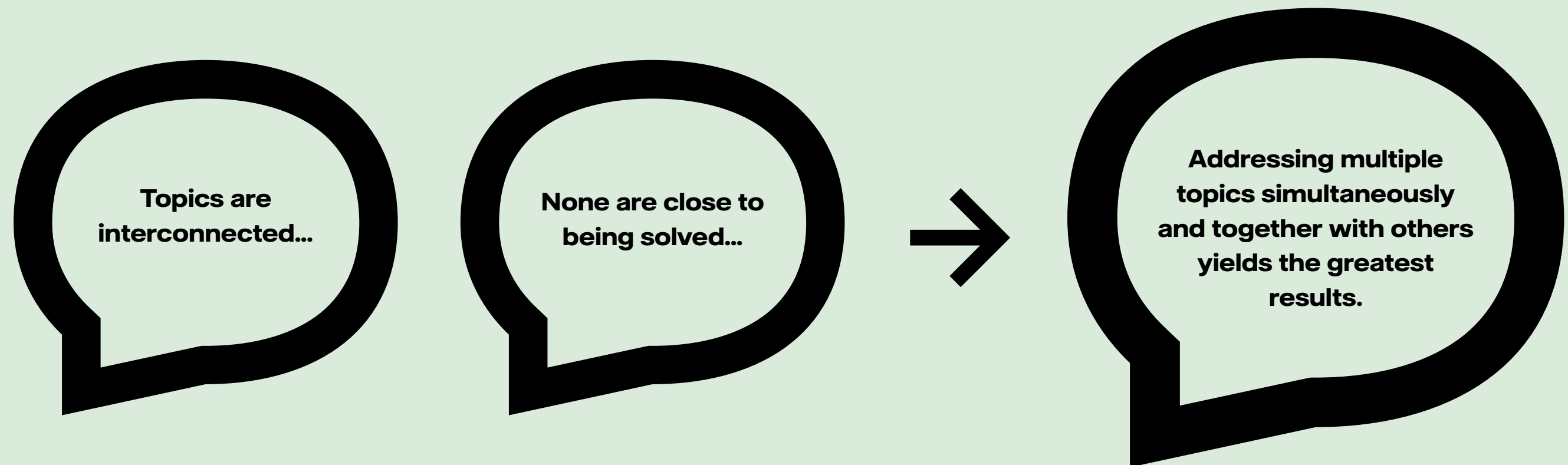
"Circularity contributes to fighting climate change and is linked to sustainable supply chain and human rights, as well as to combatting future material bottlenecks. We know which technologies are coming or necessary as part of the energy transition, and we need to find ways to ensure that these technologies can be sourced in environmentally and socially sustainable ways. A big business risk." (Politician)

