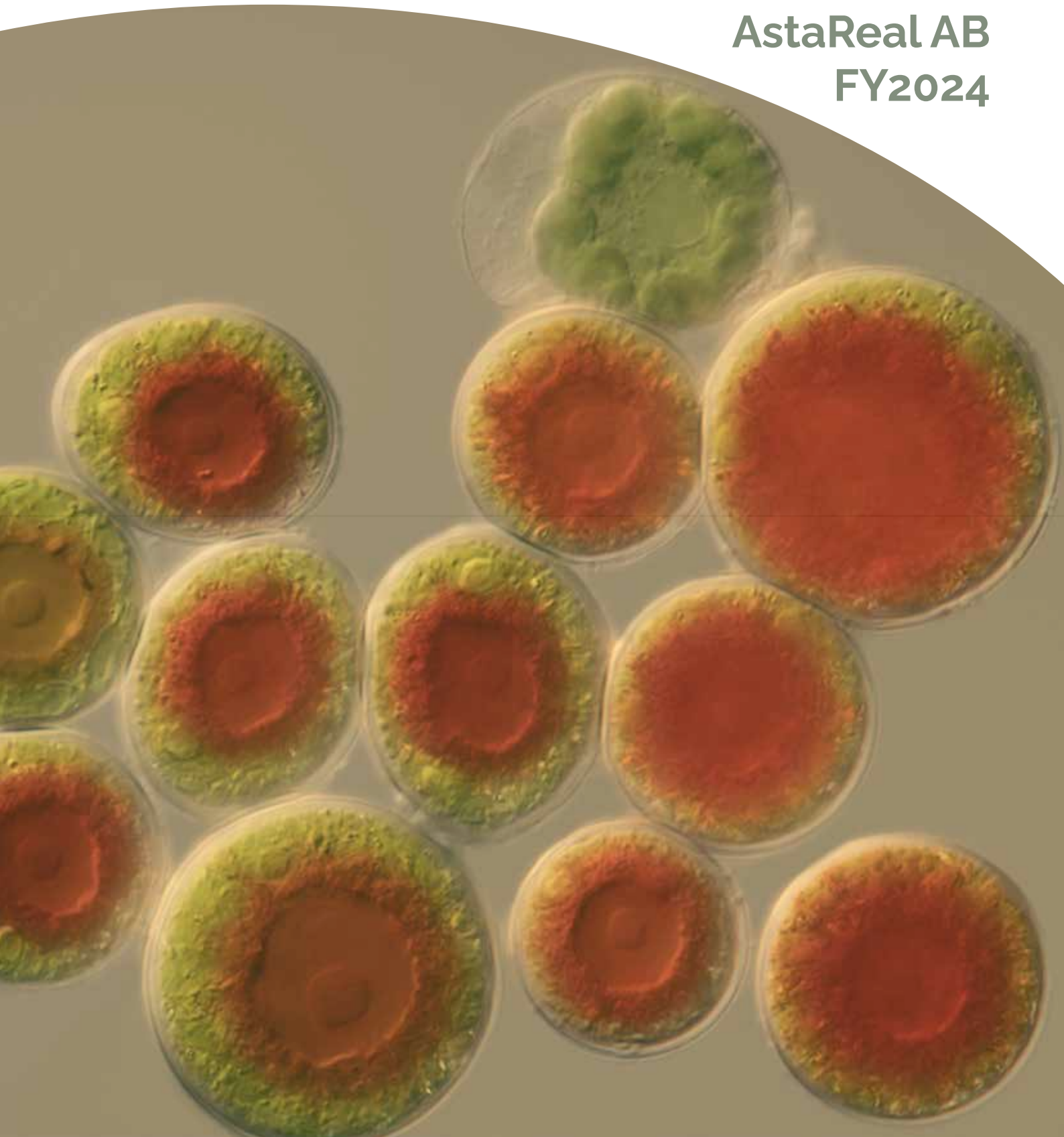


Sustainability Report

AstaReal AB
FY2024



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Word from our CEO

At AstaReal, sustainability is not just a goal—it's woven into our identity and heritage. From the very beginning, our work with *Haematococcus pluvialis*, the microalga behind our natural astaxanthin, has connected us to the very foundations of life. Microalgae are essential to aquatic ecosystems and have nourished humanity for millennia. Today, we proudly carry that legacy forward by offering a natural product that promotes health and wellbeing worldwide.

As we close the books on FY2024, we do so with a deeper understanding of our environmental and social impact than ever before. This past year has been one of meaningful progress and thoughtful reflection. While we celebrate our achievements, we remain humbled by the responsibility we carry—and more determined than ever to pursue continuous improvement and responsible growth.

We expanded our consumer portfolio with the launch of Astaxin Stockholm, our premium skincare line, and welcomed health-focused brands like Kyolic and Medcoat into the AstaReal family. These additions strengthen our mission to support public health through science-backed, natural solutions.

With over 75 human clinical studies, AstaReal® remains the most researched brand of natural astaxanthin on the market—underscoring our commitment to scientific rigor and evidence-based innovation. Our recent research into digital eye strain in children has yielded promising results, further highlighting the potential of natural astaxanthin to enhance quality of life.

Operationally, we've made significant strides in reducing our environmental footprint per product through production upgrades and cultivation optimisation. Completing our first double materiality assessment marked a key milestone in aligning our sustainability strategy with stakeholder expectations and financial relevance.

None of this would be possible without the dedication and collaborative spirit of our global team—from our production site in Gustavsberg to our newly established subsidiary in Shanghai. We are united by a shared purpose: to contribute to better health and wellbeing—for individuals, communities, and future generations.

As we look ahead, we remain committed to transparency, continuous progress, and creating meaningful impact. I invite you to explore this report and join us on our journey toward a healthier planet—and a healthier you.

Thank you for your continued support.



Daniel Flodqvist
CEO AstaReal AB

About AstaReal AB

The AstaReal Group is a global pioneer and expert in natural astaxanthin production, R&D and clinical science. As a global leader in the market, we recognise our responsibility to educate the world about natural astaxanthin's outstanding benefits for human and animal health, whilst also setting the highest standards of product quality and purity. With over 75 human clinical studies, AstaReal® is the market's most studied brand of natural astaxanthin.

As a privately-owned enterprise, we can respond quickly to market dynamics and evolving customer requirements, maintaining our competitive edge in a rapidly changing business environment. Our core philosophy emphasises

health within sustainability, guiding our development of our natural astaxanthin production that aim to contribute to better health for our endusers as well as industry progress in social and environmental responsibility. We are committed to transparency and third-party verification for continuous improvement of our sustainability efforts.

Our vision is **"to contribute to better health and wellbeing"**. To achieve this, we are actively implementing a sustainability strategy that promotes sustainable development, where social values, environmental responsibility and financial longevity go hand in hand.

