

# Welcome to your CDP Climate Change Questionnaire 2020

## C0. Introduction

### C0.1

#### **(C0.1) Give a general description and introduction to your organization.**

Our Mission: We are globally recognized as a leading provider of fragrances, flavors, active ingredients and aroma chemicals as well as sensorial and nutritional solutions for the perfume, cosmetic, pharmaceutical, food, beverage and pet food and baby food industries. We combine our knowledge about consumers' ever-changing needs with creativity and ground-breaking technologies. In doing so, we concentrate on the development of solutions that provide our customers with added value. We ensure sustained value creation by allowing our employees and shareholders to participate in our company's success.

Our Vision: We possess a unique value-adding portfolio and are the most successful company in the industry. We challenge the status quo and constantly explore new ideas.

This enables us to perform at our highest levels and set new standards.

We provide our customers with innovations and inspirations that fulfil our promise of always inspiring more...

### C0.2

#### **(C0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2019	December 31, 2019	No

### C0.3

#### **(C0.3) Select the countries/areas for which you will be supplying data.**

Argentina

Australia

Brazil

Canada

Chile

China

Colombia

Costa Rica

Ecuador

Egypt

France

Germany

Hungary

India

Japan

Madagascar

Mexico

Netherlands

Russian Federation

Singapore

South Africa

Spain

Thailand

United Kingdom of Great Britain and Northern Ireland

United States of America

Venezuela (Bolivarian Republic of)

## C0.4

**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

EUR

## C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Operational control

## C-CH0.7

**(C-CH0.7) Which part of the chemicals value chain does your organization operate in?**

Row 1

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**Bulk organic chemicals**

**Bulk inorganic chemicals**

**Other chemicals**

Specialty chemicals

## C1. Governance

### C1.1

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

### C1.1a

**(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

Position of	Please explain
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individual(s)	
Chief Executive Officer (CEO)	The direct responsibility for climate-related aspects regarding our strategy and governance lies with the Chief Executive Officer (CEO) . He receives regular reports on the progress of all sustainability activities including those with climate specific relevance. The CEO continuously promotes our approach to sustainability in all areas of the company by defining specific sustainability objectives for all managers which are integrated into individual performance goals. An example of a climate-related decision made by the CEO is the investment decision for a waste incineration facility at Holzminden whereby we save fossil based fuels and realize emission reductions.
Other, please specify  Supervisory Board	The supervisory board of Symrise verifies all non-financial data according to the CSR Richtlinie Umsetzungsgesetz, the §289 of the German commercial code, the GRI standards as well as other key figures and information presented in sustainability publications like our sustainability record (cr2019.symrise.com/sustainability/sustainability-record).

## C1.1b

### (C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy  Reviewing and guiding major plans of action  Reviewing and guiding business plans	The CSO as head of the Sustainability Board sets sustainability objectives, provides further details on the board's oversight of climate-related issues which are then directly implemented in the respective divisions. The CSO regularly reports to the CEO who is responsible for the all-over strategy

	<p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	of Symrise AG.
Scheduled – some meetings	<p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Setting performance objectives</p>	<p>All KPI's and programs related to climate change were achieved in 2019 and results have been verified by an external audit company.</p> <p>Consequently all decisions of the CEO related to climate change were correct.</p> <p>For more details see Symrise Corporate Report 2019, pages 92-93.</p>

## C1.2

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
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Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

## C1.2a

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

The Executive Board and the Sustainability Board have appointed sustainability officers for the Flavor, Nutrition and Scent & Care business segments as well as one representative for each of the staff departments of Human Resources, Finance/Investor Relations and Corporate Communications. However, the direct responsibility for strategy lies with the **Chief Executive Officer (CEO)**, who receives regular reports on the progress of all sustainability activities including climate related issues. The CEO continuously promotes our approach to sustainability in all areas of the company by agreeing on specific sustainability objectives for all managers which are integrated into individual performance goals. He manages sustainability in corporate processes using our Integrated Management System, based on the international standards on quality (ISO 9001), environmental protection (ISO 14001), work safety (OHAS 18001), sustainability (ISO 26000), energy (ISO 50001), social responsibility (SA 8000), the audit standards of the Global Food Safety Initiative (GFSI) among other recognized local standards. The **Chief sustainability Officer (CSO) has the responsibility to** regularly send reports to the CEO. Under his chairmanship the Symrise Sustainability Board regularly convenes. It is the global and cross-business committee that has the responsibility to integrate climate and sustainability principles more strongly in our core processes. Together with representatives

from management the CSO ensures in this framework that climate related topics and the concerns of our important stakeholder groups are considered along our entire value chain. The Sustainability Board sets sustainability and climate objectives, which are then directly implemented in the respective divisions.

For more information on the organizational structure see Corporate Report 2019, p. 18.

## C1.3

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

## C1.3a

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Board/Executive board	Monetary reward	Efficiency target	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Chief Executive Officer (CEO)	Monetary reward	Efficiency target	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>

Chief Sustainability Officer (CSO)	Monetary reward	Efficiency target	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Energy manager	Monetary reward	Energy reduction project	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Environmental, health, and safety manager	Monetary reward	Emissions reduction project	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Environment/Sustainability manager	Monetary reward	Emissions reduction project	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Buyers/purchasers	Monetary reward	Supply chain	Please find attached an overview of our objectives in our 2019 Corporate Report on page

		engagemen t	22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Chief Financial Officer (CFO)	Monetary reward	Efficiency target	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>
Corporate executive team	Monetary reward	Efficiency target	Please find attached an overview of our objectives in our 2019 Corporate Report on page 22-23: <a href="https://www.symrise.com/sustainability/#introduction">https://www.symrise.com/sustainability/#introduction</a>

## C2. Risks and opportunities

### C2.1

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

### C2.1a

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	1	2	
Long-term	2	10	

## C2.1b

### **(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

Risks are assessed on a gross and a net risk basis. **Gross risk** is defined as risks without taking into account mitigating measures/controls. Basically gross risks are only to be reported from a value of 500 T . A **net risk** is defined as risks that remain after mitigating measures/controls.

For Symrise, the term „substantive financial or strategic impact“ (as asked for in question C2.3a) means that a gross risk has a higher EBIT impact than our above defined threshold level of 500 T . For opportunities analogous definitions and thresholds apply.

## C2.2

### **(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.**

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#### **Value chain stage(s) covered**

Direct operations

Upstream

Downstream

#### **Risk management process**

Integrated into multi-disciplinary company-wide risk management process

#### **Frequency of assessment**

More than once a year

#### **Time horizon(s) covered**

Short-term

Medium-term

Long-term

#### **Description of process**

Our Risk Management Procedure is integrated into our multi-disciplinary company-wide risk management process. It defines the risk self-assessment (RSA) process as part of the risk management system with respective rules and responsibilities. The objective of this procedure is to identify and control essential risks to ensure the positive business development of the Symrise group and an effective risk reporting in compliance with laws and regulations.

Risk is defined as the potential negative deviation from financial objectives (e.g. plans). The process used to determine which climate related risks and opportunities could have a substantive financial or strategic impact applies to all value chain stages and consists of the following two parts:

Part 1: IDENTIFICATION:

We use a two-step process to identify climate related risks and opportunities (R/Os).

All R/Os, including climate related ones, are identified and assessed on a regional level using regional expertise.

They cover the whole range of climate related issues (transition related and physical ones). For instance, Regulatory changes are permanently monitored by Regulatory Affairs.

R/O Owners are also nominated on asset level (process oriented and legal entity related). All R/Os with a considerable impact on net sales or costs and with a considerable likelihood of occurrence have to be reported to the group-wide Risk Manager.

This represents an asset level identification process leading to a group-wide R/O identification in a bottom-up approach.

Furthermore, on group level we apply a top-down approach by making use of a comprehensive list of potential climate related risks and opportunities derived from the

CDP questionnaire and guidance.

Based on this, a team (consisting) of internal and external experts analyse the various aspects of our business model in order to identify potential climate related R/Os.

In course of this, several of the already identified R&Os have been attributed to climate change.

#### Part 2: ASSESSMENT:

As described in C2.1b, for Symrise, the term „substantive financial or strategic impact“ means that a gross R/O has a higher EBIT impact than our defined threshold level of 500 T .

EBIT impact defines the effects by an R/O that materializes. The effect of revenue related R/Os on EBIT are estimated against our last year´s EBIT margin. Cost related effects on EBIT are typically calculated by multiplying specific effects (e.g. cost increase per MWh or per ton of CO2 or raw material) by the affected volume. In order to be conservative, potential price increases on our sales side which possibly balance out cost effects are neglected when the impact on EBIT is calculated.

All inherent R/Os above a financial impact of 500 T or higher are to be reported.

Two case studies of this combined process are described below.

Process for responding to climate related R/Os:

After climate related R/Os have been identified and assessed, they are prioritized according to impact, likelihood and potential influence on net sales.

There are different ways to treat risks:

1. Avoid risk with a high likelihood and high impact by stop specific activities (e.g. agreements).
2. Reduce risk with a high likelihood, but low impact by mitigation measures.

3. Transfer risk with low likelihood, but high impact by insurance, outsourcing, etc.
4. Accept risk with low likelihood and low impact, if the cost to mitigate risk is higher than cost to bear the risk.

Decisions need to be made which way of treatment should be applied. Basically, we mitigate risks if the respective measures lead to a strengthening outcome for our core business, e.g. through energy savings or diversification of sourced materials and suppliers. If mitigation measures are not possible for substantive risks but an insurance is available – e.g. for acute climate risks – we make use of this and transfer respective risks. If both options are not possible to realize we accept and control the risks. Our typical management method in regards to transitional risks is to reduce their impact by reduction of our energy consumption and carbon footprint in a systematic way.

Climate-related opportunities typically require investments in plants, R&D or M&A.

CASE STUDIES for the process used to determine which climate related R/Os could have a substantive financial or strategic impact:

#### PHYSICAL RISK:

Situation: Our supply managers have experienced increased prices for agricultural raw material through bad harvests due to water scarcity. As the likelihood and severity of water scarcities is closely correlated to climate change, this risk has been attributed to climate change in the top-down-part of the identification related step described above.

Task: In order to be able to prioritize this risk, its financial and strategic impact has to be assessed.

Action: To do so we follow the assessment process described in the text above including the comparison against the outlined threshold.

Result: The impact of this risk has been estimated to 6.9 million EBIT per year, well

above the defined threshold. Hence, this risk has a substantive impact.

#### TRANSITION related OPPORTUNITY:

Situation: Our sales force has identified an increased demand for sustainably manufactured products that Symrise can cover better than its competitors.

As climate change related issues form a major part of the related sustainability criteria, this opportunity has been attributed to climate change in the top-down part of the identification related step described above.

Task: In order to be able to prioritize this opportunity, its financial and strategic impact has to be assessed. To do so we follow the assessment process described in the text above.

Action: To do so we follow the assessment process described in the text above including the comparison against the outlined threshold.

Result: The impact of this opportunity has been estimated to 2.6 million EBIT per year, well above the defined threshold. Hence, this opportunity has a substantive impact.

## C2.2a

### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Symrise has to comply with all legal regulations originating from climate related policy regulations and faces respective economic consequences. As our production is energy intensive, the resulting risks are relevant. Thus they are included in our risk assessment.  An example is that our operation costs my risk due to the EU ETS

		<p>risk. This creates CO2 costs that must be borne by operators in form of direct compliance costs from buying CO2 certificates and indirect costs (from price effects in electricity bills).</p> <p>2030 ETS target and effects from the market stability reserve CO2 prices may increase which would lead to higher operating costs: This affects both the direct ETS compliance costs for Symrise as well as indirect costs from rising power prices.</p> <p>Symrise currently operates one facility under the ETS with an output of 30 MWh. This is a CHP-plant located in our HQ in Holzminden. The volume of free-of-cost allocation shrinks year by year.</p> <p>Indirect costs originate from the passing carbon costs on to energy users. Utilities are able to do this, as the marginal power plant (power plant at the end of the merit order) defines the price at energy exchanges. In France, Germany, Hungary and the UK, Symrise is exposed to indirect ETS costs. We assess the risk by calculating the potential effects on operating costs. To do so, we have estimated direct and indirect EU-ETS related cost increases which are finally to be added up..</p>
<p>Emerging regulation</p>	<p>Relevant, always included</p>	<p>As our production is energy intensive, risks due to emerging regulations are relevant.</p> <p>We face emerging regulation risks for example in the context of the German Renewable Energies Act levy.</p> <p>In particular, the current partial exemption of the power produced in</p>

		<p>our highly efficient gas-fired CHP plant in Holzminden from the levy ("EEG-Umlage-Befreiung") could be abolished in an upcoming reform, prompting disadvantageous cost effects.</p> <p>The complete elimination of this discount in the worst case may increase our operational costs considerably. This could subsequently negatively influence the economics of the CHP-plant. It has required the significant investment of 30 million and reduces our carbon emissions by more than 20.000 tons/year. The exemption from the levy has been one of our rationales for investing.</p>
Technology	Not relevant, explanation provided	<p>While technical optimization is crucial for keeping pace with current developments in a competitive market and our steady modernization of production facilities and technologies at Symrise, we currently do not see any real directly climate related technology risks at Symrise that may result in financial impacts of relevance to our business.</p> <p>Our rationale for deeming climate related technology risks as not relevant is as follows:</p> <p>The technologies required for the decarbonisation of our direct operations are well established and mature technologies. Examples are CHP-plants, waste heat recovery and drying technologies at our productions sites e.g. in Holzminden. Thus, by using them we do not face technology risk. Here, the situation is considerably different from the base chemical sector, in which several decarbonisation technologies are still in the pilot phase or even subject to R&amp;D. Of course, the decarbonisation of our production is furthermore</p>