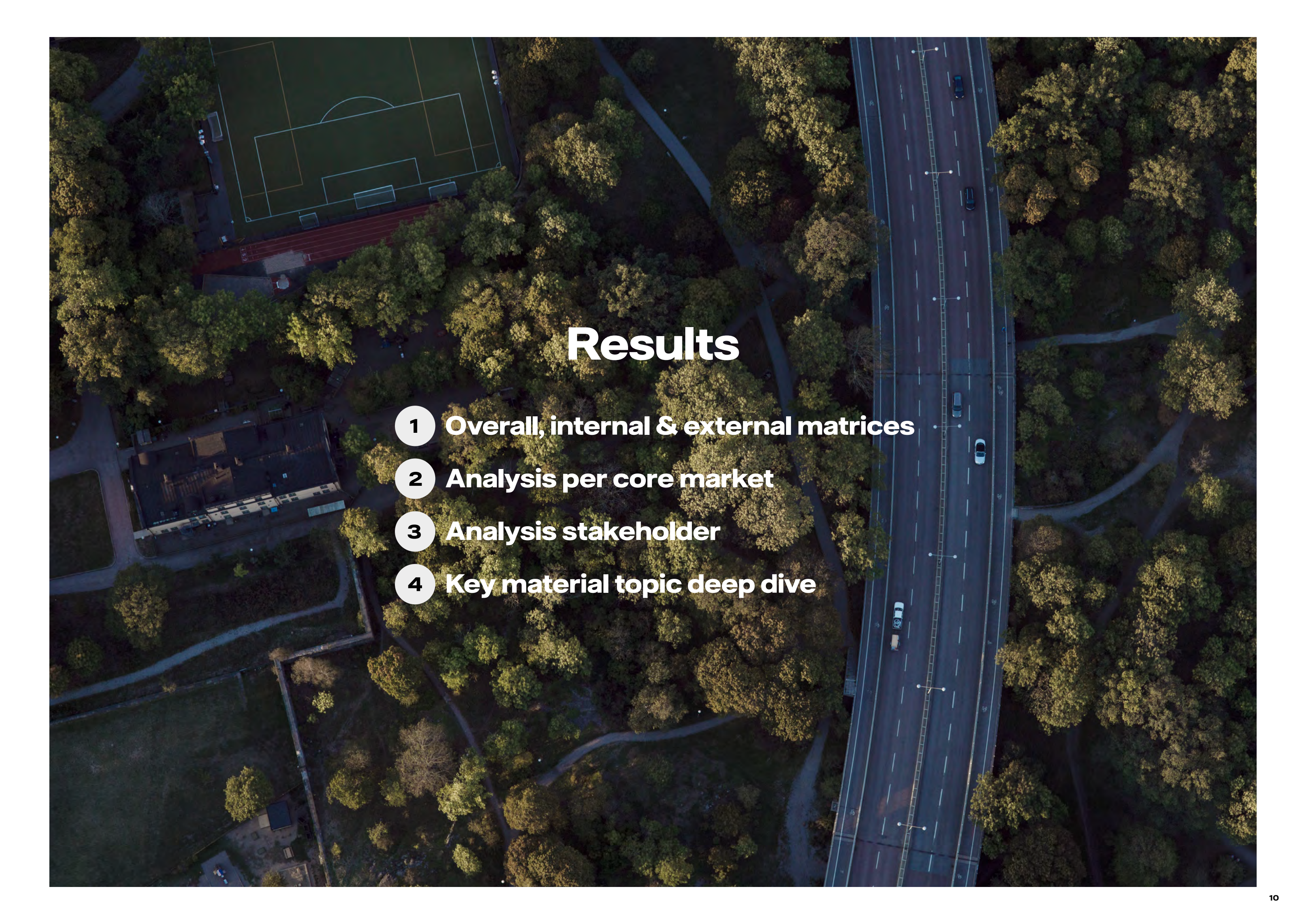


Biodiversity

(See previous page)

**Generally, the stakeholders
found it challenging to choose
one topic over another**

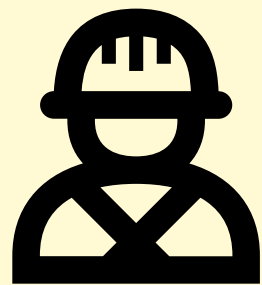


An aerial photograph of a park area. In the top left, there is a green soccer field with white markings and a red running track. Below the field is a large, dark-roofed building. To the right of the building and field is a dense forest of trees. A multi-lane road with several cars is visible on the right side of the image. The word "Results" is centered in the middle of the image in a large, white, sans-serif font.

Results

- 1 Overall, internal & external matrices**
- 2 Analysis per core market**
- 3 Analysis stakeholder**
- 4 Key material topic deep dive**

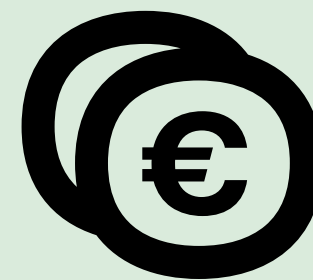
Key differences between the internal and external views



Internal

Employee empowerment & engagement

Employees placed a much higher emphasis on employee engagement, which echoes the results of previous assessments.