Our core values

Sustainability begins with our core values. These principles guide our decisions, shape our culture, and define how we interact with our stakeholders and the world around us. They are essential to building a resilient, responsible, and forward-looking organisation.

External Focus

We are committed to understanding and engaging meaningfully with a broad range of stakeholders and the external environment. By anticipating future trends and needs, we gain insights that enable us to deliver solutions that meet customer expectations—both now and in the future.

Continuous Improvement

We strive to continuously improve by seeking smarter and more effective ways of working. We embrace innovation both within and beyond our organisation, aiming to stay one step ahead of the competition. We view failure not as a setback, but as a valuable opportunity for learning and growth.

Accountability

We take ownership of our commitments, actions, and decisions—regardless of our role or position. By doing so, we foster effective collaboration and contribute to the collective success of our organisation.

Collaboration

We believe in the power of working together. Collaboration means being part of a team with shared goals, respecting diverse perspectives, welcoming differing opinions, and fostering engagement and commitment. We prioritise cooperation over competition to achieve sustainable results.

Together, these values form the foundation of our sustainability strategy. These empower us to act with integrity, adapt to change, and create long-term value for our customers, employees, partners, and society at large.



Governance

The CEO of AstaReal AB, Daniel Flodqvist, who assumed the role in April 2025, has the ultimate responsibility for the company sustainability strategy and performance. Together with the members of the management team, and with the support from our Quality Assurance and Sustainability Manager, our CEO is responsible for ensuring that our business aligns with the sustainability strategy, policies, and objectives. The members of the management team are responsible for driving sustainability issues within their departments in cooperation with the QASM-manager.

The following governing documents guide AstaReal AB, and ensure that we follow our strategic sustainability plan to achieve our sustainability goals:

- **One Page Strategic Plan**
- **Goals and Objectives (Company level, department level and individual)**
- **Sustainability Policy**
- **Quality & Food Safety Policy**
- **Employee handbook**
- **FSSC 22000 and ISO9001 Management systems**

A follow-up of the sustainability goals and activities is performed twice a year and is reported to the management team, CEO and the board. The final sustainability report is approved by the same.

Reporting structure

In the writing of this sustainability report, we have had the Voluntary Sustainability Reporting Standard for Non-listed small- and medium-sized companies (VSME), published by EFRAG as a target. We have also been inspired by the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards (ESRS).

Based on article 3 of Directive 2013/34/EU, which defines three categories of small- and medium-sized undertakings according to their balance sheet total, their net turnover, and their average number of employees during the financial year, AstaReal AB meets the criteria for a medium-sized company.

This sustainability report has been prepared on a consolidated basis, encompassing AstaReal AB and its subsidiary, AstaReal Shanghai Biotech Ltd.

Table 1. Information about AstaReal AB sites, including AstaReal Shanghai Biotech Ltd.

Site	Address	Postal Code	City	Country	Coordinates (geolocation)
AstaReal AB, Registered Head Office	Forumvägen 14	131 53, Nacka	Stockholm	Sweden	Lat. 59.31020 Long. 18.16475
AstaReal AB, Production Plant and Warehouse	Britt-Louise Sundells gata 9	134 50 Gustavsberg	Stockholm	Sweden	Lat. 59.31973 Long. 18.38421
AstaReal AB, Laboratory	Ekeby Bruk 10L	752 63 Uppsala	Uppsala	Sweden	Lat. 59.848145 Long. 17.606470
AstaReal Shanghai Biotech Ltd	Room 5D11, No.8, Ruijinyi Road	Huangpu District	Shanghai	China	Lat. 31.2216

Table 2. Information about AstaReal AB including AstaReal Shanghai Biotech Ltd

	AstaReal AB	AstaReal Shanghai Biotech Ltd	Consolidated
Legal form	Private Limited Company	Limited Liability Company (Wholly Foreign-Owned Enterprise)	n/a
NACE sector classification code(s)	10890 - Manufacture of other food products. 10920 - Manufacture of prepared pet foods. 03220 - Freshwater aquaculture		n/a
Size of the balance sheet (in Euro)	9 789 559	100 527	9 751 471
Turnover (in Euro)	15 627 452	339 640	15 627 452
Number of employees in full-time equivalents	35	5	40
Year founded	2003	2024	n/a
Product categories	B2B Ingredients: Astaxanthin-rich algae meal, powders, and oil intended for use in food supplements, cosmetics and animal feed across various applications. B2C Products: Finished consumer products including food supplements (capsules, gummies, and tablets) and cosmetics (skin care).		



Certifications, memberships, co-operations & internal audits

AstaReal AB's Quality & Sustainability team collaborates closely with major certification bodies to ensure the delivery of the safest and most ethical products to our customers. Together, we strive to find sustainable solutions for the future. AstaReal AB is certified according to FSSC 22000 and ISO 9001, and the products produced at the production site in Gustavsberg, Sweden fulfil the criteria of Halal, Kosher, Informed ingredient and Vegan Society. In addition to the external audits mentioned, AstaReal AB performs yearly internal

audits covering all internal processes to make sure that we comply with external certifications as well as internal criteria. The production facility in Gustavsberg, Sweden has since 2021 been certified according to "Miljöbyggnad i Drift". Our subcontractors for further processing of products hold high level quality and food safety certification, many of them according to a GFSI-standard.



Sustainability at AstaReal

Our Vision

At AstaReal, our vision is to contribute to better health and wellbeing – for people, communities, and future generations.

Health is at the core of everything we do – shaping our products, decisions, and relationships. We take a holistic view of wellbeing, encompassing physical, mental, social, and environmental health.

Every day, we aim to make a positive impact by delivering safe, science-backed products and fostering an inclusive, supportive workplace.

Our commitment is long-term and rooted in continuous improvement, responsible development, and staying connected to science, nature, and the people we serve.

This isn't just a vision – it's how we work, every day.

Strategic Sustainability Governance and Double Materiality

AstaReal is committed to integrating sustainability into every aspect of our operations. Guided by the VSME framework, we focus on key environmental, social, and governance aspects that reflect our values and our role as a responsible producer of natural astaxanthin.

In 2023, AstaReal AB made decisive progress in strengthening its sustainability strategy. A comprehensive materiality assessment was conducted to identify the areas where the company can create the greatest positive impact and contribute meaningfully to a more sustainable future. These insights have shaped our strategic priorities and laid the foundation for our long-term sustainability work.

In 2024, we completed our first double materiality assessment, which has been instrumental in identifying and prioritising the most significant ESG issues for both our business and stakeholders. This process ensures that we address sustainability topics that are financially material as well as impactful from an environmental and social perspective.