		<p>dependent on the availability of CO2-free power and fuel. However, the respective technology risks are borne by third parties, i.e. by power and fuel suppliers.</p> <p>We conclude that unlike the situation in other sectors (where there is the risk of imminent or already ongoing technological changes) we do not see how such technological changes could affect the way we do our business now or in the near future at Symrise.</p>
Legal	Not relevant, explanation provided	<p>Symrise continuously monitors the risk of climate related lawsuits on a medium-term basis.</p> <p>Our rationale for deeming climate related legal risks as not relevant is as follows:</p> <p>Despite the increasing number of such litigations Symrise doesn't see itself exposed to this type of risk.</p> <p>This is due to the clear difference in emissions size of the already sued companies in contrast to our limited footprint, the sector focus of such litigation acts and our ambitious climate targets and related programs at Symrise.</p> <p>Furthermore, the legal consequences of non-compliance with policy regulations such as the EU-ETS could be regarded as "legal risk".</p> <p>However, please note that we consider this issue rather a regulatory risk.</p>
Market	Relevant, always included	<p>Symrise faces climate-related market risks which originate from its supply and demand side. The following example describes a climate-related market risk in our supply chain: If water demanding agricultural goods such as tomatoes are sourced from a water-stressed country,</p>

		<p>rising temperature may result in shrinking harvests.</p> <p>The resulting shortage on the market may lead to increasing costs. Increasing costs for raw materials such as onions, citrus and vanilla products, etc. are also related to lower yields in agriculture farming due to warming or other climate change related pattern. Such fruits are currently sourced from countries like Germany, France, Italy, US and Madagascar. They are used to produce extracts, which can be used to boost taste and odour. Price increases on our supply side leading to increasing prices for our products, might potentially resulting in lower market demand for our products. This could cause lower demand from our customers, who may switch to other alternatives. Thus, our ability to pass on increased operating costs due to physical climate change might be limited. We assess the risk as follows: In order to assess our climate related supply chain risk, we assess respective price increases which occurred in the past. On this basis, we also estimate potential future price volatilities driven by climate change. Here vanilla shall serve as an example: Madagascar provides 80 percent of the vanilla used throughout the world. The tropical cyclone Enawo that hit Madagascar in March 2017 damaged thousands of vanilla plants, creating a worldwide surge in prices and a frenzy among ice cream makers to secure supplies of the flavoring extract. The price for vanilla bean pods reached a record high of more than \$600 per kilogram.</p>
<p>Reputation</p>	<p>Relevant, always included</p>	<p>Symrise faces climate-related reputation risks. The following example illustrates this:</p> <p>Our key customers focus in their supplier evaluation increasingly on</p>

		<p>our carbon reduction performance. Not meeting these expectations might result in supplier rating devaluation. As a consequence, core listings could be lost, which may eventually exclude us from new business and therefore reduce our future turnover and hence have a negative impact on our EBIT. The background to this is that consumers are expected to focus on climate friendly products. Thus, climate performance is of high and even growing importance for our key customers – e.g. the world leading cosmetics companies. Symrise produces high quality products (fragrances, flavours, cosmetic ingredients and aroma chemicals as well as sensorial and nutritional solutions for the perfume, cosmetic, pharmaceutical, food, beverage, pet and baby food industries) in a very sustainable way, e.g. with low carbon footprints. Our customers (B2B) concentrate on climate friendly ingredients as input to their products. This leads to a substitution of products, shifting from carbon intensive to climate friendly ones. If we do not perform at least as good as our competitors or do fail to inform potential clients in a convincing way about our climate related performance, we would expect our market share to decrease.</p>
<p>Acute physical</p>	<p>Relevant, always included</p>	<p>Hazardous weather events such as floods and storms could have negative effects on our direct operations and on our supply with agricultural raw materials.</p> <p>As an example, they can cause damages to our production facilities and lead to business interruptions.</p> <p>Thus, risks that are event-driven, including increased severity of extreme weather events such as cyclones, hurricanes, or floods are</p>

		<p>included into the Symrise Risk Assessment.</p> <p>In particular our facilities in the US in Charleston, Georgia and Florida are exposed to potential damages by acute physical effects. Our risk assessment is done by taking business interruption, capital damage and increasing transport costs into account. Due to our contingency plan, which determines the procedure in case of disruption to our supply chain or sites, we relocate our production to other facilities worldwide to ensure an ongoing business and the ability to deliver our customers. These additional costs are also included in our assessment.</p>
Chronic physical	Relevant, always included	<p>For many regions worldwide, water scarcity is one of the major chronic effects of physical climate change. In case of Symrise, this can have negative effects on our direct operations and on our supply with agricultural raw materials.</p> <p>As an example, water scarcity can lead to business interruptions. We have multiple facilities in water stressed regions, for example in Egypt and Chennai, India. As mean temperatures are going to increase due to climate change, tensions between the local populace and the industry about the distribution of the limited available fresh water are expected to intensify. These tensions also represent reputational risks, which Symrise strictly wishes to avoid. For the production the physical risk may eventually force Symrise to shut down facilities during times of extreme water scarcity. This can obviously reduce our revenues leading to a negative climate related impact on our EBIT</p>

## C2.3

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

### C2.3a

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

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#### Identifier

Risk 1

#### Where in the value chain does the risk driver occur?

Upstream

#### Risk type & Primary climate-related risk driver

Chronic physical

Rising mean temperatures

#### Primary potential financial impact

Increased indirect (operating) costs

#### Company-specific description

We purchase a lot of agricultural goods such as tomatoes and vanilla. These materials are used to produce extracts, which can be used to boost taste and odour. These agricultural goods are usually sourced from water-stressed countries, like USA and Madagascar. Rising temperature may result in shrinking harvests for our suppliers due to water scarcity. The resulting shortage on the market may lead to increasing prices and as a result to increasing operational costs for us. Lower yields in agriculture farming for raw materials such as citrus and vanilla are also related to other climate change related patterns, like floods or hurricanes. Increasing prices on our supply side will result in a lower EBITDA margin for us.

#### Time horizon

Medium-term

**Likelihood**

More likely than not

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

60,000,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

To assess our climate related supply chain risk we assess respective price increases which occurred in the past. On this basis, we also estimate potential future price volatilities driven by climate change. Example Vanilla: Madagascar provides 80% of the vanilla used throughout the world. The tropical cyclone Enawo hit Madagascar in 2017 and damaged thousands of vanilla plants, creating a worldwide surge in prices. The price for vanilla bean pods has reached a record high of more than 600 /kg. We assess this risk by multiplying purchased volume of vanilla with an estimated price of 600 /kg. Similarly, as another example, hot and dry summers in Europe and Africa might boost the price of key strategic agricultural raw materials. Vegetables like onions, garlicks, carrots, beetroots, celeriacs, fruits like citrus, bergamot, oranges, cherries, strawberries, bananas, coconuts, cranberries, herbs like cloves, mint, parsley, camomile and various types of cereals, just to name a few. Symrise has approx. 200 agri- and aquacultural raw materials which are used in larger quantities. In order to estimate our total exposure

we have to add up the potential climate related cost effects for all the above mentioned agri- and aquacultural raw materials exposed to such effects calculated by purchased volumes multiplied by an estimated price increase. This leads to an estimation of our "raw material costs at climate risk" of some 60 million .

Calculation: 200 agri- and aquacultural raw materials which are used in larger quantities x 300,000 = 60 million .

Our calculation is based on the example of onions:

Hot summers in Germany and the resulting risk for drought might lead to lower production volumes of onions, which leads to reduced volumes available and increasing prices. For onions, this risk can be estimated with approx. 300,000 .

Calculation:

7,000 tons of onions farmed for Symrise p.a.

2,000 tons estimated loss of approx. 30% due to drought (happened in 2018)

On costs for 2,000 tons of onions from the market (not contracted but to be sourced at higher prices) approx. 130-150 €/to resulting risk = 2,000 x 150 = 300,000

The prices for Symrise farmed / contracted onions are fixed by time of planting, not during harvest. Prices are relatively safe for us, risk born by farmers ("no risk" for Symrise).

For agri- and aquacultural raw materials which we use in smaller quantities we do have appropriate insurance policies.

### **Cost of response to risk**

2,400,000

### **Description of response and explanation of cost calculation**

We can't avoid the risk completely, but we try to reduce the impact. Thus our strategy is to identify significant climate drivers in our portfolio and use this information to take appropriate actions as shown in the following CASE STUDY for onions.

Situation: Increasing costs for onions are related to lower yields in agricultural farming due to climate change related effects.

Task: The impact of increasing costs needs to be mitigated.

Action: To manage this we conduct different activities. We work closely with our supplier and establish long-term agreements to make sure that even if the availability of agricultural products shrinks, we are still able to obtain our raw materials for a predefined ceiling price: e.g. the price for onions is fixed by contract at the time of plantation. To reduce the effect of one local extreme weather event we have suppliers all over the world. This is part of our general diversification approach regarding our sourcing strategy – thus without additional costs. But we maintain dedicated stock levels for onions (120 tons) to be able to react to fluctuations in availability: Thus even if a year's harvest falls 25% short we still have enough volumes to compensate for these losses.

Result: All these measures reduce the financial impact on operating costs due to higher market prices and allow us to have a secured financial and operational planning.

The related costs for management is an estimation of costs, based on the costs for maintaining dedicated stock levels.

How can we compensate / which risk management is in place?

Normally onions are contracted in a volume enabling 15 month reach. Hence, even if a crop is 25% short, we have enough volumes to compensate these losses in volumes.

Product is shelfstable (no risk), storage costs are approx. 100 €/to p.a. --> 12,000 € p.a. for 120 tons onion juice concentrate.

Calculation: 200 agri- and aquacultural raw materials which are used in larger quantities

x 12,000 = 2.4 million .

## **Comment**

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### **Identifier**

Risk 2

### **Where in the value chain does the risk driver occur?**

Direct operations

### **Risk type & Primary climate-related risk driver**

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

### **Primary potential financial impact**

Increased capital expenditures

### **Company-specific description**

We have facilities located in Charleston (South Carolina), Colonels Island (Georgia) and Jacksonville (Florida) all situated in a region of the US that is frequently menaced by tropical storms. From such events there is substantial risk for damage. This may result in both costs for repairs and a loss of profit from discontinued production.

As the Atlantic warms up due to climate change, the formation of hurricanes is facilitated, increasing both the frequency of occurrence and the intensity of tropical storms. A higher number of storms per year results in a higher probability of damage to our facilities.

### **Time horizon**

Short-term

**Likelihood**

Very likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

1,200,000

**Potential financial impact figure – maximum (currency)**

2,800,000

**Explanation of financial impact figure**

The reported financial impact is the sum of two effects: The first impact is constituted by the fixed costs that are tied to a precautionary shutdown of the three sites. These costs amount to 1.2 million €. The second impact accounts for repairs and loss of profit. Its scale depends on the actual gravity of the disruption, and is estimated at up to 1.6 million €.

We therefore calculate the range of the potential financial impact as follows: The minimum value corresponds to the precautionary shutdown of the sites (factor 1 = 1.2 million €). For the maximum value, we consider effects from both factors (=sum of factor 1 and 2 = 2.8 million €).

On a side note, we would like to point out that the reason why these values are relatively small is that we already have a management strategy for this risk in place, and we have accounted for its mitigating influence in the latest computation of the potential impact figures.

**Cost of response to risk**

420,000

### **Description of response and explanation of cost calculation**

Because of tropical storms, our facilities worldwide are affected due to delayed production and damages. The response is to have available sufficient production capacities in other parts of the world to ensure that the decrease production is covered. The following CASE STUDY addresses a particular situation in South Carolina, USA.

Situation: Tropical Storms in South Carolina occur regularly and affect in a negative manner our profits due to delayed production and damages.

Task: We need to guarantee our production also in times where some facilities are not available for production. Moreover we need to hedge against costs from repairs.

Action: On the one hand side we create and maintain redundant production capacities worldwide in order to be able to compensate for locally/regionally decreased availability of capacities: E.g. our site in Charleston manufactures Menthol-I (synthetic menthol). If production is disrupted there we may increase production at Holzminden, Germany.

This is possible as the Holzminden production capacity has been expanded just recently. Such scenario of shifts in production volumes also entails additional shipping costs as Menthol-I needs to be transported overseas to serve our US market supply.

On the other hand we use insurance to cover costs for related repairs after natural disasters.

Result: We are effectively able to limit related cost risks for our business.

These costs are due to transport costs from Germany to the USA as described below:

Example menthol production: In the USA about 1000 tons of menthol p.a. are produced for the North and Latin America region. A hurricane would shut down the plants in Charleston for about 4 weeks including shutdown, repair and restart. I.e. 1000 tons / 12 months = 84 tons/month. 84 tons menthol from DE to US by sea container (max. 14 tons per sea container) are 6 sea containers. Transport costs sea = 0.5 /kg. I.e. 84,000

kg\* 0.5 /kg = 42,000 .

In addition to menthol, 9 other important raw materials are produced in Charleston, which would have to be treated according to the same process. So 10 important raw materials \* 42,000 = 420,000 .

## **Comment**

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### **Identifier**

Risk 3

### **Where in the value chain does the risk driver occur?**

Direct operations

### **Risk type & Primary climate-related risk driver**

Chronic physical

Rising mean temperatures

### **Primary potential financial impact**

Decreased revenues due to reduced production capacity

### **Company-specific description**

We have multiple facilities in water stressed regions, for example in Egypt and, India. As mean temperatures are going to increase due to climate change, tensions between the local populace and the industry about the distribution of the limited available fresh water are expected to intensify. These tensions also represent reputational risks, which Symrise strictly wishes to avoid.

For the production the physical risk may eventually force Symrise to shut down facilities during times of extreme water scarcity.

### **Time horizon**

Long-term

### **Likelihood**

Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

45,000,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

The financial impact is an estimated figure for loss in terms of the maximum annual sales value from products containing materials, compounds or formulations from our previously mentioned facilities in Egypt and, India where we see substantial risks. Their potential combined impact stands at 45 million .

We have singled out Chennai as the facility with the most serious potential implications. From the 45 million , 40 million fall on India, while Egypt accounts for the remaining 5 million. The figures we are disclosing represent the potential consequence of an entire shutdown of these sites – as a proxy for cost calculation, as for the worst case scenario.