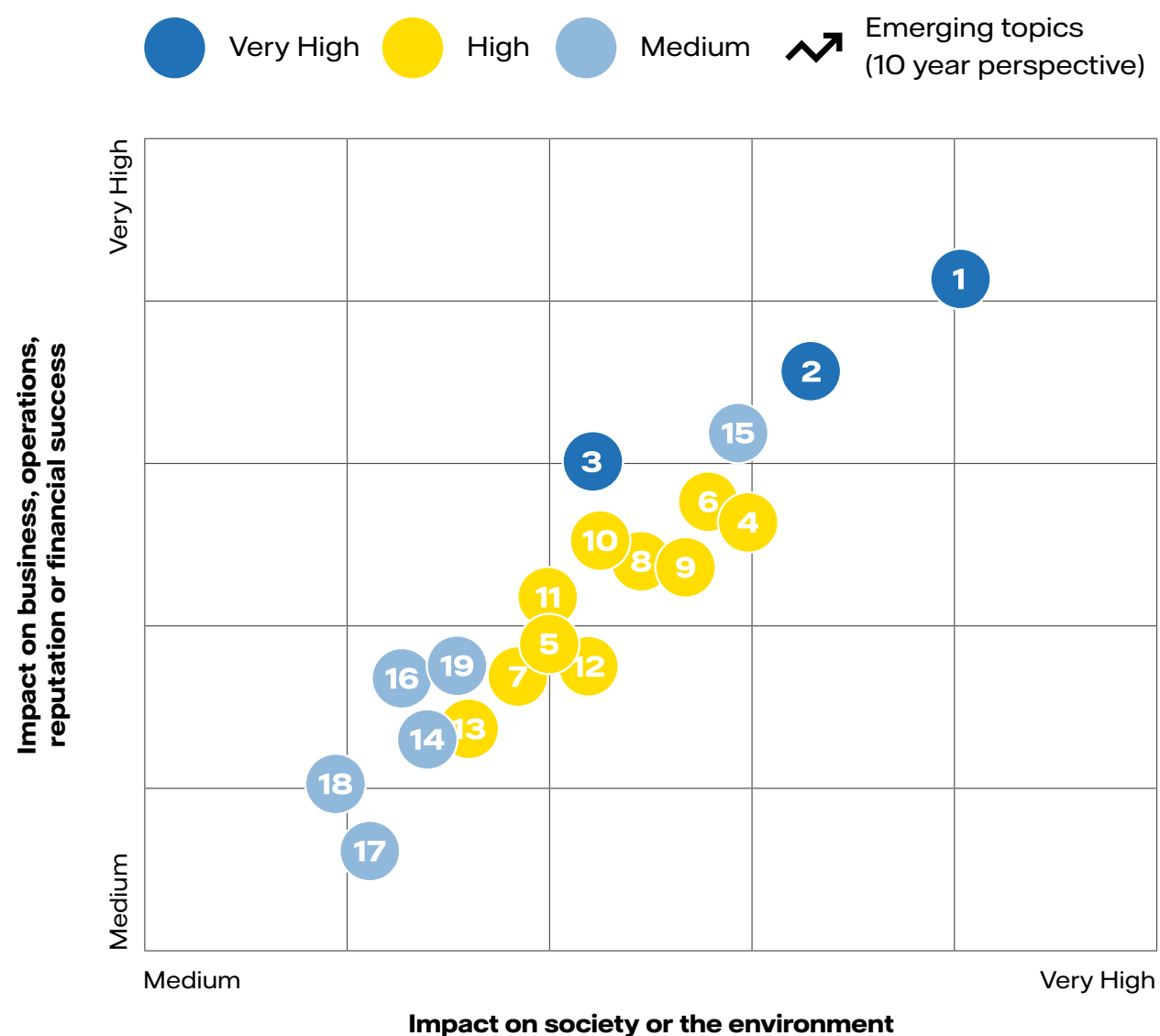
External

Affordable energy

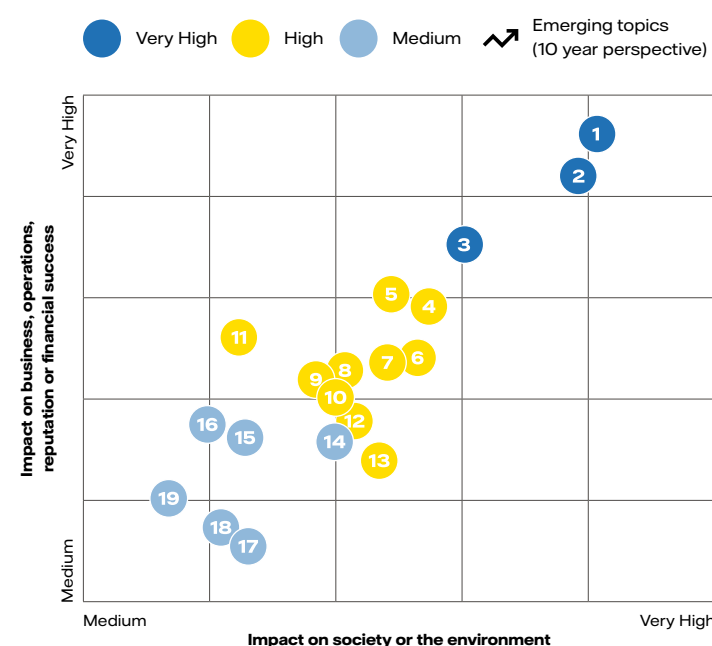
Affordability was far and away the most important topic to external stakeholders, driven in large part by 'customers' and 'general public'. It was of less importance to employees.