To reinforce governance and accountability, head of departments have been assigned clear responsibility for leading and executing sustainability efforts within their respective areas. Each department is now implementing measurable sustainability targets and action plans aimed at reducing climate impact and improving performance across our most material issues.

AstaReal's sustainability strategy is rooted in our core purpose: to contribute to better health and well-being. This vision is operationalised through five strategic pillars:

- **Climate and Energy**
- **Circularity and Waste**
- **Water**
- **Best Employer and Healthy Employee**
- **Consumer Health & Safety**



Our business model

AstaReal AB's business is centred on the cultivation and processing of the microalga *Haematococcus pluvialis*, and the development and manufacturing of astaxanthin-rich products. These products are primarily intended for use in food supplements but also serve as high-value ingredients in food, animal feed, and cosmetics. Our operations further include the production and marketing of retail food supplements, as well as acting as a strategic partner to companies with complementary ingredients that support health and wellbeing.

Our fully in-house cultivation and processing of the microalga *Haematococcus pluvialis* at our Gustavsberg facility gives us the agility and expertise to innovate sustainably—step by step transforming our production into a model of responsible, climate-conscious manufacturing.

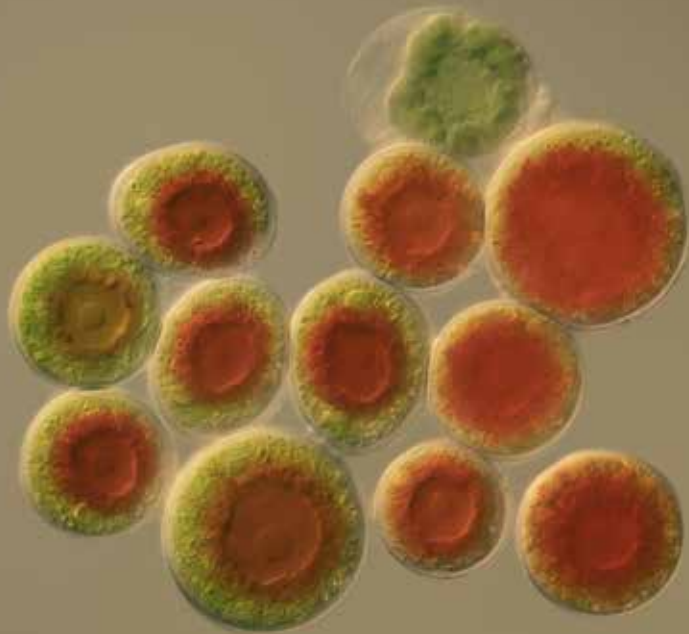
Our core market is the food supplement sector. Our customers include brand owners and contract manufacturers who develop products aimed at promoting health and wellness in both

humans and animals. As a recognised pioneer in natural astaxanthin production, AstaReal is committed to science, quality, and innovation.

We control the entire value chain—from cultivation to final product—ensuring exceptional quality, traceability, and product integrity throughout every step of the process.

Our B2B ingredients are distributed through direct sales and selected distributors across Europe and China, as well as via our mother company in Japan and our sister companies in USA, India and Singapore. Our B2C products are sold through e-commerce in China (via our local subsidiary), and through pharmacies and health stores in the Nordic region.

We work in close collaboration with retailers and key suppliers to deliver products that not only meet the highest standards but also make a tangible contribution to improved health outcomes and lifestyle quality for consumers.



Value chain

AstaReal AB is dedicated to ensuring that our commitment to sustainability is shown and integrated in every step of our value chain. We constantly strive to improve our standards, both within our organisation and among our suppliers and subcontractors, to work against unethical business practices, waste of natural resources, human rights abuses, and labour law violations.

Supplier Collaboration and Sourcing Overview

AstaReal AB works with approximately 50 suppliers. Roughly half of these provide critical input materials essential to our production processes. The remainder includes subcontractors, logistics providers, warehousing partners, and external laboratories.

Most of our input materials are sourced from suppliers within Europe, with some exceptions from the United States. Our subcontractors are also primarily based in Europe, including countries such as Sweden, France, Belgium, Germany, Switzerland, and Italy.

Code of Conduct

AstaReal's Code of Conduct outlines our expectations for suppliers to operate in a legal, sustainable, ethical, and socially responsible manner.

Our Code of Conduct is including social management systems, workers' rights, non-discrimination, fair remuneration, occupational health and safety, environmental protection, and ethical business behaviour. This comprehensive framework aims to improve social performance in global supply chains, ensuring respect for human rights, fair labour practices, and responsible business conduct.

Subcontractor and supplier assessment and audit

In addition to our Code of Conduct, AstaReal AB has implemented a procedure for assessing and approving of our suppliers, subcontractors and external warehouses. This procedure sets out the expectations and requirements they must meet, based on our certifications (ISO 9001, FSSC 22000) and internal criteria for sustainability, food safety and quality.

Based on an annual risk assessment, the frequency of on-site or digital audits at subcontractors and warehouses, or self-assessment

of material suppliers is determined. Audits and self-assessments are performed to verify and ensure compliance with AstaReal AB requirements and to promote responsible and ethical practices throughout the value chain. Regular audits help ensure suppliers meet expected standards and identify opportunities for improvement, supporting transparent, ethical, and socially responsible supply chain. Through this process AstaReal AB can ensure safe and responsible products.

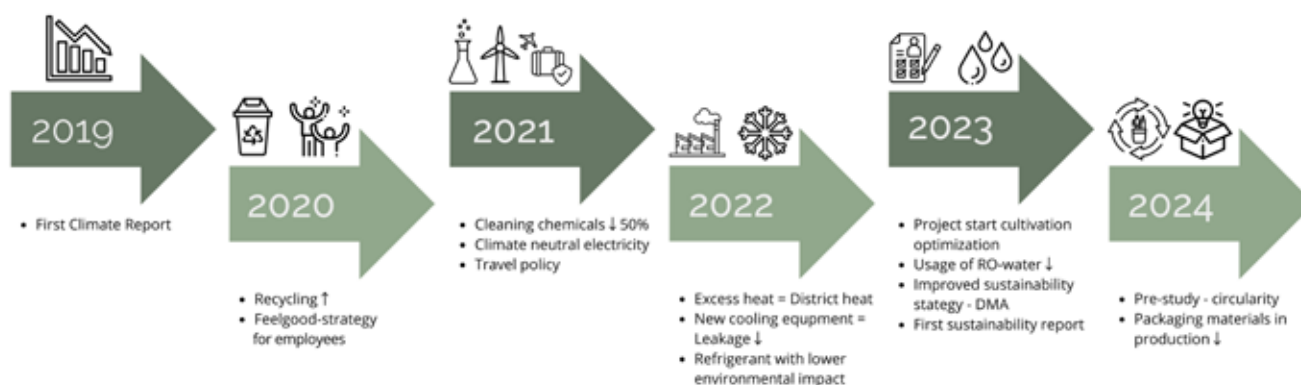


Figure 1. Our journey toward responsible production, from our first climate report in 2019 to where we stand today.