**Cost of response to risk**

360,000

**Description of response and explanation of cost calculation**

As stated before we have multiple facilities in water stressed regions, this means that water availability is susceptible to droughts. The course of action to respond to this particular risk is to identify regions where other water suppliers can be contracted.

Although several regions were mentioned in the description of the risk, the CASE

STUDY will address only the water scarcity in our facility in Chennai, India.

- Situation: Our production in Chennai/India is extremely water dependent and thus potentially affected by chronic water scarcity.

- Task: We had to identify and contract alternative water supplies from more remote sources, which are not under water stress.

- Action to secure the water supply of our site in Chennai, we have applied the following process: First we searched for suitable regions not under water stress. Using the WBCSD Global Water Tool, MapleCroft Risk Indices and subnational risk data from public authorities, we have identified such areas in northern India not endangered by water scarcity. We then hired an external company to deliver water from there to our site.

- Result: The required water is supplied by a private company that sources water from these non-stressed water bodies. Delivery to Symrise (and other water users within respective industrial area) is done by truck. Contracts are valid for next 5 years which means the water supply is secured over this timeframe.

For example in Chennai, this price premium is 1 /cubic meter Water. We source some 25,000 cubic meters from alternative suppliers, which leads to additional cost of 25,000 /year.

Furthermore, Symrise India drilled wells in order to create own water resources. We collect the rainwater and recharge the wells again and again. This will contribute significantly to maintaining the groundwater level. The respective annual costs are 15,000 . In sum for Chennai:  $15,000 + 25,000 = 40,000$

Calculating the cost of response for all our other sites in a similar way leads to 320,000 /year in total. Thus our total costs to response to this risk are:  $40,000 + 320,000 = 360,000$  .

### Comment

## C2.4

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

### C2.4a

**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

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**Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Downstream

**Opportunity type**

Markets

**Primary climate-related opportunity driver**

Other, please specify

hotter summers allow for more production of specific products

**Primary potential financial impact**

Other, please specify

Increased revenues due to growing reputation

**Company-specific description**

Consumers are expected to focus on climate friendly products. Thus, climate performance is of high and ever growing importance for our key customers – e.g. the world leading cosmetic companies. Symrise produces high quality products (fragrances, flavors, cosmetic ingredients and aroma chemicals as well as sensorial and nutritional solutions for the perfume, cosmetic, pharmaceutical, food, beverage, pet and

baby food industries) in a very sustainable way, e.g. with low carbon footprints. Our customers (B2B) concentrate on climate friendly ingredients as input to their products. This leads to a substitution of products, shifting from carbon intensive to climate friendly ones. If we perform better than our competitors and manage to inform potential clients in a convincing way of our climate related performance, we expect our market share to grow from higher demand for our lower emissions products and thereby also to increase our revenues.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

20,400,000

**Potential financial impact figure – minimum (currency)****Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

Currently, up to 8% of our turnover (equalling 272 million EUR) is related to customers who explicitly pay attention to climate issues and ask us to participate in the Supply Chain CDP. We already expect a sales growth of 6% for climate sensitive products, but we anticipate that we can boost this value by one quarter to 7.5% ( $6\% * 125\% = 7.5\%$ ): We tackle this by meeting the high requirements for core listings, including sustainability

criteria, and aim at supporting our customers in fulfilling their own sustainability agenda.

The financial impact figure is calculated as the annual growth in sales volumes with climate sensitive customers. It is computed by multiplying the current 272 million EUR in turnover with 7.5%. This results in an annual impact figure of 20,4 million EUR.

### **Cost to realize opportunity**

1,100,000

### **Strategy to realize opportunity and explanation of cost calculation**

Our method to manage this opportunity has 5 steps (For details see "Comment" below)

1. Systematic reduction of energy consumption and emissions.
2. Increase transparency
3. Identification of stakeholder needs
4. Initiation of program strategies
5. Implementation of long term projects

CASE STUDY for an implemented emission reduction:

Situation : Production of menthol from natural materials (peppermint) is very energy intensive.

Task: Reducing related emissions.

Action: Production of synthetic menthol (L-Menthol) causes 90% less CO<sub>2</sub> per produced volume than that of natural peppermint. Therefore, we regularly increase our production capacity for L-Menthol.

Result: We avoid approx. 500 kt CO<sub>2</sub>/year.

Costs for realization:

In January and February 2019, Symrise has doubled its production capacity for menthols in Charleston, USA. The company is thereby further expanding its leading

position for this product worldwide and ensuring reliable supply security at a consistent high quality. The outlook is good. Demand for high-quality menthol products, in particular for dental and personal care, has been growing constantly for years. Symrise has been producing the nature-identical L-menthols since 1974. The total investment was 30 million EUR.

Additionally, the sum of costs for all additional research efforts amounts to approx. 100 k EUR per year. Costs sum up to a total of 30.1 million EUR.

We apply to this investment a depreciation period of 30 years which results in annual costs to realize this opportunity of 1.1 million .

## **Comment**

Further explanation of our 5-step approach:

1. Systematic reduction of energy consumption and emissions.
2. Increase transparency: Assessment of current portfolio to ascertain current impact & discover carbon friendly alternatives.
3. Identification of stakeholder needs: We evaluate the materiality of our identified sustainability aspects annually. Business Unit and Key Account management gets regular customer feedback regarding requirements. This input is used for the materiality matrix & our sustainability agenda.
4. Initiation of program strategies: Goals and policies are developed to ensure consistency with internal & external communication. Related actions are addressed through our sustainability board to all related areas & locations.
5. Implementation of long term projects: All our R&D efforts are managed globally and parallel to expected project returns, since 2012 we have a pipeline sustainability score.

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## **Identifier**

Opp2

**Where in the value chain does the opportunity occur?**

Downstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Shift in consumer preferences

**Primary potential financial impact**

Other, please specify

Increased revenue through higher demand for climate related products

**Company-specific description**

Global warming means and especially hot summers lead to an increasing demand for some of our products. For instance, one division of the Scent&Care section is Cosmetic Ingredients. One of its core business units are UV-filters used in sunscreens. With the future increase of hot summers, and the increasing awareness for skin cancer due to UV-rays, an increasing volume of UV-filters will be demanded by the market. Global warming means also an increasing demand for other products like lipsticks, hand creams, lotions, etc. that contain such ingredients. This may allow us to increase our turnover and profitability.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

14,000,000

**Potential financial impact figure – minimum (currency)****Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

When it comes to the quantification of the climate change driven demand effects, the challenge is to separate them from other demand drivers. For this we correlate climate data (e.g. number of hot summer days in a given year and country) and our sales volume for specific products. For the time being, we estimate that at least 10% of the sales volume of our Scent&Care division (in total 2019: 1,419 million EUR) is attributable to products with climate related demands. In hot summers, this demand rises by some 10%. Thus we estimate the climate effect on our revenues to be some 1,419 million EUR \* 10% \* 10% = 14 million EUR. However, the real effect might be somewhat higher, as climate related effects to other business divisions has not been taken into account

**Cost to realize opportunity**

5,000,000

**Strategy to realize opportunity and explanation of cost calculation**

One of our strategy pillars is related to our product portfolio. This portfolio is continuously benchmarked and evaluated by external consultants but also of course our business units and key account management which leads to adjustments of production capacity, investments, products with higher profitability and finally more profitability. This includes production levels of climate sensitive products such as UV-filters. This allows us not only to fulfil our contracts, but also to respond to additional demand and to capitalize on related opportunities.

CASE STUDY:

Situation: In hot summers demand for sunscreen products increases.

Task: We have to optimize our production facilities in order to meet this demand.

Action: Respective facilities are not only operated 24/7, but are further optimized by our Maintenance-Teams. Maintenance cycles are optimised to meet the seasonal demand.

One major product of our BU Cosmetic Ingredients , Hydrolite <sup>TM</sup>5, was transferred to our Charleston / USA production facility from a supplier in order to increase production capacity and at the same time to increase energy efficiency and decrease supply-chain risks.

Result: We are able to increase our production volume in times when demand is increased. Hydrolite <sup>TM</sup>5 is currently trending and meet the demands of today's customers and consumers and is by the way produced from a byproduct from sugarcane

Our cost indication is based on a recent investment in capacity extension in Charleston of 20 million . We estimate that some 25% (5 million ) of this investment is linked to production capacity increased to meet the higher demand for climate related products.

## Comment

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### Identifier

Opp3

### Where in the value chain does the opportunity occur?

Direct operations

### Opportunity type

Energy source

### Primary climate-related opportunity driver

Use of new technologies

### **Primary potential financial impact**

Reduced indirect (operating) costs

### **Company-specific description**

The production of fragrances, flavors and cosmetic ingredients demands a lot of energy.

A large portion of this energy enters production processes in the form of process steam.

In this context there may be multiple opportunities to reduce energy demand or to increase energy efficiency. Currently one such measure of considerable size has been implemented in the reporting year. In the following we will present that example.

At our site in Holzminden, the boilers that produce the aforementioned steam are mostly fired with oil, but to a small fraction (25% of heating value) with waste from our production processes. This waste mostly consists of solvents with aromatic residues and a high energy content.

We see a chance in raising the amount of waste materials used as fuel and lowering the share of burned oil. Specifically, we plan on replacing one boiler with a special design that can use 100% waste as fuel.

This has multiple advantages. Firstly, we reduce the volume of oil we need to buy as fuel. Secondly, we lower the costs for waste treatment, and reduce the risk of insufficient disposal capacities significantly, as less waste leaves our site. Bearing in mind that the waste would have been incinerated anyways, the reduction of burned oil implies a reduction of our total emissions. We avoid further emissions as less oil and waste have to be transported.

Additionally, we benefit from a waste-fired boiler through the EU-ETS. Because this boiler uses waste as fuel it will be exempted from the ETS. Moreover, as it will generate considerable amounts of steam we can downsize our conventional oil-fired boilers. In fact, we will be able to limit them to thermal input levels beneath 20 MW, low enough to be exempted from the ETS, too.

All in all, this is a chance that allows us to lower both operational including compliance

costs and our total emissions.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

5,000,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

The reported financial impact figure as per example is the sum of three effects:

The first are the reduced operational cost due to a lower consumption of oil as primary energy carrier. We estimate the effect by multiplying the saved oil volume by the forecasted oil price. Note that this first parameter is based on the respective caloric values, i.e. not volumes or mass.

We estimate the economical repercussion of this effect to be 2 million :

The second effect is directly attributed to the EU-ETS: As stated before, our waste incineration plant allows us to downsize our existing oil-fired boilers. Their rated thermal input will shrink to <20 MW, the threshold for ETS inclusion. As a result, they will be excluded from the ETS and the respective shortage of EUAs and related costs will no

longer accrue. We calculate the related compliance costs as the amount of our annually purchased certificates for compliance multiplied by the estimated average certificate price in ETS phase IV. This results in 1 million in savings.

The third effect relates to the saving of waste disposal and related transportation of the waste which is to be burnt in the new facility. These sum up to 2 million .

The sum of all effects is a cost reduction of some 5 million per year.

### **Cost to realize opportunity**

1,000,000

### **Strategy to realize opportunity and explanation of cost calculation**

The process to realize this opportunity is ongoing. Currently, we are awaiting permission to construct the facility.

The respective investment volume, (i.e. the cost to realize this opportunity) is 30 m . A major part of this (some 15 m ) is due to the fuel preparation facility consisting of tanks for the fluid waste and for conventional fuels and a mixture unit. Investment costs for the boiler are some 10 m . Costs for project development have been some 5 m .

### **CASE STUDY:**

**Situation:** At our site in Holzminden, the boilers are mostly fired with oil, but to a small fraction (25% of heating value) with waste from our production processes. This waste mostly consists of solvents with aromatic residues with high energy content.

**Task:** The profitability of the waste incineration plant had to be analysed.

**Action:** We evaluated the savings related to waste disposal and transportation, fuel and EUAs. Investment costs have been estimated using of offers based on technical specifications taking into account the physical and chemical property of our waste

elaborated by our technical experts. Finally, weighted average costs of capital have been determined by our financial department.

Result: The profitability of the described project has been proofed. On this basis our board has approved the project.

The COST TO REALIZE this opportunity is the sum of all investment costs which are 30 million , 75 % are related to the construction of the waste combusting boiler, the resulting 25% are due to the fact that the site had to be adapted to the new boiler and also the rebuilding of o was required for the optimal operation of the site.

We apply to this investment a depreciation period of 30 years which results in annual costs to realize this opportunity of 1 m .

#### Comment

## C3. Business Strategy

### C3.1

**(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?**

Yes, and we have developed a low-carbon transition plan

### C3.1a

**(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?**

Yes, qualitative and quantitative

## C3.1b

**(C3.1b) Provide details of your organization's use of climate-related scenario analysis.**

Climate-related scenarios and models applied	Details
<p>2DS</p> <p>Nationally determined contributions (NDCs)</p> <p>Other, please specify</p> <p>Roadmap "treibhausgasneutrale Chemie in Deutschland", i.e. sector specific decarbonisation roadmap published 2019 by VCI (German Chemical Industry Association)</p>	<p>We have used qualitative scenario analysis for the further development of our emission reduction strategy.</p> <p>The AREAS CONSIDERED have been our own direct operations worldwide. The TIME HORIZON has been up to 2050, as we intend to become carbon-neutral by then the latest.</p> <p>We have IDENTIFIED several suitable SCENARIOS for our purpose:</p> <p>The IEA 2DS scenario has been used to understand the global process of decarbonisation and its implications for the chemical industry as a whole worldwide. To deal more specifically with the specialized chemicals industry, the "Roadmap treibhausgasneutrale Chemie in Deutschland" by VCI (German Chemical Industry Association) has been analysed. It contains several decarbonisations pathways, as well as respective requirements regarding policy regulations and technology developments.</p> <p>We have adopted ASSUMPTIONS to company specific data and considered specific INPUTS, such as our revenue planning and our technology base. Thus, in the next step future policy regulations have been assessed by analysing, the EU's NDC, the EU Green Deal and emerging regulations in Germany, such as the upcoming</p>

national emission trading scheme (“BEHG”) supplementing the EU-ETS. This way of approaching and discussing scenarios along real developments (ongoing or yet to emerge) is characteristic for our ANALYTICAL METHOD. Furthermore, we have discussed the development of the markets for green power certificates and carbon offsets.