Vattenfall internal stakeholders 2022

The internal (employee) result of the 2022 materiality analysis is displayed in the matrix below. The most material topics are the topics in the top right corner and are ranked highest by our employees in both financial and impact materiality.



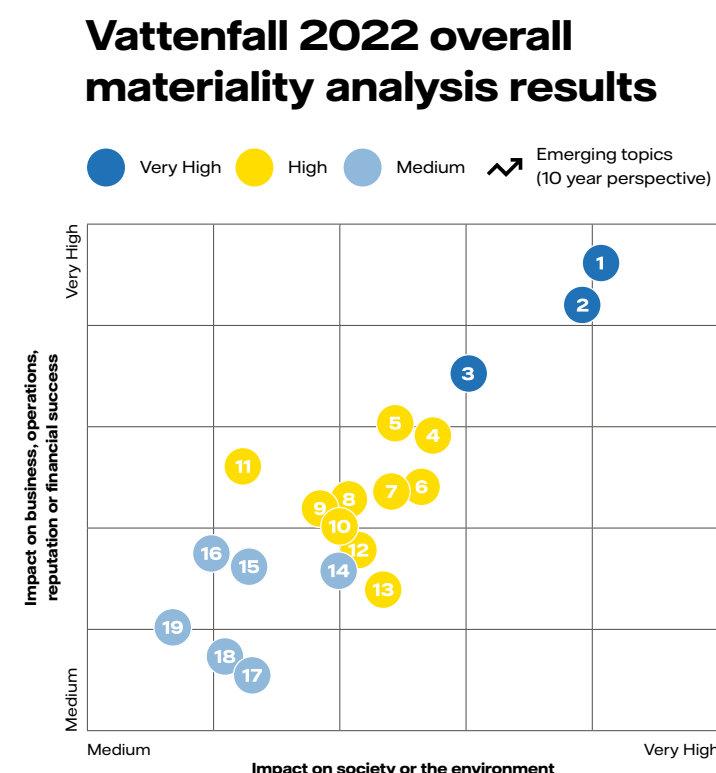
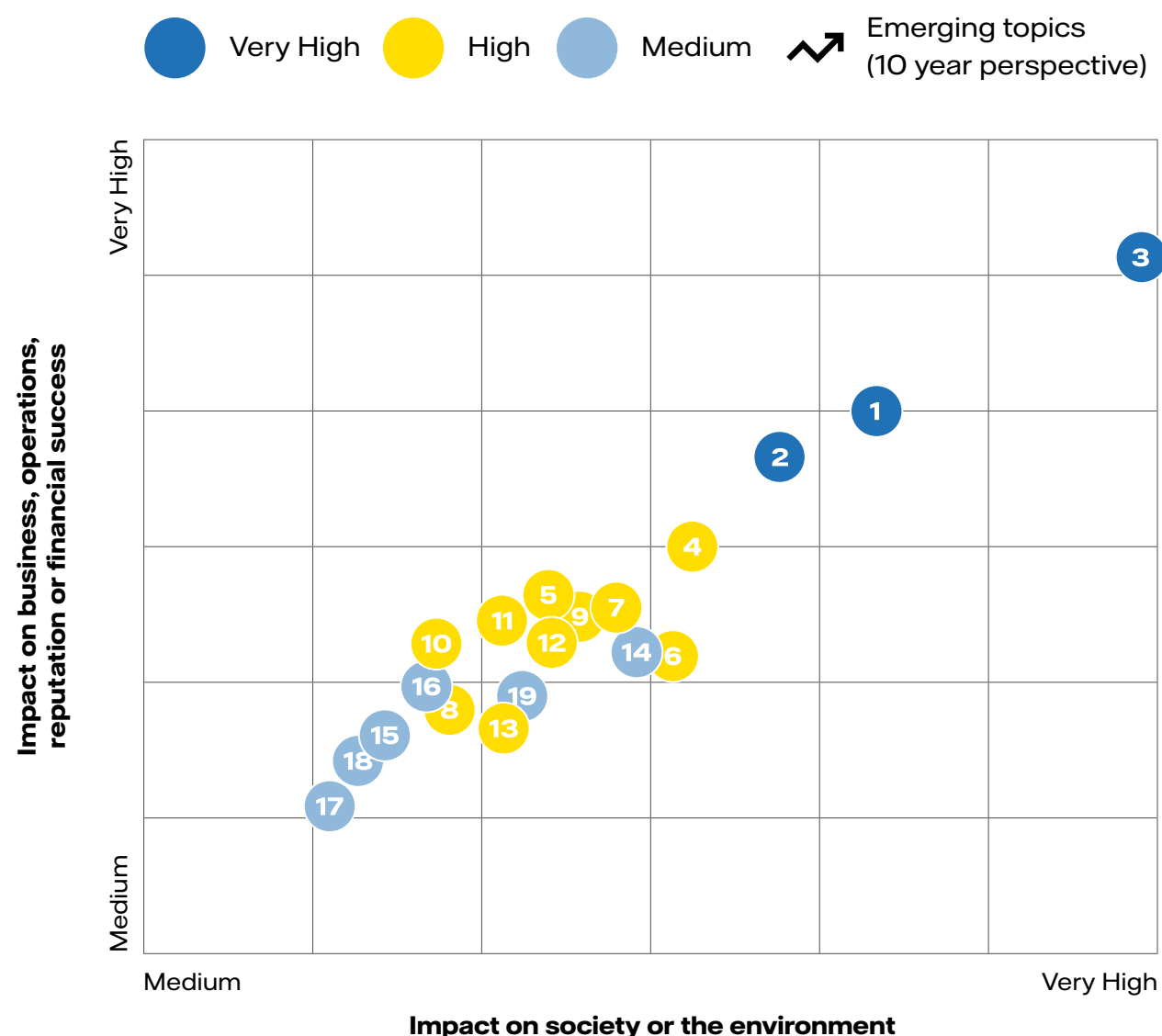
Vattenfall 2022 overall materiality analysis results