Stakeholders

AstaReal AB engages in ongoing dialogue with key stakeholders to ensure its operations align with evolving expectations, regulatory changes, and sustainability priorities. Stakeholder input are integrated through ongoing channels such as surveys, audits, digital platforms, and industry collaborations. This approach enables the company to identify and respond to material topics such as climate impact, food safety, working conditions, and responsible sourcing. The table below provides an overview of how AstaReal engages with different stakeholder groups, the purpose of these engagements, and the outcomes achieved.

Table 3. AstaReal Stakeholders.

Stakeholder	Channels of dialogue	Frequency	Material impact and important issues	Purpose of engagements	Outcome from engagements
Employees	<ul style="list-style-type: none"> Recruitment Feed-back through digital platforms Sustainability survey Company activities 1-1 dialog 	<ul style="list-style-type: none"> Once 1/week 1/year 4/year Weekly 	<p>PROMOTE HUMAN RIGHTS: Working conditions, secure employment, working hours, and adequate wages and benefits.</p> <p>PREVENT DISCRIMINATION</p> <p>SECURE DATA HANDLING</p> <p>HEALTH & SAFETY</p> <p>KNOWLEDGE SHARING</p>	<p>To understand employees' needs, expectations, and perspectives regarding work environment, equality, skills development, and sustainability.</p> <p>To promote engagement in the company's sustainability efforts and strengthen internal communication.</p>	Employee surveys show increased engagement and satisfaction.
Customers	<ul style="list-style-type: none"> Fairs & exhibitions Product releases Contract/agreement Newsletters Homepage 	<ul style="list-style-type: none"> Continuously Continuously Continuously Continuously Continuously 	<p>PROMOTE HUMAN RIGHTS</p> <p>NEW PRODUCT DEVELOPMENT (for more sustainable choices)</p> <p>HEALTH & FOOD SAFETY</p>	<p>To understand customer expectations regarding product quality, sustainability, transparency, and innovation.</p> <p>To gather feedback that drives improvement and strengthens long-term partnerships.</p>	<p>Customer feedback has contributed to:</p> <ul style="list-style-type: none"> Sustainable ingredient sourcing with full traceability ensured through verified suppliers. Recyclable, or biodegradable packaging. Lower environmental footprint for formulas, including plant-based options. Clear, transparent communication of product impact. <p>Engagement has also led to:</p> <ul style="list-style-type: none"> Accessible products via fair pricing and inclusive formats. Responsible marketing integrated
End consumers	<ul style="list-style-type: none"> Social Media Website 	<ul style="list-style-type: none"> Continuously Continuously 	<p>HEALTH</p> <p>NEW PRODUCT DEVELOPMENT</p> <p>CLIMATE RELATED ISSUES</p>	<p>To gain insights into how end users experience and interact with our products, with a focus on usability, safety, and sustainability.</p> <p>To ensure our offerings meet user needs and foster lasting satisfaction and trust.</p>	User feedback has improved product usability, safety, sustainability, and communication, boosting customer trust and satisfaction.
Nature	<ul style="list-style-type: none"> Scientific reports and publications Information from NGO's and experts 		<p>REDUCE GREENHOUSE GAS EMISSIONS</p> <p>CLIMATE ADAPTATION</p> <p>NATURE POSITIVE ACTIVITIES</p> <p>WATER, ENERGY & RAW MATERIAL CONSUMP.</p>	<p>To assess and mitigate the company's environmental footprint by implementing measures such as reducing energy and water consumption, lowering emissions, and minimising waste generation.</p> <p>To align operations with planetary boundaries.</p>	Investments in sustainable technologies and circular practices support continuous improvement and alignment with climate-related targets.
Suppliers (producers & distributors)	<ul style="list-style-type: none"> Approval process Audits/evaluation Risk assessment Contract/agreement 	<ul style="list-style-type: none"> Once 1/3 years 1/year Continuously 	<p>REDUCE GREENHOUSE GAS EMISSIONS</p> <p>CLIMATE ADAPTATION</p> <p>PROMOTE HUMAN RIGHTS</p> <p>FOOD SAFETY</p>	<p>To ensure that suppliers align with our sustainability standards, including environmental performance, ethical practices, and transparency.</p> <p>To build resilient, long-term partnerships that support responsible sourcing and innovation.</p>	<p>Supplier assessments and dialogue have led to improved environmental reporting.</p> <p>Collaborative efforts have resulted in better response to our questionnaires and more detailed information.</p>
Subcontractors	<ul style="list-style-type: none"> Approval process Audits/evaluation Risk assessment Contract/agreement Climate data collection NPD-process 	<ul style="list-style-type: none"> Once 1/year 1/year Continuously 1/year Continuously 	<p>REDUCE GREENHOUSE GAS EMISSIONS</p> <p>CLIMATE ADAPTATION</p> <p>PROMOTE HUMAN RIGHTS</p> <p>FOOD SAFETY</p> <p>INNOVATION</p>	<p>To ensure that sub-contracted operations meet our standards for environmental responsibility, quality, food safety and ethical conduct.</p> <p>To strengthen collaboration and risk management across outsourced activities.</p>	Joint efforts have enhanced food safety assurance.
Retailers	<ul style="list-style-type: none"> Contract/agreement 	<ul style="list-style-type: none"> Continuously 	<p>PROMOTE HUMAN RIGHTS</p> <p>HEALTH & SAFETY</p>	<p>To ensure that our products, as part of retailers' offerings, meet end-customer expectations regarding quality, sustainability, traceability, and food safety.</p> <p>To strengthen collaboration and support retailers in meeting their own sustainability and compliance goals.</p>	Joint efforts have enhanced food safety assurance, streamlined logistics, and supported the development of more sustainable packaging and distribution practices.
Authorities & other relevant organizations	<ul style="list-style-type: none"> Certification audits Regulatory updates & newsletters Clinical trials, applications Other business-related networks & lobbying 	<ul style="list-style-type: none"> 1/year Continuously Continuously Continuously 	<p>HEALTH AND FOOD SAFETY</p> <p>R&D</p> <p>LEGISLATIONS</p>	<p>To ensure compliance with applicable laws, regulations, and industry standards through active participation in audits, regulatory updates, clinical trials, and professional networks.</p>	<p>Engagement through certification audits and regulatory channels has strengthened compliance and risk management practices.</p> <p>Funding of PhD research projects and industry networks has supported innovation, improved credibility, and enabled proactive adaptation to regulatory changes.</p>

Materiality assessment

The double materiality matrix is a comprehensive tool used to assess the Environmental, Social, and Governance (ESG) impacts of a company's operations. It has helped us identify and prioritise issues that are both financially material to our performance and significant to our stakeholders. By incorporating both internal and external perspectives, the double materiality approach enables AstaReal AB to make informed decisions that address key sustainability challenges while aligning with stakeholder expectations.