**SUMMARY OF THE RESULTS:** For Symrise energy efficiency is crucial as we will remain heavily dependent on energy usage, especially heat (75%) and power (25%). The VCI roadmap expects efficiency gains to be 2% p.a. for the specialized chemicals industry in Germany. This also applies to Symrise. Our intended revenue growth will easily over-compensate reductions, underlining the necessity of green power usage for us in order to reduce our emissions quickly.

**HOW THIS HAS INFORMED OUR STRATEGY:** Results generally confirm our existing strategy which we will now pursue with even higher ambition. To this aim our board has taken the decision to shorten the time for our science based target to be reached by five years – from 2030 to 2025.

Furthermore, Symrise aims to become carbon neutral by 2050 the latest.

With regard to steam production, for now and at least up to the late 2030s we conclude gas fired cogeneration as well

as energetic usage of waste not being suitable for circular-economy-processes and of solid biomass to be the technology of choice. Later on, green hydrogen, synthetic fuels and direct heating by green power have to replace fossil fuels. Furthermore, we are running-up the purchase of renewable electricity and examine a long term procurement strategy by PPAs. In order to increase our energy efficiency we will pursue a comprehensive analysis based on our energy management system ISO 50001. In particular, with a focus on reducing our own fossil based energy demand, we will review the application of advanced technologies and related cooperation with suppliers. We will also invest in R&D to optimise processes. In order to accelerate efficiency related investment we will reduce internal hurdle rates such as required IRRs. Doing so, we use our German production sites as a kind of “pilot case” for the development of our global activities.

#### CASE STUDY:

SITUATION: Globally, our Scope 2 emissions have in 2019 made up 33% of our total scope 1 and 2 emissions.

TASK: Reduction of Scope 2 to zero in 2025.

ACTION: A strategy for ramping up our sourcing of CO2 free power has been defined. We started in Germany by sourcing tradeable instruments, i.e. EU- GoOs.

Furthermore, our strategy foresees buying I-RECs in the US, France, Brazil, Mexico and Singapore.

	<p>RESULT: Our strategy has been confirmed by the board.</p> <p>Thus, we have stated executing it. In 2019, 24.1 (2018: 18.5%) of our global power consumption has been from renewable sources.</p>
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### C3.1d

**(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>One of our strategy pillars is related to our product portfolio. This portfolio is continuously benchmarked and evaluated by external consultants but also of course our business units and key account management which leads to adjustments of production capacity, investments, products with higher profitability and finally more profitability.</p> <p>Our strategy regarding products and services has twofold been influenced by climate-related risks and opportunities:</p> <p>(A) As clients reveal an increased demand for sustainable manufactured products we aim to meet this demand.</p> <p>(B) As we also experience an increased demand for products such as sunscreen due to rising temperatures, we aim to meet this demand as well.</p> <p>The TIME HORIZON of this strategy is current to long term,</p>

		<p>from now on until 10 years. We are already executing this strategy and do not expect it to change in the foreseeable future.</p> <p><b>CASE STUDY:</b></p> <p><b>SITUATION:</b> Scent&amp;Care segment the Cosmetic Ingredients division is significantly affected. One of its core products are sunscreens. With longer and hotter summers an increasing volume of sunscreens is needed. We have already experienced a respective increase of sales volume, which we at least partly attribute to climate change: In hot summers demand for sunscreen products increases.</p> <p><b>TASK:</b> We have to optimize our production facilities in order to meet this demand.</p> <p><b>ACTION:</b> Respective facilities are not only operated 24/7, but are further optimized by our Maintenance-Teams. Maintenance cycles are optimised to meet the seasonal demand. One major product of our BU Cosmetic Ingredients was transferred to our Holzminden production facility from a supplier in order to increase production capacity and at the same time to increase energy efficiency and decrease supply-chain risks. Our cost indication is based on a recent investment in capacity extension in Charleston of 20 m . We estimate that some 25% of this investment is linked to production capacity increased to meet the higher demand for climate related products.</p>
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		RESULT: We are able to increase our production volume in times when demand is increased
Supply chain and/or value chain	Yes	<p>Our strategy regarding our supply chain (i.e. our upstream value chain) has been influenced by climate-related risks and opportunities as follows:</p> <p>(A) As we have experienced the risk of increased prices for agricultural raw materials through bad harvests, e.g. due to water scarcity, we have defined ways for closer cooperation with our suppliers.</p> <p>(B) As clients reveal an increased demand for sustainable manufactured products we aim to meet this by sourcing sustainable manufactured raw materials. Thus, we are member of the CDP supply chain program.</p> <p>The TIME HORIZON of this strategy is current to long term: We are already executing this strategy and do not expect it to change in the foreseeable future.</p> <p>CASE STUDY:</p> <p>Situation: Scope 3 emissions of the category purchased “goods and services” contribute to approximately 90% to our overall carbon footprint.</p> <p>Task: Encourage our key suppliers to set emission reduction targets. We have committed ourselves as part of our approved Science Based Target (SBT) that 80% of our key</p>

		<p>suppliers will implement GHG reduction targets by 2020.</p> <p>Action: In 2017, we began working with the CDP Supply Chain Program. In 2019, we asked 125 key suppliers to participate in the CDP supply chain program and to report there on their targets. For the purpose of this target, key suppliers are those suppliers providing Symrise with carbon intensive raw materials. In total, key suppliers are responsible for 60% of our annual purchasing volume. As an alternative they can also report their targets via EcoVadis. Furthermore, we have organized several seminars for our suppliers in cooperation with the CDP. Currently we run an encouragement-campaign.</p> <p>Result: The fact that we track the emission reduction targets of our key suppliers encourages them to set such targets. This in turn leads to considerable emission reductions. Their participation in the CDP supply chain program further enhances their awareness for climate change issues. Compared to 2018, the number of returns in the climate change category increased from 58 to 64 in the reporting year.</p> <p>An increased number of suppliers reported having an absolute and/or intensity emissions targets, from 31 suppliers (53%) in 2018 to 40 suppliers (61%) in 2019.</p>
Investment in R&D	Yes	<p>One of our main strategic targets is to heavily reduce our CO2 footprint. One the one hand, this is due to the fact that clients reveal an increased demand for sustainable</p>

		<p>manufactured products. On the other hand, we aim to reduce costs for CO2 certificates and energy.</p> <p>To achieve this, we inter alia continuously invest in R&amp;D to improve energy and resource efficiency. In the last year we invested approximately 20.4 million into climate related R&amp;D projects.</p> <p>The TIME HORIZON of this strategy is current to long term: We are already executing this strategy and do not expect it to change in the foreseeable future.</p> <p><b>CASE STUDY:</b></p> <p><b>SITUATION:</b> The production of menthol from natural materials (peppermint) is highly energy intensive while synthetic menthol can be produced with much less CO2 emissions.</p> <p><b>TASK:</b> Make synthetic menthol that contains a mix of left-turning and right turning molecules suitable for consumption. Only the first ones L-(-) Menthol are contained in natural peppermint and fulfil this requirement.</p> <p><b>ACTION:</b> we have financed R&amp;D activities to develop a process engineering a method to separate left-turning menthol. We have registered a patented method and based on that started to invest more than 60 m into the developed technology at industrial scale in Germany and the USA.</p> <p><b>RESULT:</b> With our newly developed technology we can</p>
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		<p>meet our clients demand in a climate friendly way. The new method causes 90% less CO2 per produced volume than that of menthol from natural resources.</p>
Operations	Yes	<p>One of our main strategic targets is to heavily reduce our CO2 footprint. One the one hand, this is due to the fact that clients reveal an increased demand for sustainable manufactured products, we aim to meet this demand. One the other hand, we aim to reduce costs for CO2 certificates and energy.</p> <p>To achieve this, our strategy is to reduce emissions by reduction of our energy consumption and carbon footprint in a systematic way. This changes our operations by making them less carbon intensive. The same effect applies to the ongoing improvement process in context of our running ISO 50001 Management System. Global emissions reduction targets, in particular our new Science Based Target ("SBT"), are subdivided through the entire organization and managed locally on each manufacturing site. Local reviews are aggregated to global level and signed off by our CEO.</p> <p>In 2018 we managed to reduce our scope 3 emissions by more than 250k tons of CO2 while we managed to keep scope 1 and 2 emissions at about the same level. This was managed through the investment in a significant capacity increase for L-Menthol that allowed us to substitute the more carbon intensive natural menthol.</p>

		<p>The TIME HORIZON of this strategy is current to long term: We are already executing this strategy and do not expect it to change in the foreseeable future.</p> <p>CASE STUDY:</p> <p>SITUATION: Globally, our Scope 2 emissions have in 2019 made up 33% of our total scope 1 and 2 emissions. This mainly due to our demand for electricity.</p> <p>TASK: We aim to reduce our global Scope 2 emissions to zero in 2025.</p> <p>ACTION: A strategy for ramping up our sourcing of CO2 free power has been defined. We started execution of this programme in Germany by sourcing respective tradeable instruments, i.e. EU-guarantees of origin (“GoOs”) In 2018 and 2019 we sourced GoOs. Thereby we have supported the upgrade of wind energy facilities at German-Polish border.</p> <p>Furthermore, our strategy foresees to roll out our sourcing of renewable energy by buying I-RECs in the US, France, Brasil, Mexico and Singapore.</p> <p>RESULT: Our strategy has been confirmed by the board. Thus, we have stated executing it. In 2019, 24.1% (2018: 18.5%) of our global power consumption has been from renewable sources. We will increase this ratio in the future. Symrise has also become a member of the RE 100 initiative.</p>
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## C3.1e

**(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Access to capital Assets Liabilities	<p>In accordance with the TCFD recommendations, the financial planning performed by Symrise takes climate related effects into account. The respective planning elements are of course interdependent and have been considerably influenced by climate related risks. Thus, the effects described below for revenues (which we describe here “pars pro toto”) are closely related to effects in other elements, especially in Capital expenditures and Capital allocation.</p> <p>Our financial planning has a TIME HORIZON of 6 years and applies to all elements influenced.</p> <p>Climate change related effects have been factored into our financial planning and HAVE INFLUENCED our planning in several ways as we consider e.g. effects on increasing demand for some of our products (due to longer and hotter summers), effects from eventual unavailability of production sites (due to physical events like tropical storms) or changing demand by our customers who consider climate aspects in the product properties they buy.</p> <p>CASE STUDY ON REVENUES:            Situation: Tropical Storms in South Carolina occur regularly and affect in a negative manner our profits due to delayed production and damages.</p>

		<p>Task: We need to guarantee our production also in times where some facilities are not available for production. Moreover we need to hedge against costs from repairs, helping us to hedge against effects on our revenues.</p> <p>Action: On the one hand side we create and maintain redundant production capacities worldwide in order to be able to compensate for locally/regionally decreased availability of capacities: E.g. our site in Charleston manufactures Menthol-I (synthetic menthol). If production is disrupted there we may increase production at Holzminden, Germany. This is possible as the Holzminden production capacity has been expanded just recently. Such scenario of shifts in production volumes also entails additional shipping costs as Menthol-I need to be transported overseas to serve our US market supply. On the other hand we use insurance to cover costs for related repairs after natural disasters.</p> <p>Result: We are effectively able to limit related cost risks on the revenues.</p>
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### C3.1f

**(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

**Aspects of climate change considered in the business strategy and objectives of Symrise:**

As business within the flavour and fragrance industry, Symrise is highly dependent on the supply with natural resources. These originate from various ecosystems all over the world including North-American forests as well as Spanish agriculture. In the recent years we have seen adverse impacts from climate change on all these global ecosystems. Our raw material supply is threatened by heavy rain fall and flooding as well as by droughts and water scarcity, extreme temperatures and severe storms. As climate change can thus endanger our core

business, we are factoring it strongly in our business strategy and objectives. On the one hand Symrise must become more resilient. Therefore, we first of all are strongly connecting with our suppliers and support them to build up own resistance strategies such as water management systems. Secondly we are developing new technologies to substitute natural raw material by synthetic ones with absolutely same qualities. An example would be the natural menthol which we are largely substituting by an indistinguishable synthetic version. Furthermore, we are striving to meet our own responsibilities in terms of climate change by strict emission reduction targets.

**Emission reduction target:**

In accordance with our Science Based Target (SBT), we have set the objective to decrease our carbon footprint by 50 % until 2025 compared to 2016. Therefore, our Scope 1+2 emissions per mio value added will be reduced annually by 5%. Regarding the reduction of Scope 3 emissions we are engaging with our suppliers and request them to set up own climate related targets or even SBT conform strategies.

**Most substantial business decision:**

Initially, our SBT target year was 2030. Due to the urgency of drastic emission reduction in order to meet the 2 degree goal of the Paris Agreement, Symrise decided to lower the target year down to 2025. This results in an even stricter reduction pathway implemented.

By revising this target we take note of and support the international momentum for action as seen in recent developments like the “Fridays-for-Future” movement and the ever more intense policy debates on how to find solutions to tackle the climate related challenges in Germany, the EU as well as world-wide. On the investment side this ambition is mirrored in two recent investments in a capacity extension for L-menthol production. At Holzminden this step helped us reduce our all-over emissions from menthol production through replacement of the natural product (with high scope 3 emissions) by the much less carbon intensive synthetic product. The same substitution effect also applies to a congruent investment decision in 2018 that led to the start-up of a capacity extension at our L-menthol production facility in Charleston (USA).