- 1 Renewable energy
- 2 Climate change and GHG emissions
- 3 Affordable energy
- 4 Energy storage
- 5 Grid infrastructure
- 6 Health and safety
- 7 Sustainable supply chain
- 8 Partnership for decarbonisation
- 9 Nuclear energy
- 10 Business ethics
- 11 Innovation
- 12 Resource use and circularity ↗
- 13 Biodiversity ↗
- 14 Water ↗
- 15 Employee engagement and empowerment
- 16 Community engagement
- 17 Other emissions (non-GHGs) ↗
- 18 Diversity, inclusion and equality ↗
- 19 Data privacy

Vattenfall external stakeholders 2022

The external result (excluding employees) of the 2022 materiality analysis is displayed in the matrix below. The most material topics are the topics in the top right corner and are ranked highest by our external stakeholders in both financial and impact materiality.



- 1 Renewable energy
- 2 Climate change and GHG emissions
- 3 Affordable energy
- 4 Energy storage
- 5 Grid infrastructure
- 6 Health and safety
- 7 Sustainable supply chain
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- 18 Diversity, inclusion and equality ↗
- 19 Data privacy

Most material topics among core countries

As in the overall result, we have collected the top three ranked topics by stakeholders for each core country in both financial and impact materiality.

Topic	 N=1173	 N=1957	 N=915
 Renewable energy	1 (5)	1 (2)	1 (3)
 Climate Change and GHG emissions	2 (2)	2 (3)	
 Affordable energy			2 (1)
 Nuclear energy	3 (13)		
 Sustainable supply chain			3 (12)
 Grid infrastructure		3 (7)	

Note: Value in brackets indicates 2020 importance. Responses from Denmark / Finland / United Kingdom / Norway / Other have been incorporated in group statistics, but are not significant at local level due to limited responses

Summary



All markets agree on Renewable energy in first place



Each market has a different sustainability topic in third place



Affordable energy was just outside the top three for Germany and Sweden but its overall popularity was driven by the general public and customers in all markets

Most material topics per stakeholder group in Sweden



Customers and the general public have a clear focus on affordable energy, while nuclear energy has jumped into materiality for most Swedish stakeholders.