Through this materiality assessment, we have identified 22 key areas relevant to the company — of which seven are classified as having very high impact on one of the two dimensions (see Figure 2).

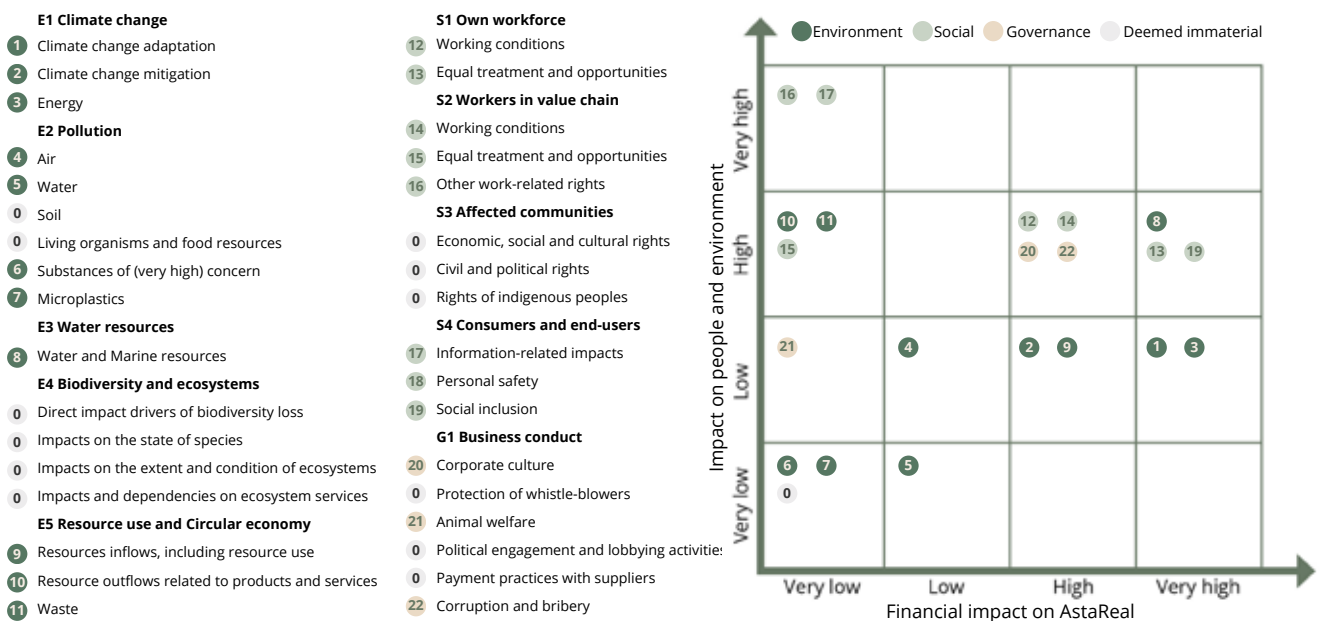


Figure 2. AstaReal double materiality assessment FY2024.

Based on our double materiality assessment, AstaReal AB ensures that sustainability efforts are focused across the entire value chain — targeting the areas where we have the greatest opportunity to make a meaningful impact.

In addition to our five key materiality pillars, ethics and business conduct are also fundamental to our operations. The topic of supplier relationships and ethical practices is not only a priority internally, but also a key concern for our external stakeholders.

This robust materiality assessment provides stakeholders with a clear understanding of the sustainability issues most relevant to our business, ensuring comprehensive coverage of sustainability issues applicable to our operations and strategic decision-making processes.



From Materiality to Action: Our Sustainability Focus Areas





Building on the results of our materiality analysis, we have identified a few key focus areas that are critical to our operations, stakeholders, and contribution to a more sustainable economy. These areas reflect where we have the greatest responsibility and potential to make a meaningful impact.























The table below outlines how these focus areas are translated into concrete actions through established practices, guiding policies, and future-oriented initiatives. The structure is based on our five strategic sustainability pillars:

- Climate and Energy
- Circularity and Waste
- Water
- Best Employer and Healthy Employee
- Consumer Health & Safety

For each topic, we present the measures we have in place, describe relevant actions and initiatives, and define measurable targets. Together, these elements form the foundation of our long-term sustainability strategy and support our ability to track progress, stay accountable, and continuously improve.

Table 4. Description of practices, policies and future initiatives for transitioning towards a more sustainable economy.

	Practices, policies & initiatives	What we aim to do	Short term targets (1-3 years)	Long term targets (3-20 years)	Contribution to Global goals
Climate Change	YES	<p>Minimizing our climate footprint through strategic, long-term initiatives and continuous improvements:</p> <p>Sector specific strategies:</p> <ul style="list-style-type: none"> • Following our FY2025 activity plan and beyond, we will drive continuous transition towards renewable energy; optimize microalgae cultivation; adopt sustainable packaging; strengthen sustainable supply chain and advance low-emission transport solutions. 	<p>Near term emission intensity goal:</p> <ul style="list-style-type: none"> • Reduce scope 1 & 2 emission per kg product produced with approx. 50% by FY2027 (base year FY2023) 	<p>Long term net zero commitment:</p> <ul style="list-style-type: none"> • We commit to achieving net-zero emissions across our entire value chain by 2045, in line with Sweden's climate targets. Based on our 2024 baseline, we will significantly reduce emissions and neutralize the small remaining share through permanent carbon removal solutions. <p><i>(Should Sweden's climate targets be updated, we will revise our ambition accordingly to remain aligned with national policy).</i></p>	   