## C4. Targets and performance

### C4.1

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Both absolute and intensity targets

#### C4.1a

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

---

**Target reference number**

Abs 1

**Year target was set**

2016

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1+2 (market-based)

**Base year**

2016

**Covered emissions in base year (metric tons CO<sub>2</sub>e)**

325,490

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

**Target year**

2030

**Targeted reduction from base year (%)**

18

**Covered emissions in target year (metric tons CO<sub>2</sub>e) [auto-calculated]**

266,901.8

**Covered emissions in reporting year (metric tons CO<sub>2</sub>e)**

321,641

**% of target achieved [auto-calculated]**

6.5695822708

**Target status in reporting year**

Underway

**Is this a science-based target?**

Yes, this target has been approved as science-based by the Science-Based Targets initiative

**Please explain (including target coverage)**

This was achieved through significant reductions in electricity consumption. Symrise HQ's in Germany/ Holzminden is using a new cogeneration of heat and power plant.

---

**Target reference number**

Abs 2

**Year target was set**

2019

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 3: Purchased goods & services

**Base year**

2019

**Covered emissions in base year (metric tons CO<sub>2</sub>e)**

3,368,704

**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

**Target year**

2030

**Targeted reduction from base year (%)**

15

**Covered emissions in target year (metric tons CO<sub>2</sub>e) [auto-calculated]**

2,863,398.4

**Covered emissions in reporting year (metric tons CO<sub>2</sub>e)**

3,368,704

**% of target achieved [auto-calculated]**

0

**Target status in reporting year**

New

**Is this a science-based target?**

Yes, this target has been approved as science-based by the Science-Based Targets initiative

**Please explain (including target coverage)**

On June 15, 2020, SBTi confirmed membership to the "Business Ambition for 1.5°C" campaign

## **C4.1b**

**(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).**

---

**Target reference number**

Int 1

**Year target was set**

2016

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 1+2 (market-based)

**Intensity metric**

Other, please specify

Metric tons CO<sub>2</sub>e per Euro value-added

**Base year**

2016

**Intensity figure in base year (metric tons CO<sub>2</sub>e per unit of activity)**

0.000317

**% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

100

**Target year**

2030

**Targeted reduction from base year (%)**

50

**Intensity figure in target year (metric tons CO<sub>2</sub>e per unit of activity) [auto-calculated]**

0.0001585

**% change anticipated in absolute Scope 1+2 emissions**

17.02

**% change anticipated in absolute Scope 3 emissions**

0

**Intensity figure in reporting year (metric tons CO<sub>2</sub>e per unit of activity)**

0.000263

**% of target achieved [auto-calculated]**

34.0694006309

**Target status in reporting year**

Underway

**Is this a science-based target?**

Yes, this target has been approved as science-based by the Science Based Targets initiative

**Please explain (including target coverage)**

This was achieved through significant reductions in electricity consumption. Symrise HQ's in Germany/ Holzminden is using a new cogeneration of heat and power plant.

---

**Target reference number**

Int 2

**Year target was set**

2019

**Target coverage**

Company-wide

**Scope(s) (or Scope 3 category)**

Scope 3: Purchased goods & services

**Intensity metric**

Other, please specify

Metric tons CO<sub>2</sub>e per Euro value-added

**Base year**

2019

**Intensity figure in base year (metric tons CO<sub>2</sub>e per unit of activity)**

0.002757

**% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

100

**Target year**

2030

**Targeted reduction from base year (%)**

53

**Intensity figure in target year (metric tons CO<sub>2</sub>e per unit of activity) [auto-calculated]**

0.00129579

**% change anticipated in absolute Scope 1+2 emissions**

17.02

**% change anticipated in absolute Scope 3 emissions**

0

**Intensity figure in reporting year (metric tons CO<sub>2</sub>e per unit of activity)**

0.002757

**% of target achieved [auto-calculated]**

0

**Target status in reporting year**

New

**Is this a science-based target?**

Yes, this target has been approved as science-based by the Science Based Targets initiative

**Please explain (including target coverage)**

On June 15, 2020, SBTi confirmed membership to the "Business Ambition for 1.5°C" campaign

## **C4.2**

**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Target(s) to increase low-carbon energy consumption or production

## C4.2a

**(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.**

---

**Target reference number**

Low 1

**Year target was set**

2018

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: energy carrier**

Electricity

**Target type: activity**

Consumption

**Target type: energy source**

Renewable energy source(s) only

**Metric (target numerator if reporting an intensity target)**

Percentage

**Target denominator (intensity targets only)**

**Base year**

2018

**Figure or percentage in base year**

18.3

**Target year**

2025

**Figure or percentage in target year**

100

**Figure or percentage in reporting year**

24.1

**% of target achieved [auto-calculated]**

7.0991432069

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

yes

**Is this target part of an overarching initiative?**

RE100

**Please explain (including target coverage)**

We continually invest in improved energy efficiency and in renewable electricity.

**C4.3**

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a**

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	7	58,640
To be implemented*	1	40
Implementation commenced*	2	68

Implemented*	6	61,500
Not to be implemented	0	0

## C4.3b

**(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.**

---

### Initiative category & Initiative type

Energy efficiency in production processes

Combined heat and power (cogeneration)

### Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)

20,000

### Scope(s)

Scope 2 (market-based)

### Voluntary/Mandatory

Voluntary

### Annual monetary savings (unit currency – as specified in C0.4)

2,400,000

### Investment required (unit currency – as specified in C0.4)

20,000,000

### Payback period

4-10 years

### Estimated lifetime of the initiative

>30 years

### Comment

New cogeneration of heat and power plant in Germany / Holzminden. It has started operation in 2017 at 70% capacity and reached full capacity in 2018. At full capacity it saves some 20.000t CO<sub>2</sub> per year. Due to the fact full capacity was achieved in 2018,

the 2.4 m annual monetary savings have been achieved since. In total 20 m have been invested by end of 2018 for the entire project.

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Waste heat recovery

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

2,000

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

160,000

**Investment required (unit currency – as specified in C0.4)**

1,500,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

>30 years

**Comment**

Recuperative Energy system

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

500

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

15,000

**Investment required (unit currency – as specified in C0.4)**

150,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

16-20 years

**Comment**

Replacement of steam injector in CIP system

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO2e savings (metric tonnes CO2e)**

25,000

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

3,000,000

**Investment required (unit currency – as specified in C0.4)**

30,000,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

&gt;30 years

**Comment**

Symrise is one of the biggest manufacturers of synthetic Menthol for more than 30 years. We have developed together with our main supplier a much more efficient manufacturing method and therefore we have already decreased our carbon footprint per produced kg Menthol by one third. The synthetic Menthol is a substitute to the natural one, which is extracted from peppermint plants by water steam distillation and a further crystallization process. We have calculated the carbon footprint of our synthetic product is up to 10 times lower than that of the natural material. In 2019 we doubled our production capacity in USA which helped avoid approx. 25,000 tons CO<sub>2</sub>.

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

10,400

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

600,000

**Investment required (unit currency – as specified in C0.4)**

5,000,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

>30 years

**Comment**

A new boiler in the USA has a 20% improved energy efficiency. This means that approx. 52000 tons of steam can be saved, which corresponds to a saving of approx. 10400 tons of CO2.

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO2e savings (metric tonnes CO2e)**

3,600

**Scope(s)**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

80,000

**Investment required (unit currency – as specified in C0.4)**

400,000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

>30 years

### Comment

Summary of various measures to increase energy efficiency in USA, Colombia, France and Germany. Examples are new boilers, LED lighting and state-of-the-art heat boxes.

## C4.3c

### (C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal finance mechanisms	When it comes to long term investments such as a new CHP, extension of menthol capacity, etc., energy efficiency and CO2 reduction measures are taken into account for the whole life time of the equipment. Every Capex approval contains a substantial evaluation of Carbon Emission reduction measures in tons and is finally signed and approved by the CEO and CFO.
Financial optimization calculations	Within the Capital Expenditure Process a "Green Factory" Toolbox is meanwhile implemented. Proposals as well as assessments of building engineers and experts from NGO's are incorporated to be available for the final approval of the board members.

## C4.5

### (C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

## C4.5a

### (C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

---

#### Level of aggregation

Group of products

#### Description of product/Group of products

Symrise is one of the biggest manufacturers of synthetic Menthol for more than 30 years. We expanded our manufacturing capacity significantly in the past. We have developed together with our main supplier a much more efficient manufacturing method and therefore we have already decreased our carbon footprint per produced kg Menthol by one third. The synthetic Menthol is a substitute to the natural one, which is extracted from peppermint plants by water steam distillation and a further crystallization process. We have estimated that the carbon footprint of our product is up to 10 times lower than the natural material, which avoids approx. 250.000 tons up to 500.000 tons. CO<sub>2</sub> per anno. This reduces the scope 3 of our customers.

SymTrap®: Extension of energy-saving technology to biofunctional substances.

SymTrap® can now not only be used to extract and concentrate volatile flavoring substances – this technology, based on a sophisticated adsorption-desorption process, has been expanded to also provide a gentle method for extracting secondary plant materials with biofunctional properties. With our technology SymTrap we are able to convert several hundred kilograms of raw material into a kilogram of highly concentrated flavor. This means that we only need to transport the comparatively lower quantity of valuable materials to our development centres, and ultimately to our customers throughout the world. Wherever possible, we avoid transport-related efficiency losses and aim to achieve a sensible balance between local procurement and local distribution. Several projects are running to share also our knowledge and technology with our suppliers and customers, which then also reduces their scope 3 significantly.

### **Are these low-carbon product(s) or do they enable avoided emissions?**

Low-carbon product and avoided emissions

### **Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Other, please specify

Own Methodology

**% revenue from low carbon product(s) in the reporting year**

5

**Comment**

Approx. 10% of our research activities are directly linked to CO<sub>2</sub>, but carbon reduction is also considered in other projects with another focus

## **C5. Emissions methodology**

### **C5.1**

**(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).**

**Scope 1**

---

**Base year start**

January 1, 2016

**Base year end**

December 31, 2016

**Base year emissions (metric tons CO<sub>2</sub>e)**

194,358

**Comment**

**Scope 2 (location-based)**

---

**Base year start**

January 1, 2016

**Base year end**

December 31, 2016

**Base year emissions (metric tons CO<sub>2</sub>e)**

121,274

**Comment**

## Scope 2 (market-based)

---

### Base year start

January 1, 2016

### Base year end

December 31, 2016

### Base year emissions (metric tons CO<sub>2</sub>e)

130,952

### Comment

## C5.2

**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

## C6. Emissions data

### C6.1

**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO<sub>2</sub>e?**

#### Reporting year

---

### Gross global Scope 1 emissions (metric tons CO<sub>2</sub>e)

214,050

### Comment

### C6.2

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

#### Row 1

---

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We are reporting a Scope 2, market-based figure

**Comment**

### C6.3

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO<sub>2</sub>e?**

**Reporting year**

---

**Scope 2, location-based**

116,935

**Scope 2, market-based (if applicable)**

107,591

**Comment**

### C6.4

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

Yes

### C6.4a

**(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.**

---

**Source**

Symrise has Offices in some countries without manufacturing sites. These Offices are not included.

**Relevance of Scope 1 emissions from this source**

Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**

Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**

Emissions are not relevant

**Explain why this source is excluded**

Energy consumption of these offices is compared to whole consumption very low (< 2 %)

---

**Source**

Symrise has acquired facilities world-wide in 2018 and 2019. These are not fully integrated yet into our Symrise-wide emissions accounting system.

**Relevance of Scope 1 emissions from this source**

Emissions excluded due to recent acquisition

**Relevance of location-based Scope 2 emissions from this source**

Emissions excluded due to recent acquisition

**Relevance of market-based Scope 2 emissions from this source (if applicable)**

Emissions excluded due to recent acquisition

**Explain why this source is excluded**

The estimated emissions of these recently acquired sites are not material compared to the existing portfolio (<0.1%).

## **C6.5**

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

**Purchased goods and services**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

3,368,704

**Emissions calculation methodology**

We used the Symrise Product Sustainability Scorecard (LCA Tool): For our calculation we used data of public available databases (e.g. Ethanol and glycerine), literature (e.g. gelatine, essential oils), and did some assumption related to similar processes (e.g. starch of potato and corn). The footprint is calculated along the whole supply chain, e.g. from mineral oil to complex chemicals, or from onions to spray dried flavors. Data gaps are extrapolated.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

In 2017, we began working with the CDP Supply Chain Program. Our suppliers with the highest risk status were requested to follow the CDP Supply Chain Program. Since the 2017 program was viewed as a pilot, we are now requesting that suppliers renew their participation in 2019 with increased data quality and detailed information, as was done in the previous year. Compared to 2017, the number of returns in the climate change category increased from 44 to 64 in the reporting year – thus also increasing the response rate to 52 %. The number of suppliers reporting that climate-related issues are being monitored at the Executive Board level has almost doubled to 83 % in 2019 compared to 43 % in 2017. In addition, 74 % of our suppliers reported in the reporting year that they were involved in emission reduction initiatives, compared to 57 % in 2018. In terms of our Science Based Target of 80 % in 2020, we are already moving in the right direction. 45 % of our suppliers also reported that they had reduced their emissions (Scope 1+2) in 2019 compared to previous reporting – in 2018 it was 33 %. Nearly half of our suppliers (48 %) also require their suppliers to be responsible in terms of climate-

related issues and thus continue their commitment to the topic along their respective value chains. This share has almost tripled compared to 2017.

## Capital goods

---

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

67,340

### Emissions calculation methodology

Investment in plant, property and equipment in 2019 was 182 million €. We use a conversion factor of the Federal Statistical Office Germany (370 ton CO<sub>2</sub> / million €).

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Our buildings and equipment is usually designed for long term use. Sometimes more than 50 years. Therefore from an LCA perspective their CO<sub>2</sub> impact is much lower than the one of operational carbon footprint.

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

---

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

63,685

### Emissions calculation methodology

For calculation of scope 3 emissions related to losses of electricity grid and upstream chains we used information of "Forschungsstelle für Energiewirtschaft e.V." (<https://www.ffe.de/>). The value of 63685 tons CO<sub>2</sub> represents: Approx. 16% of Scope 1 emissions related to electricity (losses and upstream chains) Approx. 31% of Scope 3

emissions related to natural gas (upstream chains) Approx. 24% of Scope 3 emissions related to natural gas (upstream chains)

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Upstream transportation and distribution**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

26,322

**Emissions calculation methodology**

We have calculated distances of transportation of our main raw material volume from our main suppliers to our regional hubs and extrapolated to our whole supply volume.