Topic	Customer N=210	Employee N=282	General public N=656	Investor* N=5	Supplier N=9
Affordable energy	1 (1)		1 (2)		
Renewable energy	3 (5)	2 (11)	2 (3)	1 (4)	
Climate Change and GHG emissions		3 (1)		2 (4)	
Nuclear energy	2 (2)	1 (12)	3 (13)		2 (22)
Employee engagement and empowerment					3 (6)
Business ethics					1 (12)
Resource use and circularity				2 (4)	
Energy storage				4 (10)	

Note: Value in brackets indicates 2020 importance. Responses from NGO / Industry association / partner stakeholder groups have been incorporated in group statistics but are not reliable at a stakeholder level since they had sample size smaller than 5.

* Investor has the fourth place included since there was a tie between the top two topics.

Most material topics per stakeholder group in Germany



Customers and the general public are completely aligned on their top three, while employees mostly agree except, they unsurprisingly advocate for engagement and empowerment. Notably, grid infrastructure was ranked third on the national level, but just missed the top three on the stakeholder level.

Topic	Customer N=226	Employee N=202	General public N=1526
 Affordable energy	1 (1)		1 (1)
 Renewable energy	2 (4)	1 (4)	2 (2)
 Climate Change and GHG emissions	3 (2)	3 (2)	3 (4)
 Employee engagement and empowerment		2 (1)	

Note: Value in brackets indicates 2020 importance. Responses from NGO / Industry association / partner / supplier / investor stakeholder groups have been incorporated in group statistics but are not reliable at a stakeholder level since they had sample size sample size smaller than 5.

Most material topics per stakeholder group in Netherlands



Customers and the general public have a clear focus on affordable energy, while addressing climate change comes in second place for Dutch stakeholders. Customers are pushing for more innovation while employees prefer more energy storage investment. Notably, sustainable supply chain was ranked third on the national level, but just missed the top three on the stakeholder level.

Topic	Customer N=162	Employee N=109	General public N=641
 Affordable energy	1 (1)		1 (1)
 Renewable energy		1 (2)	3 (3)
 Climate Change and GHG emissions	2 (2)	2 (2)	2 (4)
 Innovation	3 (5)		
 Energy storage		3 (5)	

Note: Value in brackets indicates 2020 importance. Responses from NGO / Industry association / partner / supplier / investor stakeholder groups have been incorporated in group statistics but are not reliable at a stakeholder level since they had sample size sample size smaller than 5.

Most material topics per stakeholder group

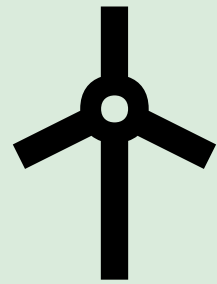


Customers and the general public have an unwavering focus on affordable energy, while addressing climate change and investing in renewable energy are material for all stakeholder groups. Investors are pushing for niche topics such as water and energy storage and suppliers are prioritizing ethical business conduct.

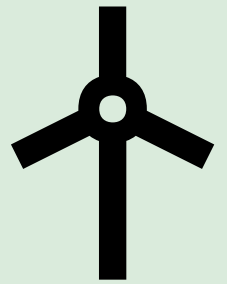
Topic	Customer N=599	Employee N=653	General public N=2826	Investor* N=8	Supplier N=17
 Affordable energy	1 (1)		1 (1)		
 Renewable energy	2 (3)	1 (3)	2 (2)	1 (2)	2 (1)
 Climate Change and GHG emissions	3 (2)	2 (1)	3 (5)	1 (2)	3 (2)
 Energy storage				4 (13)	
 Employee engagement and empowerment		3 (2)			
 Business ethics					1 (8)
 Water				3 (n/a)	

Note: Value in brackets indicates 2020 importance. Responses from NGO / Industry association / partner stakeholder groups have been incorporated in group statistics but are not reliable at stakeholder less since they had sample size sample size smaller than 8.

* Investor has the fourth place included since there was a tie between the top two topics and water does not have a 2020 score because it was a new addition in 2022.