Pollution	NO	n/a	n/a	n/a	n/a
Water and Marine Resources	YES	<p>Promote responsible water use in own operations and supply chain:</p> <ul style="list-style-type: none"> Optimizing cultivation to increase biomass yield per tank and reduce water use per unit produced. 	<ul style="list-style-type: none"> Reduce usage of water with approx. 50% per kg produced product by 2027. (Base year FY2023). 	<ul style="list-style-type: none"> Target to be set 	  
Biodiversity and Eco-systems	NO	n/a	n/a	n/a	n/a
Circular Economy	YES	<p>Ongoing exploration and improvement of circular solutions:</p> <ul style="list-style-type: none"> Performance of a pre-study on circular water usage in production. Performance of a pre-study on CO₂ capture for reuse in cultivation tanks. Improve the efficiency of our heat recovery system in production. 	<ul style="list-style-type: none"> To be decided, based on pre-study results. To be decided, based on pre-study results. Heat-recovery system providing 15 million kWh of heat per year. 	<ul style="list-style-type: none"> Target to be set 	   
Own Workforce	YES	<p>Work systematically to identify and improve our physical, organisational, and social work environment.</p> <ul style="list-style-type: none"> Enhance employee wellbeing by expanding our Feelgood Strategy with new health-focused initiatives. Advance workplace health and sustainability at our production site through forward-thinking solutions. Expansion and refurbishment of our existing production facility and associated office premises. 	<ul style="list-style-type: none"> Publish an updated and improved version of the employee handbook during FY2025. Employee survey results above index. Continuously arrange Team-building activities (min 4/year) for our employees. 	<ul style="list-style-type: none"> Target to be set 	   
Workers in the Value Chain	YES	<p>Promote care, fair working conditions, and social equity across the value chain:</p> <ul style="list-style-type: none"> Create a process for due diligence. Ensure that subcontractors and suppliers adhere to our Code of Conduct. 	<ul style="list-style-type: none"> Target to be set 	<ul style="list-style-type: none"> Target to be set 	    
Affected Communities	NO	n/a	n/a	n/a	
Consumers and end-users	YES	<p>Ensure consumer health and safety:</p> <ul style="list-style-type: none"> Find and implement new measurable ways on how we contribute to our customer's and consumer's health. Increase company-wide awareness and knowledge of food safety and continuously strengthen the food safety culture. Systematic quality improvements and close supplier collaboration to minimise non-conformities and customer complaints. Continuously update documentation and processes regarding content accuracy and sustainability. 	<ul style="list-style-type: none"> Optimise communication plan for higher health awareness of our customers. Continue exploring new algae ingredients and other plant-based alternatives for future new product formulations. Regularly educate all employees in food safety culture. Renewed certificate FSSC 22000, ISO9001, Halal, Kosher, Informed Ingredient, Vegan society. 	<ul style="list-style-type: none"> Target to be set 	
Business conduct	YES	<p>Promote responsible and transparent business practices:</p> <ul style="list-style-type: none"> Educating our employees on our Code of Conduct to prevent corruption. Integrate in on-boarding process for new employees. 	<ul style="list-style-type: none"> Code of conduct, Business Ethic Program or similar signed by 90% of our suppliers and sub-contractors in Europe. Code of conduct, Business Ethic Program or similar signed by 100% of our employees. 0 cases of bribery and corruption 	<ul style="list-style-type: none"> Code of conduct, Business Ethic Program or similar signed by 100% of our suppliers and subcontractors. 	    

Climate and energy

Climate reporting

AstaReal AB reports its greenhouse gas emissions using the “Our Impacts Sustainability Platform” by Eco-metrica. This platform features tailored modules and a climate tool with automated calculations and a comprehensive database of verified emission factors, and it is internationally recognised for climate reporting. The climate reporting aligns with AstaReal AB’s financial year (April 1 to March 31) and covers all Scope 1 and Scope 2 emissions.

A comprehensive mapping of all transportation activities was conducted in 2024, marking an important step towards advancing low-emission transportation methods.

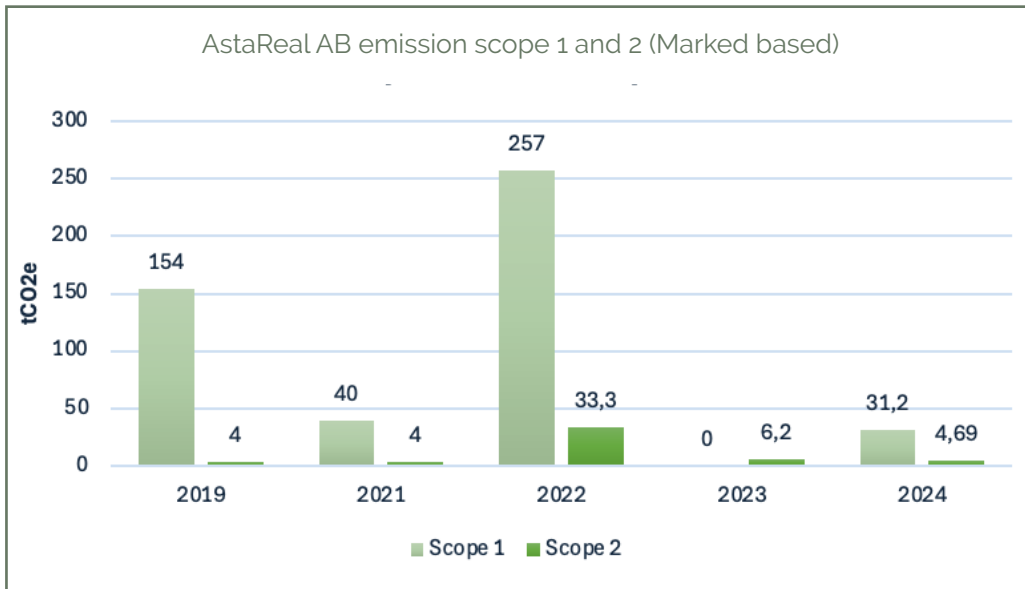


Figure 3. AstaReal emissions divided into Scope 1 and 2. FY2024 Scope 1 increased due to refrigerant-related emissions.

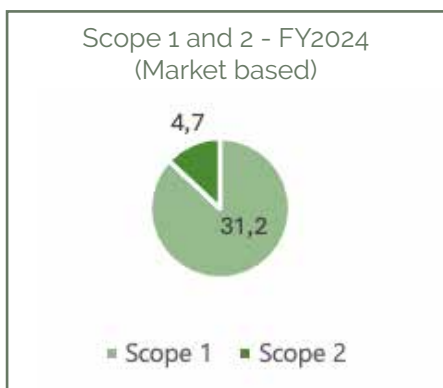


Figure 4. Greenhouse Gas Emissions by Scope, FY2024 (tCO₂e).



Efforts to Reduce Emissions and Energy Consumption

AstaReal is committed to reducing its climate impact through long-term, responsible action. Our sustainability efforts are driven by continuous improvement and a focus on the areas where we can make the greatest difference. We maintain close collaboration with our suppliers and subcontractors to jointly work towards reducing climate impact across the entire value chain.

Due to the nature of our production—algae cultivation, which requires both light and heat—our operations are energy-intensive. Since light and heat are essential for the survival and growth of the algae, reducing overall energy consumption is inherently challenging. Instead, we have chosen to take responsibility for our energy use, i.e. our Scope 2 emissions, through three key initiatives:

1. Heat Recovery System

Our state-of-the-art heat recovery facility supplies surplus energy to the local district heating network in Gustavsberg, Sweden. In FY2024, the system generated energy equivalent to the annual heating needs of approximately 2,000 households, covering around 20% of the town's total heating demand. This achievement is made possible through a sustainable business partnership with Vattenfall, one of Europe's largest producers and suppliers of electricity and heat.