These distances are multiplicity with the transported volumes in tons. We have used the tool Ecotransit available at <http://www.ecotransit.org/calculation.en.html>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Waste generated in operations**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

48,440

**Emissions calculation methodology**

We have estimated the emissions related to our Waste generated in operations as follows: A significant part of our waste is burnt internally, in plants which are under the scope of the EU ETS. Of course, these belong to scope 1. Based in this experience we know these emissions with high accuracy and brings us in the position to extrapolate emissions for waste which is externally burnt and thus belong to Scope 3.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Business travel**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

30,069

**Emissions calculation methodology**

Travelled distances via air, train and car are reported to our sustainability cockpit. For air travelling which is the most important source of emissions we have used the following figures: Distance < 800km = 0.29 kg CO<sub>2</sub>/km Distance >2000km = 0.15 kg CO<sub>2</sub>/km Distance >= 800km && <= 2000km = 0.22 kg CO<sub>2</sub>/km

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Employee commuting**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

11,729

**Emissions calculation methodology**

Extrapolation according to locations (e.g. distance to or size of communities and commuting modes) and numbers of employees working on sites

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Upstream leased assets**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Symrise has no significant upstream leased assets

**Downstream transportation and distribution**

---

**Evaluation status**

Relevant, calculated

**Metric tonnes CO<sub>2</sub>e**

136,038

**Emissions calculation methodology**

We have calculated distances of transportation of our main product volume from our regional hubs to main customers and extrapolated to our whole sales. These distances are multiplied with the transported volumes in tons. Also included: Intercompany transport (e.g. finished goods from Symrise Germany to Symrise USA. We have used the tool Ecotransit available at <http://www.ecotransit.org/calculation.en.html>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

**Processing of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Sold products are usually processed by us or traded. Related to the intended use (Flavors, Fragrances, Cosmetics and functional Ingredients) we don't see a significant carbon footprint related to the processing phase of the products. They are usually blended with other components and represent only a very low dosage in final product. Emissions of a typical blending process are usually low compared to the whole process of producing of our products.

**Use of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Sold products are usually processed by us or traded. Related to the intended use (Flavors, Fragrances, Cosmetics and functional Ingredients) we don't see a significant carbon footprint related to the use phase of the products.

**End of life treatment of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Related to the intended use (Flavors, Fragrances, Cosmetics and functional Ingredients) we don't see a significant carbon footprint related to the end of life treatment.

**Downstream leased assets**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Symrise has no significant downstream leased assets

**Franchises**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Symrise has no significant franchising activities

**Investments**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Symrise has only some minor joint ventures with low carbon footprint compared to own operations covered in scope 1 and scope 2.

**Other (upstream)**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

no further impact known

**Other (downstream)**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

no further impact known

## C6.7

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

## C6.10

**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO<sub>2</sub>e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

---

**Intensity figure**

0.00009438

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

321,641

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

3,408,000,000

**Scope 2 figure used**

Market-based

**% change from previous year**

6.36

**Direction of change**

Decreased

**Reason for change**

Emissions reduction activities are mainly driven by production optimization and the continuous operation of the new cogeneration of heat and power plant in Germany/Holzminden. The CHP power plant replaced an old power plant which was run

with oil. The switch to the gasfueled CHP power plant saved about 20.000 tons CO<sub>2</sub>eq per year.

## C7. Emissions breakdowns

### C7.1

**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

No

### C7.2

**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

Country/Region	Scope 1 emissions (metric tons CO <sub>2</sub> e)
Argentina	602
Australia	40
Brazil	5,983
Canada	460
Chile	4,685
China	1,179
Colombia	416
Costa Rica	1
Ecuador	10,347
Egypt	737
France	25,260
Germany	66,393
Hungary	496
India	43

Japan	89
Madagascar	0
Mexico	6,505
Russian Federation	555
Singapore	3,326
South Africa	773
Spain	551
Thailand	1
United Kingdom of Great Britain and Northern Ireland	108
United States of America	84,513
Venezuela (Bolivarian Republic of)	0
Netherlands	1,757

### C7.3

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By activity

### C7.3c

**(C7.3c) Break down your total gross global Scope 1 emissions by business activity.**

Activity	Scope 1 emissions (metric tons CO <sub>2</sub> e)
Chemicals production	140,764
Non-Chemicals production	73,286

## C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO<sub>2</sub>e.

	Gross Scope 1 emissions, metric tons CO <sub>2</sub> e	Comment
Chemicals production activities	140,764	Chemical production activities are located in Germany, USA and Mexico. Please note, Symrise has additional Flavor, Fragrance, Cosmetic Ingredients and Nutrition business in these countries.

## C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO <sub>2</sub> e)	Scope 2, market-based (metric tons CO <sub>2</sub> e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Argentina	561	561	1,631	0
Australia	779	779	1,686	0
Brazil	1,016	1,016	11,197	5,736
Canada	236	236	2,367	1,375
Chile	1,249	1,249	3,495	1,414
China	5,191	5,191	7,722	0
Colombia	1,009	1,009	3,592	1,442
Costa Rica	115	115	1,625	1,625
Ecuador	2,858	2,858	7,650	3,720

Egypt	244	244	697	0
France	3,193	3,193	35,136	1,439
Germany	0	0	28,361	28,361
Hungary	131	131	386	0
India	1,598	1,598	1,695	122
Japan	157	157	367	8
Madagascar	0	0	0	0
Mexico	3,838	3,838	7,500	0
Russian Federation	377	377	1,117	0
Singapore	8,035	8,035	14,609	0
South Africa	464	464	595	0
Spain	175	175	2,306	1,572
Thailand	676	676	1,717	0
United Kingdom of Great Britain and Northern Ireland	647	647	2,122	131
United States of America	72,828	72,828	155,429	839
Venezuela (Bolivarian Republic of)	0	0	0	0
Netherlands	0	0	1,556	200

## C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

### C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Chemicals production		61,805
Non-Chemicals production		45,786

## C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	7	61,805	Chemical production activities are located in Germany, USA and Mexico. Please note, Symrise has additional Flavor, Fragrance, Cosmetic Ingredients and Nutrition business in these countries

## C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e	Explain calculation methodology
---------------------	---	---------------------------------

	from purchased feedstock	
Specialty chemicals	30	For our SBT approval we calculated accurate scope 3 data. Scope 3 emissions contribute to approximately 90% to our overall carbon footprint. 51% of our scope 3 Emission Comes from meat side streams, mainly chicken. 30% Comes from chemicals, 8% from essential oils and 11% from natural materials.

## C-CH7.8a

**(C-CH7.8a) Disclose sales of products that are greenhouse gases.**

	Sales, metric tons	Comment
Carbon dioxide (CO <sub>2</sub> )	0	
Methane (CH <sub>4</sub> )	0	
Nitrous oxide (N <sub>2</sub> O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF <sub>6</sub> )	0	
Nitrogen trifluoride (NF <sub>3</sub> )	0	

## C7.9

**(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?**

Increased

## C7.9a

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

	Change in	Direction	Emissions	Please explain calculation
--	-----------	-----------	-----------	----------------------------

	emissions (metric tons CO2e)	of change	value (percentage)	
Change in renewable energy consumption	5,224	Decreased	1.6	<p>In total, our change in renewable energy consumption has led to a decrease of 5224 tons CO2 emissions. Dividing this by last year's total CO2 emissions, a decrease of 1.6% was achieved. <math>(5224/317894)*100 = 2.9\%</math>. This represents a 1.6% decrease in CO2 emissions.</p> <p>In detail: In 2019 the proportion of renewable electricity consumption at all of our worldwide manufacturing sites excluding Germany decreased slightly by 1.56 TJ (433 MWh). This has led to a CO2 emission increase by 87 tons. For all our German manufacturing sites we bought GoO's (certificates for renewable energy) equivalent to 8447 tons CO2. Moreover, we consumed 56 TJ (15555 MWh) less Biofuel than in 2018. Instead of biofuel, fossil gas was burnt in US increasing our CO2 emissions by 3136 tons.</p>
Other emissions	61,500	Decreased	19.3	In total there are 61,500 tons CO2 from other emission reduction activities. The

reduction activities				<p>percentage change in emissions due to emission reduction activities divided by last year's total emissions: <math>(61500 / 317894) * 100 = 19.3\%</math> This represents a 19.3% decrease in emissions due to emissions reduction activities explained under C 4.3b</p> <p>Detailed explanation/background:</p> <p>As explained under C4.3b, Symrise is one of the biggest manufacturers of synthetic Menthol for more than 30 years. We have developed together with our main supplier a much more efficient manufacturing method and therefore we have already decreased our carbon footprint per produced kg Menthol by one third. The synthetic Menthol is a substitute to the natural one, which is extracted from peppermint plants by water steam distillation and a further crystallization process. We have calculated the carbon footprint of our synthetic product is up to 10 times lower than that of the natural material. In 2019 we doubled our production capacity in USA which helped avoid approx. 25,000 tons CO<sub>2</sub>.</p>
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				<p>Furthermore, the CHP plant in Germany/Holzminden reached full capacity in 2018. The total emission reduction due to the CHP-Plant in 2019 is 20,000 tons CO<sub>2</sub>. In addition, a new boiler in the USA has a 20% improved energy efficiency. This means that approx. 52,000 tons of steam can be saved, corresponding to a savings of approx. 10,400 tons of CO<sub>2</sub>.</p> <p>Another 6100 tons CO<sub>2</sub> have been reduced by various measures to increase energy efficiency in USA, Colombia, France and Germany. Examples are new boilers, LED lighting and state-of-the-art heat boxes.</p>
Divestment	0	No change	0	No divestment
Acquisitions	0	No change	0	No acquisition
Mergers	0	No change	0	No merger
Change in output	72,000	Increased	22.6	Our total output (tons) of products has increased by 3%. Almost most of the capacity increase was achieved in manufacturing sites which produces high energy consuming products like menthols

				and cosmetic ingredients. Based on this, we calculated a CO2 emission increase of 72.000 tons, which is an increase of 22.6% We calculated the effect of changes in output using an analogous formula as described above. $(72000 / 317894) * 100 = 22.6\%$ . This is an increase of 22.6%
Change in methodology	0	No change	0	No Change in methodology
Change in boundary	0	No change	0	No change in boundaries
Change in physical operating conditions	0	No change	0	No change in physical operating conditions
Unidentified	1,529	Decreased	0.5	Of course the calculations reported above contain some uncertainties, especially with respect to the effects of the changes in output. In addition to this, due to our energy efficiency programs, mainly based on our ISO 50001 management system, in 2019 we were not able to clearly identify if these projects have been completed or if they are still in the implementation phase. We calculated the effect of unidentified

				emissions using an analogous formula as described above. $(1529/317894) * 100 = 0.5\%$
Other	0	No change	0	

### C7.9b

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Market-based

## C8. Energy

### C8.1

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 0% but less than or equal to 5%

### C8.2

**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes

Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

## C8.2a

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	184,275	1,074,232	1,258,507
Consumption of purchased or acquired electricity		26,131	201,406	227,538
Consumption of purchased or acquired steam		0	66,842	66,842
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		210,416	1,342,480	1,552,896

## C-CH8.2a

**(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.**

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	882,299
Consumption of purchased or acquired electricity		101,479
Consumption of purchased or acquired steam		59,656
Consumption of self-generated non-fuel renewable energy		0
Total energy consumption		1,043,433

## C8.2b

**(C8.2b) Select the applications of your organization's consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

## C8.2c

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

### Fuels (excluding feedstocks)

Natural Gas

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

914,485

**MWh fuel consumed for self-generation of electricity**

71,527

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

107,290

**MWh fuel consumed for self-cogeneration or self-trigeneration**

61,990

**Emission factor**

0.056

**Unit**

metric tons CO<sub>2</sub>e per GJ

**Emissions factor source**

GHG Protocol

**Comment**

---

**Fuels (excluding feedstocks)**

Biogasoline

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

184,285

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

164,704

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.07

**Unit**

metric tons CO<sub>2</sub>e per GJ

**Emissions factor source**

GHG Protocol

**Comment**

---

**Fuels (excluding feedstocks)**

Fuel Oil Number 2

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

160,835

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

89,001

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Emission factor**

0.07

**Unit**metric tons CO<sub>2</sub>e per GJ**Emissions factor source**

GHG Protocol

**Comment****C8.2d**

**(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.**

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	227,538	227,538	47,984	47,984
Heat	0	0	0	0
Steam	66,842	66,842	0	0
Cooling	0	0	0	0

**C-CH8.2d**

**(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.**

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	101,479	101,479

Heat	0	0
Steam	59,656	59,656
Cooling	0	0

## C8.2e

**(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.**

### Sourcing method

Unbundled energy attribute certificates, Guarantees of Origin

### Low-carbon technology type

Wind

### Country/region of consumption of low-carbon electricity, heat, steam or cooling

Europe

### MWh consumed accounted for at a zero emission factor

47,984

### Comment

Clear strategy for renewable electricity procurement until 2025

## C-CH8.3

**(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?**

Yes

## C-CH8.3a

**(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.**

**Fuels used as feedstocks**

Liquid biofuel

**Total consumption**

1,507

**Total consumption unit**

metric tons

**Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit**

2.85

**Heating value of feedstock, MWh per consumption unit**

162,140

**Heating value**

HHV

**Comment**

1507 tons of liquid biofuel is equal to 4296 tons of CO2.