Renewable Energy



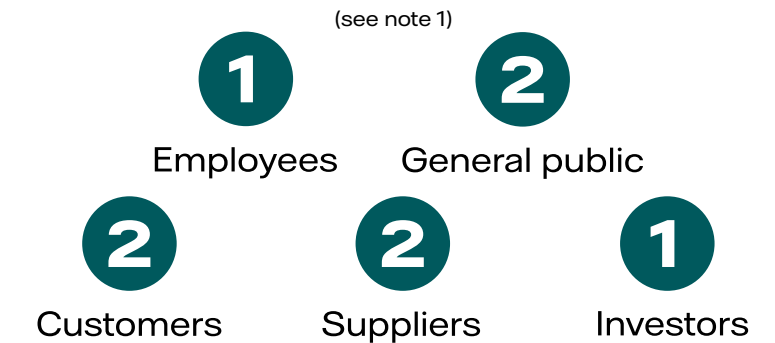
Overall ranking 2022



Country rankings

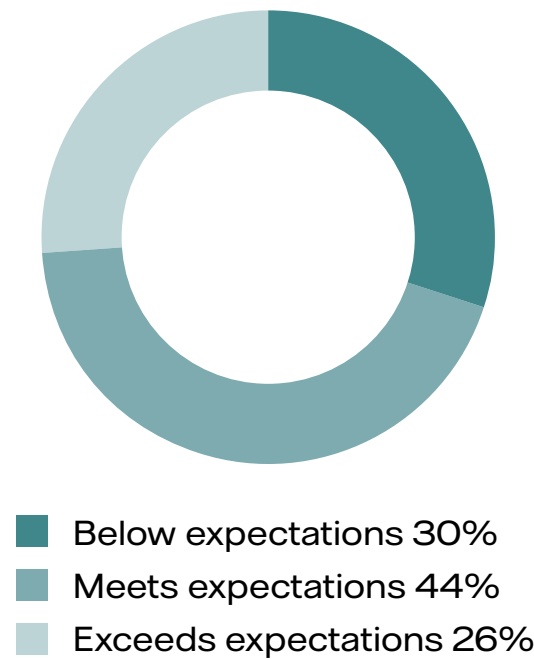


Stakeholder rankings 2022



Vattenfall's performance

(see note 2)



Importance in comparison to 2020 results

No change

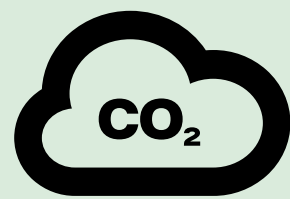
Interview comments

"Fundamental need for more" (NGO)
 "It is important that Vattenfall leads this renewables transformation." (Customer)
 "The general trend is clear: both society and Vattenfall are moving towards renewable energy." (Employee)

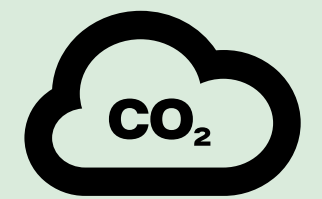
Commitments

We have set the 2030 ambition to quadruple our solar and wind energy generation capacity from 2020.

Notes: 1) Displayed stakeholder groups are those with the highest number of respondents and at aggregate level across all markets. Ranking across stakeholder groups can vary at country level. See 'analysis per core country'. 2) Some interviewees were asked to rate Vattenfall's performance from 'below' to 'exceeds' expectations. Their responses were aggregated into the pie chart.



Climate Change and GHG emissions



Overall ranking 2022



Country rankings



2



2



4

Stakeholder rankings 2022

(see note 1)

2

Employees

3

General public

3

Customers

3

Suppliers

1

Investors

Vattenfall's performance

(see note 2)



- Below expectations 17%
- Meets expectations 55%
- Exceeds expectations 28%

Importance in comparison to 2020 results

No change

Interview comments

"Prioritising climate change makes the most sense for our portfolio, and investments." (Employee)

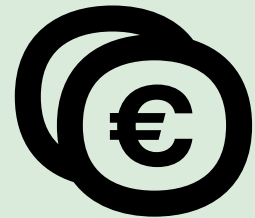
"Vattenfall has the power to drive innovation and combat climate change." (Supplier)

"Super important issue for society. Vattenfall can play a leading role in positively impacting the issue." (Partner)

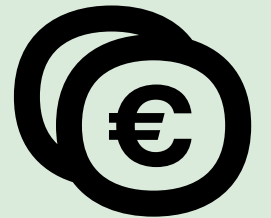
Commitments

We will decrease our GHG emissions in line with limiting global warming to 1.5 degrees, and aim to be net zero by 2040.