2. Cultivation Optimisation

By optimising our cultivation processes to increase biomass yield per tank, we aim to reduce energy consumption per kg of produced product. This is a step toward becoming a more circular and resource-efficient company. Our goal is to reduce usage of electricity with approx. 50% per 1000/kg produced product by 2027 (Base year FY2023).

3. Use of Climate-Neutral Electricity

All electricity used in our production facilities and at our headquarter in Sweden is sourced from certified climate-neutral energy providers, reinforcing our commitment to sustainable operations.

Please note that these initiatives are not reduction targets, but initiatives to avoid and remove emissions.



Climate risks

AstaReal recognises the potential impact of both physical and transition-related climate risks on its operations. Physical risks may arise from acute events such as floods or heatwaves, or from chronic changes like rising temperatures and sea levels. Transition risks may stem from evolving regulations, technological shifts, market dynamics, or reputational factors. We assess our exposure and sensitivity to these risks across our assets and value chain, and we are committed to identifying appropriate adaptation measures where needed.

Table 5. *AstaReal climate risks.*

Climate-related hazards or climate-related transition events	Description	Value chain Upstream = UVC Own operation = OO Downstream = DVC	Time horizon (short-, medium-, long-term)	Risk assessment (High, medium, low)	Climate change adaptations
Emerging climate-related legislation and regulatory requirements	New regulations and bans targeting existing equipment and operational methods.	OO	Short-term	High	Modernising our production facility by investing in sustainable technologies and equipment to reduce environmental impact.
	External pressure to transition towards more sustainable production practices.	OO			Commit to the ongoing development of our sustainability strategy, with a clear focus on meeting defined environmental objectives.
	Increased competition in the astaxanthin/nutraceutical industry puts pressure on prices.	OO			Invest in production modernization to enhance capacity and optimise yield efficiency per cultivation unit, with the goal of minimising environmental impact per unit of output.
Raw Material Shortages	Rising raw material costs driven by climate change may significantly impact our production expenses and increase the cost of goods and services from subcontractors.	UVC	Short-term	High	Adapt our methods to reduce dependency on specific raw materials. Establish relationships with alternative suppliers and subcontractors to ensure supply chain resilience. Strengthen procurement controls to improve oversight and risk mitigation.
Environmental charges from suppliers	Rising environmental compliance costs among suppliers are being passed on, leading to higher procurement and production expenses.	UVC	Short-term	High	Carefully select our suppliers and maintain close, collaborative relationships.
Increased transportation costs	Transitioning to more sustainable transport solutions may lead to increased logistics costs.	UVC, DVC	Medium-term	High	Monitor developments and optimise every shipment, i.e. through full truckloads, consolidated transport, and weight reduction strategies.
Extreme weather	Increasingly frequent and unpredictable extreme weather events pose potential risks to our production processes, as well as to those of our subcontractors and external logistics partners.	UVC, OO, DVC	Short-term	High	Conduct risk assessments of our production facility and the geographic locations of subcontractors and warehouses, considering vulnerabilities to extreme weather events such as heavy rainfall, flooding, heatwaves, droughts, and wildfires.



Pollution of air, water and soil

AstaReal does not report such information.

Biodiversity

AstaReal's production facility in Gustavsberg, Värmdö, is located approximately 3 km from Ösbyträsk Nature Reserve—an area of ecological significance with protected wetland and forest habitats, designated under Swedish nature conservation regulations. While our operations are not situated directly within a biodiversity-sensitive area, we remain attentive to our environmental footprint and the potential indirect impacts on nearby ecosystems.

The total land use at our site includes a production facility of 2,420 m² and a garage area of 175 m². We continuously monitor our

land use and waste management practices to ensure alignment with local conservation efforts and to minimise any potential impact on surrounding biodiversity.

At present, we lack comprehensive data on the potential impacts on biodiversity related to raw material extraction, procurement, and our supply chain. However, we are committed to enhancing our understanding and transparency in these areas as part of our continuous improvement efforts.



Water

Water Stress Assessment

The company's production facility is located in Gustavsberg, Stockholm County. According to the WRI Aqueduct Water Risk Atlas, this area is not classified as being under water stress. Sweden, in general, benefits from abundant freshwater resources, and the Gustavsberg region is no exception. This geographic context supports the long-term sustainability of our water use at the site. Nevertheless, we remain committed to responsible water management and continue to monitor usage and efficiency across all operations.

Efforts towards responsible water management

Algae cultivation is inherently water-intensive, as water is a fundamental component in creating the optimal environment for algal growth. While this makes it challenging to significantly reduce overall water use, AstaReal is committed to managing its water resources responsibly. To address this, we are pursuing two key initiatives aimed at improving water efficiency and promoting circularity in our operations:

1. Optimised Cultivation Processes

By refining our cultivation methods to increase biomass yield per tank, we aim to lower our water use per unit of output. This contributes to a more resource-efficient and sustainable production model. Our goal is to reduce the withdrawal of water with approx. 50% per 1000/kg produced product by 2027 (Base year FY2023).

2. Closed-Loop Water Systems

We are exploring the integration of closed-loop systems to minimise freshwater intake and enable the reuse of process water within our production cycle.

In addition, raw materials and cleaning chemicals used in our production are carefully selected with environmental considerations in mind. Wastewater from the cultivation and production processes goes to treatment plants.

Water withdrawal

AstaReal AB monitors and manages its water use with the aim of minimising environmental impact and supporting sustainable production. In line with VSME disclosure B6, we report on water withdrawal and provide relevant context regarding water discharge and consumption.

Water is primarily used in our algae cultivation process. During harvesting, the majority of the water is separated from the biomass through decanting and is discharged to the municipal wastewater system. This constitutes the main portion of our water discharge. In the subsequent spray-drying step, a small amount of water is lost through evaporation. This is considered water consumption, as it is not returned to the environment. However, the volume is minimal in relation to total water withdrawal. The end-product, our algae meal, has a water content of only 1-3%.

Water withdrawal by Office Location

Table 6. In the absence of direct water consumption data for leased office spaces, annual water use has been estimated based on an assumption of 54 liters per employee per working day. For the laboratory, additional estimations have been made based on the operational use of analytical equipment. (NOTE. This data does not include water withdrawal from production at subcontractors).