---

**Fuels used as feedstocks**

Gasoline

**Total consumption**

906

**Total consumption unit**

metric tons

**Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit**

2.6

**Heating value of feedstock, MWh per consumption unit**

101,156

**Heating value**

HHV

**Comment****C-CH8.3b**

**(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.**

	Percentage of total chemical feedstock (%)
Oil	33
Natural Gas	66
Coal	0
Biomass	0
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

**C9. Additional metrics****C9.1**

**(C9.1) Provide any additional climate-related metrics relevant to your business.**

**Description**

Waste

**Metric value**

51,734

**Metric numerator**

ton

**Metric denominator (intensity metric only)**

**% change from previous year**

8

**Direction of change**

Increased

**Please explain**

based on 3% higher production volume compared to last year

---

**Description**

Energy usage

**Metric value**

5,590

**Metric numerator**

TJ

**Metric denominator (intensity metric only)**

**% change from previous year**

3.3

**Direction of change**

Increased

**Please explain**

Production volume increased by 3% compared to last year. Energy Efficiency programs were increased

**C-CH9.3a**

**(C-CH9.3a) Provide details on your organization's chemical products.**

**Output product**

Specialty chemicals

**Production (metric tons)**

181,044

**Capacity (metric tons)**

200,000

**Direct emissions intensity (metric tons CO<sub>2</sub>e per metric ton of product)**

1.12

**Electricity intensity (MWh per metric ton of product)**

0.56

**Steam intensity (MWh per metric ton of product)**

0.33

**Steam/ heat recovered (MWh per metric ton of product)**

0.16

**Comment**

Synthetic Chemical Ingredients.

## C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

## C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology	Stage of	Average % of	R&D	Comment
------------	----------	--------------	-----	---------

area	development in the reporting year	total R&D investment over the last 3 years	investment figure in the reporting year (optional)	
Radical process redesign	Applied research and development	21 - 40%		Over the last 3 years in total 409 m have been invested in low-carbon Research and Development. Approx. 40% of this sum is related to the chemical production. This means, 164 m have been invested in low-carbon R&D for chemical production activities over the last three years

## C10. Verification

### C10.1

**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

### C10.1a

**(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.**

---

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Moderate assurance

**Attach the statement**

 CDP-Verification-Letter 2019.pdf

**Page/ section reference**

Verification Report, pages 1-3.

**Relevant standard**

AA1000AS

**Proportion of reported emissions verified (%)**

100

## **C10.1b**

**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

---

**Scope 2 approach**

Scope 2 market-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Moderate assurance

**Attach the statement**

 CDP-Verification-Letter 2019.pdf

**Page/ section reference**

Verification Report, pages 1-3.

**Relevant standard**

AA1000AS

**Proportion of reported emissions verified (%)**

100

## C10.1c

**(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.**

---

**Scope 3 category**

Scope 3 (upstream & downstream)

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Moderate assurance

**Attach the statement**

 CDP-Verification-Letter 2019.pdf

**Page/section reference**

Verification Report, pages 1-3.

**Relevant standard**

AA1000AS

### Proportion of reported emissions verified (%)

100

## C10.2

**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

Yes

## C10.2a

**(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?**

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C5. Emissions performance	Year on year change in emissions (Scope 3)	AA1000AS	Here is the full list: a) Year on year change in emissions (Scope 3) b) Year on year change in emissions (Scope 1 and 2) c) Progress against emission reduction target d) Year on year emissions intensity figure Emissions reduction activities e) For further Details see GRI indicator 305-3 on page 44 of the attached file Symrise Sustainability Record 2019.
C4. Targets and performance	Progress against emissions reduction target	AA1000AS	Company Goals are defined by our CEO. See page 22-23 in our Corporate Report 2019 which is attached.

## C11. Carbon pricing

### C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

### C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

### C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

#### EU ETS

**% of Scope 1 emissions covered by the ETS**

11.8

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1, 2019

**Period end date**

December 31, 2019

**Allowances allocated**

21,747

**Allowances purchased**

0

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

25,222

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

0

### **Details of ownership**

Facilities we own and operate

### **Comment**

In order to make up for the difference between verified emissions and allocated ones we have used surplus allowances stockpiled in previous years

## **C11.1d**

### **(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

DESCRIPTION OF THE STRATEGY: Our strategy is to have sufficient allowances ready to cover our verified emissions on our Union registry in time. In case we do not have enough allowances we would buy the difference on the market

#### **CASE STUDY**

Situation: Symrise has one power plant which is under the regime of the EU ETS

Task: Meeting compliance with regards to our emissions under the EU ETS,

Action: In order to make up for the difference between verified emissions and allocated ones in 2019 we either used surplus allowances from previous years or - if required - buy further allowances on the market. To comply with all the requirements of the EU ETS we report and verify our emissions every year well before the deadline of 31st March and surrender the allowances till the 30th of April

Result: For our power plant under the EU ETS, Symrise makes sure that we are compliant with regards to the volume of emission permits as well as the deadline.

## **C11.2**

### **(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?**

No

## C11.3

**(C11.3) Does your organization use an internal price on carbon?**

No, but we anticipate doing so in the next two years

## C12. Engagement

### C12.1

**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers

Yes, our customers

### C12.1a

**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

---

#### **Type of engagement**

Engagement & incentivization (changing supplier behavior)

#### **Details of engagement**

Run an engagement campaign to educate suppliers about climate change

#### **% of suppliers by number**

10

#### **% total procurement spend (direct and indirect)**

60

#### **% of supplier-related Scope 3 emissions as reported in C6.5**

90

#### **Rationale for the coverage of your engagement**

Scope 3 emissions of the category “purchased goods and services” contribute to approximately 90% to our overall carbon footprint. 51% of these our scope 3 emission comes from meat side streams, mainly chicken. 30% comes from chemicals, 8% from essential oils and 11% from natural materials.

For this reason, Symrise has engaged with the key suppliers to encourage them to set emission reduction targets.

To this aim we have organized several seminars for our suppliers in cooperation with the CDP. We have committed ourselves as part of our approved Science Based Target (SBT) that 80% of our key suppliers will implement GHG reduction targets by 2020. Furthermore, we ask them to participate in the CDP supply chain program and to report there on their targets. As an alternative they can also report their targets via EcoVadis. Currently we run an encouragement-campaign. Later, we will discuss consequences with suppliers not being able or refusing to set targets.

When it comes to the procurement of our raw materials the setting of targets and the participation in the CDP Supply Chain or EcoVadis program is expected. If required, we are willing to increase the pressure on our key suppliers and would also consider abandoning business relationships in case of insufficient climate performance. For the purpose of this target, key suppliers are those suppliers providing Symrise with carbon intensive raw materials. In total, key suppliers are responsible for 60% of our annual purchasing volume. The rationale to focus our engagement on these suppliers is, that their emission reductions have a considerable quantitative impact. Furthermore, focussing on them reveals a good cost-benefit relationship.

### **Impact of engagement, including measures of success**

//MEASURE OF SUCCESS: Primarily, we measure the success of our engagement by the numbers of key suppliers setting GHG reduction targets. In addition to this the CDP supply chain program provides us the total emission reduction volume of our participating key suppliers. To some extent we can attribute these savings to our

engagement.

//IMPACT OF ENGAGEMENT: The fact that we track the emission reduction targets of our key suppliers encourages them to set such targets. This in turn may lead to considerable emission reductions. Their participation in the CDP supply chain program further enhances their awareness for climate change issues.

An increasing number of suppliers reported having an absolute and/or intensity emissions targets, from 31 suppliers (53%) in 2018 to 40 suppliers (61%) in 2019.

Moreover compared to 2018, the response figure for our CDP requests (how many companies actually return data to us through a CDP report) increased from 58% to 64% in the reporting year.

More than an additional 5% of our key-suppliers (who do not report to CDP) confirm their participation in the EcoVadis program which also requests the implementation of GHG reduction targets.

The total emission reduction volume of our participating key suppliers as calculated by the CDP supply chain program has been 2 million tons CO<sub>2</sub>e in 2019.

The constant trend in these parameters gives evidence for the positive impact of our engagement. Currently we are on track to achieve our goal of engaging 80% of our key suppliers to institute GHG emission initiatives by 2020. So for the time being no further actions to engage with our suppliers are needed.

## Comment

## C12.1b

**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

---

### **Type of engagement**

Collaboration & innovation

### **Details of engagement**

Other, please specify

Joint initiative with customers to reduce transport related emissions

### **% of customers by number**

95

### **% of customer - related Scope 3 emissions as reported in C6.5**

5.4

### **Please explain the rationale for selecting this group of customers and scope of engagement**

// OUR ENGAGEMENT FOCUS on customers with relevant transport emissions: With regard to our downstream Scope 3 emissions the only relevant category is “downstream transportation”. For fragrances, flavours and cosmetic ingredients there are no significant emissions related to the processing and to the use phase. Our products are usually blended with other components and represent only a very low dosage in final products of our clients. Emissions of a typical blending process are usually low compared to the whole process of producing of our products. Therefore, the scope of our engagement lies on the reduction of transport emissions. In order to leverage the largest possible emission reduction potentials our engagement reaches out to as many of our clients as possible. (2019: 95%)

To this aim, we have established an integrated supply chain management initiative

together with our customers. It comprises the entire value creation chain from raw materials procurement to end products for all our customers and was developed for the efficient harmonization of ordering processes between Symrise and its customers. This so-called Symchronize™ system is a trademarked electronic data processing (EDP) system based on SAP software. It addresses order frequencies, optimized batch sizes, full pallets and trucks as key criteria to reduce transport and distribution efforts and expenditures. We offer the usage of the Symchronize™ system to all of our customers and suppliers. Thus, we aim to reduce down- and upstream transport emissions as much as possible.

### **Impact of engagement, including measures of success**

We MEASURE THE SUCCESS based on a KPI that compares our Scope 3 downstream transportation emissions with our sales volumes (tons CO2 from transportation against tons of sales in ).

//IMPACT OF OUR ENGAGEMENT: We have established an integrated supply chain management initiative together with our customers. It addresses order frequencies, optimized batch sizes, full pallets and trucks as key criteria to reduce transport and distribution efforts and expenditures. By use of Symchronize™ we optimize order frequencies and batch sizes to our specific customer needs. This allows us to achieve full pallets and thereby reduce unnecessary transports. For example, four years ago a key account in the fragrance business ordered one bottle to be delivered on just one pallet in order to avoid mixing up of product batches. After a substantial evaluation and optimization of product tracking based on Symchronize™ this is no longer necessary. Today pallets are fully loaded and transported into the warehouses also of this key account. Furthermore with the help of Symchronize we manage the number of air transports and consequently try to significantly decrease carbon emissions.

Summarizing it can be concluded, that we have successfully addressed our downstream

transportation related scope 3 emissions.

Looking at 2019 KPI data, our sales specific emissions value for downstream transportation has increased again after a considerable decrease in 2018 (down from 41.7 to 36.6 tCO<sub>2</sub>/m ) and stands now at 39.9 tons of CO<sub>2</sub> per million of sales.

This unsteady development is mainly due to the fact that Symchronize™ and our systematic emissions accounting had not been established at several of our newly acquired facilities in 2018 while additional sales in the equation were already accounted for.

In 2019 now, for these newly acquired installations both factors in the KPI equation are fully integrated again. But as we have continued to acquire also further installations in 2019, the accounting bias is still there – though much more limited.

Compared with our 2017 value for 2019 we still see a solid decreasing trend of more than -5% or -2.5% on an annual basis.

In absolute terms our respective 2019 emissions stand at 136,038 t CO<sub>2</sub>.

Our sales - after another year of strong organic growth - have reached 3,408 m .

## C12.3

**(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?**

Trade associations

Funding research organizations

## C12.3b

**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

## C12.3c

**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

---

**Trade association**

International Organization of the Flavour Industry (IOFI)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

IOFI is the global association representing the Flavor Industry on a global, national and regional level. The position of IOFI is to capitalize on the many sustainability efforts embraced by the industry and address in a voluntary and proactive way the expectations of civil society, legislators and authorities.

**How have you influenced, or are you attempting to influence their position?**

As the chairman of the Health, Safety and Environmental Committee and at the same time as a committee member of the Sustainability Task Force we influence the trade association's position by addressing the importance of CO2 reduction and climate protection activities.

---

**Trade association**

International Fragrance Association (IFRA)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The International Fragrance Association brings together fragrance ingredient manufacturers and compounders to represent their collective interests and promote the safe use and enjoyment of fragrances worldwide. As well as the traditional advocacy

role of a trade association - working with regulators and policymakers to help shape a fair, stable and sustainable legal environment

**How have you influenced, or are you attempting to influence their position?**

As a chairman of the Health, Safety and Environmental Committee and at the same time as a committee member of the Sustainability Task Force we influence the trade association's position by addressing the importance of CO2 reduction and climate protection activities.

---

**Trade association**

Research Institute for Fragrance Materials (RIFM)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

RIFM supports the fragrance industry's sound environmental stewardship of their products with an active environmental program. The RIFM Environmental Program sponsors testing and academic research on the fate and effects of fragrance materials in water, soil, sediments, and air. RIFM works closely with other international research organizations, like the European Centre for Ecotoxicology, The Society of Environmental Toxicology and Chemistry (SETAC) and Toxicology of Chemicals, (ECETOC) and the International Life Sciences Institute/Health and Environmental Sciences Institute (ILSI-HESI), to further society's understanding of the behavior of organic chemicals in the environment and assess their risk.

**How have you influenced, or are you attempting to influence their position?**

Symrise's CSO is a board member of RIFM and high level managers are encouraging uniform safety standards related to the use of fragrance ingredients in several teams: Symrise is part of the following teams: RIFM Advisory Committee and several expert

groups like Skin sensitisation, Genotoxicity, Respiratory, Reprotox and Repeated Dose.

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### **Trade association**

World Business Council For Sustainable Development (WBCSD) Sustainable Lifestyles

### **Is your position on climate change consistent with theirs?**

Consistent

### **Please explain the trade association's position**

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world. WBCSD's Climate & Energy Program facilitates interaction on cutting-edge climate and energy topics between WBCSD members, their peers and stakeholders as they address critical industry issues and share best practices and solutions.

### **How have you influenced, or are you attempting to influence their position?**

We are member of the project "FReSH"(Food Reform for Sustainability and Health). FReSH is one of the key initiatives of WBCSD's effort to create a set of business solutions to drive the transformation of the food system within planetary boundaries. We continuously try to enable the development and implementation of transformative business solutions that are aligned to science-based targets.