Notes: 1) Displayed stakeholder groups are those with the highest number of respondents and at aggregate level across all markets. Ranking across stakeholder groups can vary at country level. See 'analysis per core country'. 2) Some interviewees were asked to rate Vattenfall's performance from 'below' to 'exceeds' expectations. Their responses were aggregated into the pie chart.



Provide affordable energy



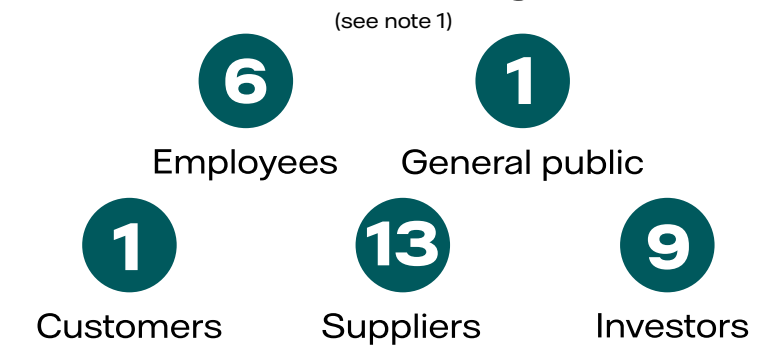
Overall ranking 2022



Country rankings

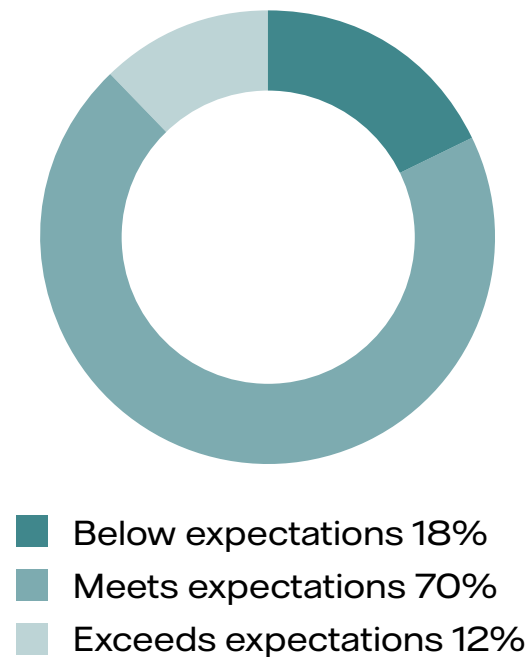


Stakeholder rankings 2022



Vattenfall's performance

(see note 2)



Importance in comparison to 2020 results

No change

Interview comments

"Vattenfall has a huge impact on whether this critical service is provided at an affordable price." (NGO)

"Everybody should be able to afford electricity." (Employee)

"Vattenfall can help to get us out of the current crisis." (Industry Association)

Commitments

Vattenfall aims to be a leader in Levelised Energy Cost of renewable electricity production, focusing on innovation and integrated solutions to reduce cost and be able to deliver subsidy-free wind and solar projects. Simultaneously, we strive to prevent energy poverty, offering tailored solutions to customers who want to pay their bills but cannot.

Notes: 1) Displayed stakeholder groups are those with the highest number of respondents and at aggregate level across all markets. Ranking across stakeholder groups can vary at country level. See 'analysis per core country'. 2) Some interviewees were asked to rate Vattenfall's performance from 'below' to 'exceeds' expectations. Their responses were aggregated into the pie chart.

Material topics also confirm our prioritised SDGs*

Vattenfall identified the six SDGs to which we make the greatest global contribution.

The top three most material topics identified by stakeholders highlight that these six remain relevant, as each topic impacts a number of identified goals.

Our core strategy and operations continue to be aligned with the areas in which we can have the greatest impact as a company.

	 Reduce CO ₂	 Increase renewables	 Provide affordable energy
 7 AFFORDABLE AND CLEAN ENERGY	✓	✓	✓
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	✓	✓	
 11 SUSTAINABLE CITIES AND COMMUNITIES	✓	✓	✓
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	✓	✓	
 13 CLIMATE ACTION	✓	✓	
 17 PARTNERSHIPS FOR THE GOALS	✓	✓	

*Sustainable Development Goals, part of UN Agenda 2030. In 2015, the 17 Goals were agreed upon and adopted by over 150 countries.