## **C12.3d**

### **(C12.3d) Do you publicly disclose a list of all research organizations that you fund?**

Yes

## **C12.3f**

### **(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

To ensure consistency of these activities and our climate strategy we check our action regarding potential inconsistencies as follows: At Symrise we evaluate all measures and engagement taken on different levels across our business divisions and geographies, including those that might influence climate related policies. Inconsistencies between corporate climate targets and policy commitments with industry positions are assessed by our CSO and corporate sustainability department through regular screening of internal industry newsletters, including industry positions on regulatory issues. In case of inconsistencies, we address these at trade association meetings (board, task forces) where Symrise representatives are regularly present and try to solve the issue. If these inconsistencies cannot be resolved, then we decline to participate in such activities that contravene our strategy.

## C12.4

**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

---

### Publication

In mainstream reports

### Status

Complete

### Attach the document

 Corporate Report 2019.pdf

 Sustainability Record 2019.pdf

### Page/Section reference

see Corporate Report 2019: pages 20-23

see Sustainability Record 2019, GRI 305

### Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

### Comment

## C15. Signoff

### C-FI

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

### C15.1

**(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

	Job title	Corresponding job category
Row 1	CEO Symrise AG	Chief Executive Officer (CEO)

## SC. Supply chain module

### SC0.0

**(SC0.0) If you would like to do so, please provide a separate introduction to this module.**

Climate protection: Who, if not us? When, if not now?

Please see our Corporate Report 2019, page 20-23

## SC0.1

**(SC0.1) What is your company's annual revenue for the stated reporting period?**

	Annual Revenue
Row 1	3,407,900,000

## SC0.2

**(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?**

Yes

## SC0.2a

**(SC0.2a) Please use the table below to share your ISIN.**

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	DE	DE000SYM99

## SC1.1

**(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.**

### Requesting member

Altria Group, Inc.

### Scope of emissions

Scope 3

### Allocation level

Company wide

### Allocation level detail

**Emissions in metric tonnes of CO<sub>2</sub>e**

606

**Uncertainty (±%)**

10

**Major sources of emissions**

High complex molecules like Menthol.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 85% of Sales; data GAPS have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Clorox Company

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

3.154

**Uncertainty (±%)**

10

**Major sources of emissions**

Steam distilled extracts, like e.g. Eucalyptol and Peppermint. High complex molecules like Menthols. Ingredients.

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%. We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Colgate Palmolive Company

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

180.365

**Uncertainty (±%)**

10

**Major sources of emissions**

Steam distilled extracts, like e.g. Eucalyptol and Peppermint. High complex molecules like Menthol.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 85% of Sales; data GAPs have been extrapolated to 100%. We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Diageo Plc

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

4.361

**Uncertainty (±%)**

10

**Major sources of emissions**

Steam distilled extracts and solvents like propylene glycol and Ethanol

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available

---

**Requesting member**

FIRMENICH SA

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

7.933

**Uncertainty (±%)**

10

**Major sources of emissions**

Ingredients

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%.

We used literature data on CO2 factors of raw material included in final product, evaluated common synthesis of main raw materials and own manufacturing data.

Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Johnson & Johnson

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

14.364

**Uncertainty (±%)**

10

**Major sources of emissions**

Sun screens, Steam distilled extracts, like Peppermint

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

KAO Corporation

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

1.923

**Uncertainty (±%)**

10

**Major sources of emissions**

Ingredients

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

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**Requesting member**

Kellogg Company

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

11.413

**Uncertainty (±%)**

10

**Major sources of emissions**

Solvents like Propylene Glycol and Triglycerides

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPS have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

L'Oréal

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

7.233

**Uncertainty (±%)**

10

**Major sources of emissions**

Sun screens, Hydrolites, Menthol

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPS have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

PepsiCo, Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

147.897

**Uncertainty (±%)**

10

**Major sources of emissions**

Whey products, Glutamate and sugar

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 80% of Sales; data GAPs have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Philip Morris International

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

63

**Uncertainty (±%)**

10

**Major sources of emissions**

High complex molecules like Menthol.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 85% of Sales; data GAPS have been extrapolated to 100%.

We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

---

**Requesting member**

Unilever plc

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

71.725

**Uncertainty (±%)**

10

### **Major sources of emissions**

Steam distilled extracts, like e.g. Eucalyptol and Peppermint. High complex molecules like Menthols, Sun Screens

### **Verified**

Yes

### **Allocation method**

Allocation based on mass of products purchased

### **Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

We have evaluated approx. 90% of Sales; data GAPs have been extrapolated to 100%. We used literature data, evaluated common synthesis of main raw materials and own manufacturing data. Currently, there is only less primary data from suppliers available.

## **SC1.2**

### **(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).**

We have used some public available data sources, e.g. the Probas database. We also used scientific studies, data we got from our suppliers and additionally own data of our manufacturing lines. We estimated also the carbon footprint of some products where data for similar processes are available. Some of the data, especially the data from public sources is may not representing the actual manufacturing process of our suppliers. There are also still some data gaps but for most of our natural ingredient we have good insights in carbon footprint related to the manufacturing of such ingredients. However, very often we use our own data for our big volume products. The CO<sub>2</sub> emissions caused by high complex chemicals are sometimes not known to us. Our suppliers are very often also not able to provide reliable data, because they have also sometimes a very complex supply chains. However, we reviewed our

high volume chemicals and calculated the carbon footprint considering public available data of basic chemicals and possible/comment synthetic roots. Additionally we added an average factor for each cleaning step of the entire supply chain. There is also very often a lack of information related to CO2 caused by transport done by our supplier. Our average transport emission is approx. 0.3 kg CO2/kg product. This includes transport from supplier to us, inter-company transport and transport from our sites to customer. The data is based on transport from/to our major sites/ key customer and main markets. We do not own trucks and use only external logistic companies, therefore we used a public available tool to calculate the approx. carbon footprint. We know the average carbon footprint of each production line and/or manufacturing technology, the data were generated at our HQ's in Germany.

### SC1.3

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

Allocation challenges	Please explain what would help you overcome these challenges
Managing the different emission factors of diverse and numerous geographies makes calculating total footprint difficult	Most of the products are tailor made with high complexity (Flavor, Fragrances, Cosmetic Ingredients, etc.). Thousands of raw materials are used from several countries and thousands of suppliers. Allocating of energy consumption to an individual manufacturing process is also not always possible, due to complexity of the process.

### SC1.4

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

### SC1.4a

**(SC1.4a) Describe how you plan to develop your capabilities.**

We have a global reporting tool to monitor all sales to all customers globally. We use this tool to get a list of sold products to each requesting customer. With another tool we can break down the product list to identify used raw materials and the manufacturing method we used to manufacture the product. After we calculate the CO2 footprint based on the big volume raw materials and products using data of primary and secondary data as described in point SC 1.2. In 2009 we have conducted a study in cooperation with our main competitors to get more CO2 information of manufacturing of our main supplier. Thirty-eight key ingredients were chosen, 28 synthetic and 10 natural materials, all of which were identified as high tonnage materials as part of the REACH pre-registration process. Unfortunately, when the businesses approached their raw material suppliers it became readily apparent that few of them were able to provide any data at all on their carbon emissions associated with the materials they supply. A questionnaire and covering letter were sent out and followed up personally on numerous occasions. Of the thirty eight suppliers approached only six were able to furnish the companies with any carbon information and in many cases the information was not material specific or so general as to be of little or no use. This was one of the key findings of the project and for some of the companies was very surprising. Furthermore, we have also participated in another study, conducted by the RIFM to calculate the carbon footprint of a "generic fragrances". As a result of this, we are currently in the process to get more carbon data of our supply chain. Related to manufacturing flow diagrams which we received from suppliers, or where public data are available, we calculate a carbon footprint and add additional average data of our own manufacturing process to generate data which are as close as possible to the reality.

## SC2.1

**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

---

### Requesting member

Altria Group, Inc.

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

**Estimated payback**

0-1 year

**Details of proposal**

It is our ultimate goal, to reduce our energy consumption in a systematic way. Case Study: For example, an ISO 50001 Management System was implemented at all German sites in order to reduce energy consumption. (All other manufacturing sites in the EU have executed successful Energy Efficiency Audits in 2016). Global emissions reduction targets are subdivided through the entire organization and managed locally on each manufacturing site. We review our program and objectives regularly in dedicated environmental committees. Responsibilities are defined; budget is allocated to defined measures. Best practices are shared by an electronic system, regular meeting and internal and external audits throughout the entire organization. Our operational excellence teams are trained and well experienced and harmonize our processes globally in order to improve e.g. energy efficiency. Annually we conduct Management Reviews with environmental experts and local management teams, which are then aggregated to regional and global level and signed off finally by our CEO. Consequently the CEO knows about risks and opportunities and consequently can approve CapEx for

projects which add value to our customers but also to Symrise. One example is the significant investment of 30 m in 2017 for our power-heat co-generation plant in Germany, which reduces our carbon emission by more than 20000 tons/year.

---

**Requesting member**

Clorox Company

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

**Details of proposal**

It is our ultimate goal, to reduce our energy consumption in a systematic way. Case Study: For example, an ISO 50001 Management System was implemented at all German sites in order to reduce energy consumption. (All other manufacturing sites in the EU have executed successful Energy Efficiency Audits in 2016). Global emissions reduction targets are subdivided through the entire organization and managed locally on each manufacturing site. We review our program and objectives regularly in dedicated environmental committees. Responsibilities are defined; budget is allocated to defined measures. Best practices are shared by an electronic system, regular meeting and

internal and external audits throughout the entire organization. Our operational excellence teams are trained and well experienced and harmonize our processes globally in order to improve e.g. energy efficiency. Annually we conduct Management Reviews with environmental experts and local management teams, which are then aggregated to regional and global level and signed off finally by our CEO. Consequently the CEO knows about risks and opportunities and consequently can approve CapEx for projects which add value to our customers but also to Symrise. One example is the significant investment of 30 m in 2017 for our power-heat co-generation plant in Germany, which reduces our carbon emission by more than 20000 tons/year.

---

**Requesting member**

Colgate Palmolive Company

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

**Details of proposal**

It is our ultimate goal, to reduce our energy consumption in a systematic way. Case Study: For example, an ISO 50001 Management System was implemented at all

German sites in order to reduce energy consumption. (All other manufacturing sites in the EU have executed successful Energy Efficiency Audits in 2016). Global emissions reduction targets are subdivided through the entire organization and managed locally on each manufacturing site. We review our program and objectives regularly in dedicated environmental committees. Responsibilities are defined; budget is allocated to defined measures. Best practices are shared by an electronic system, regular meeting and internal and external audits throughout the entire organization. Our operational excellence teams are trained and well experienced and harmonize our processes globally in order to improve e.g. energy efficiency. Annually we conduct Management Reviews with environmental experts and local management teams, which are then aggregated to regional and global level and signed off finally by our CEO. Consequently the CEO knows about risks and opportunities and consequently can approve CapEx for projects which add value to our customers but also to Symrise. One example is the significant investment of 30 m in 2017 for our power-heat co-generation plant in Germany, which reduces our carbon emission by more than 20000 tons/year.

---

**Requesting member**

Diageo Plc

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

### **Estimated payback**

0-1 year

### **Details of proposal**

It is our ultimate goal, to reduce our energy consumption in a systematic way. Case Study: For example, an ISO 50001 Management System was implemented at all German sites in order to reduce energy consumption. (All other manufacturing sites in the EU have executed successful Energy Efficiency Audits in 2016). Global emissions reduction targets are subdivided through the entire organization and managed locally on each manufacturing site. We review our program and objectives regularly in dedicated environmental committees. Responsibilities are defined; budget is allocated to defined measures. Best practices are shared by an electronic system, regular meeting and internal and external audits throughout the entire organization. Our operational excellence teams are trained and well experienced and harmonize our processes globally in order to improve e.g. energy efficiency. Annually we conduct Management Reviews with environmental experts and local management teams, which are then aggregated to regional and global level and signed off finally by our CEO. Consequently the CEO knows about risks and opportunities and consequently can approve CapEx for projects which add value to our customers but also to Symrise. One example is the significant investment of 30 m in 2017 for our power-heat co-generation plant in Germany, which reduces our carbon emission by more than 20000 tons/year.

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### **Requesting member**

FIRMENICH SA

### **Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

Johnson & Johnson

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

KAO Corporation

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

Kellogg Company

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

### **Estimated payback**

0-1 year

### **Details of proposal**

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### **Requesting member**

L'Oréal

### **Group type of project**

New product or service

### **Type of project**

New product or service that reduces customers operational emissions

### **Emissions targeted**

Actions that would reduce both our own and our customers' emissions

### **Estimated timeframe for carbon reductions to be realized**

0-1 year

### **Estimated lifetime CO<sub>2</sub>e savings**

### **Estimated payback**

0-1 year

### **Details of proposal**

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**Requesting member**

PepsiCo, Inc.

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

Philip Morris International

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Other, please specify

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

**Details of proposal**

It is our ultimate goal, to reduce our energy consumption in a systematic way. Case Study: For example, an ISO 50001 Management System was implemented at all German sites in order to reduce energy consumption. (All other manufacturing sites in the EU have executed successful Energy Efficiency Audits in 2016). Global emissions reduction targets are subdivided through the entire organization and managed locally on each manufacturing site. We review our program and objectives regularly in dedicated

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**Requesting member**

Unilever plc

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO<sub>2</sub>e savings**

**Estimated payback**

0-1 year

## Details of proposal

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## SC2.2

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

No

## SC3.1

**(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?**

No

## SC3.2

**(SC3.2) Is your company a participating supplier in CDP’s 2019-2020 Action Exchange initiative?**

No

## SC4.1

**(SC4.1) Are you providing product level data for your organization’s goods or services?**

No, I am not providing data

## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	<b>I am submitting to</b>	<b>Public or Non-Public Submission</b>	<b>Are you ready to submit the additional Supply Chain Questions?</b>
I am submitting my response	Investors Customers	Public	

**Please confirm below**