Site	m3	Method
AstaReal AB, Registered Head Office, Nacka	118	Estimated
AstaReal AB, Production Plant and Warehouse	38 423	Actual
AstaReal AB, Laboratory, Uppsala	84	Estimated
AstaReal Shanghai Biotech Ltd	70	Estimated
AstaReal Total water consumption	38 695	

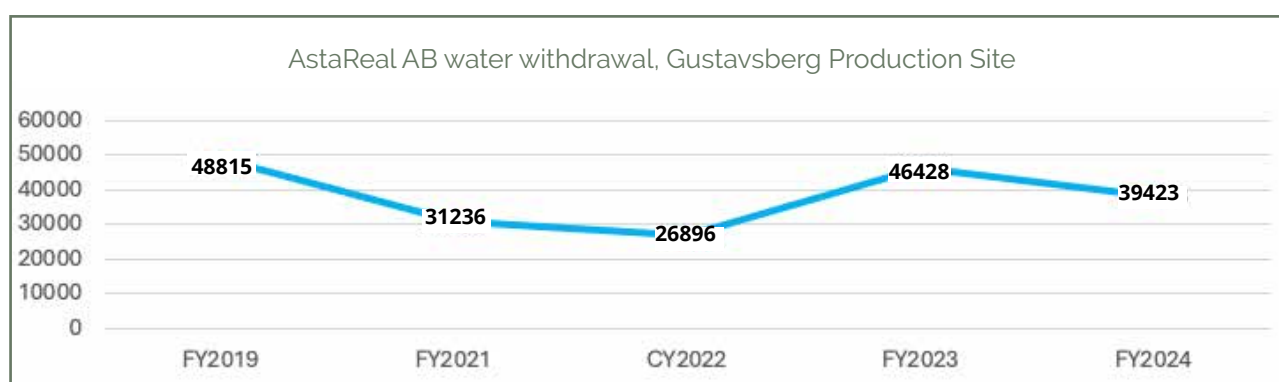


Figure 5. AstaReal Water withdrawal spanning from 2019 to 2024.

Circularity and Waste

This section outlines AstaReal's strategies for advancing circularity within our production unit, in line with our strategic commitment to sustainability. We prioritise the responsible management of materials, products, and waste to minimise environmental impact and support long-term business resilience. Our approach includes the use of energy surplus and resource-efficient production methods.

We also recognise the interconnectedness of circularity with other environmental and social factors. Our efforts align with:

- ▶ **Climate Change & Energy:**
Reducing energy in local community through circularity.
- ▶ **Water:**
Promoting responsible resource use.

Through transparent reporting and continuous improvement, we aim to demonstrate progress toward a circular economy.

AstaReal AB strives to increase circularity and resource efficiency within our own production, while also encouraging more sustainable practices among our subcontractors. Our efforts include reducing water usage, minimising the use of environmentally hazardous chemicals, reducing paper and plastic consumption, and increasing the use of recycled and recyclable materials. We also continue to explore circular solutions in our production processes, such as the reuse of heat and process water.

During FY2024, we have started to investigate the following circular alternatives:

- Recirculation of wastewater
- Recirculation of harvest water
- CO₂ capture

In addition, we launched a new waste-reduction initiative at our Gustavsberg facility, where we transitioned from a double-bagging method to a single-bag solution for packaging algae powder. This change significantly reduced packaging material per unit while maintaining product safety and quality standards.

Table 7. Waste generated by AstaReal FY2024. (NOTE. This does not include waste generated at subcontractor production).

Type of waste	kg	Waste diverted to recycle or reuse	Waste directed to disposal
Non-hazardous waste			
Incinerable waste	3830		x
Glass	25	x	
Bulky waste	2580	x	
Rigid and soft plastic packaging	1477	x	
Corrugated cardboard	2560	x	
Office paper	116	x	
Hazardous waste			
Refrigerant, R452A	4,7		x
Refrigerant, R404A	8		x
Fluorescent tubes	1645	x	
Equipment containing freon	100		x
Electrical equipment containing hazardous components	5300		x



Best Employer and Healthy Employees

AstaReal values its employees and prioritises health, safety and wellbeing. Our vision is “To contribute to better health and wellbeing,” and we believe it is essential to live this vision and demonstrate it to both employees and stakeholders. By fostering a healthy, supportive, and engaging work environment, we not only enhance individual wellbeing but also strengthen performance and our ability to attract and retain talented colleagues.

We work proactively to increase health through preventive measures, including health-promoting activities, awareness initiatives, and continuous improvements to the work environment. We are equally committed to ensuring a respectful and inclusive workplace. All employees are treated with dignity and fairness, regardless of gender, gender identity or expression, ethnicity, disability, religion or belief, sexual orientation, or age.

“I am proud to work for AstaReal whose mission to pioneer algae-based innovation resonates deeply with my belief that nature holds the key to wellness. I’m fascinated by the company’s legacy of world-leading astaxanthin research and its focus on creating products with transformative health impact.

What I love most is the supportive, forward-thinking culture: a globally diverse team dedicated to pushing boundaries, while prioritizing environmental responsibility. Being part of AstaReal makes every day rewarding and fulfilling.”

**/Gary Liu,
Country Manager China**

AstaReal AB is an international company working for health and sustainability with its innovative food supplement products. AstaReal supports health and well-being by supporting its employees with health allowance, mental-health activities and an integrative approach for work-life balance.

This includes, joining meetings online and team activities bringing together the whole AstaReal team from Gustavsberg, Nacka and Uppsala. With this approach AstaReal supports health and wellbeing and sustainability internally within the company and externally to its customers and partners.”

**/Anja Billhardt,
Laboratory and R&D Manager**



Workforce

General characteristics

All employees of AstaReal are either on permanent contracts or on contracts intended to become permanent. In addition, temporary summer substitutes are employed during the vacation period as well as weekend workers. The diagrams below show the number of employees divided by gender and country of employment contract.



Figure 6 and 7. AstaReal country of employment contract and gender distribution FY2024.

Health and safety

During FY2024, no fatalities were recorded as a result of work-related injuries or occupational ill health. A total of six work-related incidents and three safety observations were reported. All events were documented and addressed in accordance with our internal health and safety protocols, with a focus on continuous improvement and risk mitigation. Throughout the year, ongoing improvements and refurbishments were carried out in our production facility and associated office premises to further enhance safety and working conditions.

Remuneration, collective bargaining and training

All employees are covered by collective bargaining agreements. Salaries are market-based, and all employees earn above the statutory minimum wage. The annual salary review conducted this year showed that, on average, women earn more than men within the organisation.

During the reporting period, no incidents related to human rights violations, corruption, bribery, or other breaches of ethical standards have been identified internally or, to our knowledge, within our value chain.

AstaReal has also implemented a reporting system through the platform Winningtemp, which enables employees to report any concerns related to human rights or other forms of misconduct. Reports are automatically directed to designated individuals within the management team, ensuring timely and appropriate follow-up.

As part of our commitment to continuous development, AstaReal conducts an annual competence mapping to identify and follow up on training needs. Training activities are carried out on an ongoing basis. At present, we do not report training hours or participation broken down by gender.

Employee survey

Starting in FY2024, we transitioned to only using Winningtemp to continuously monitor employee well-being and engagement. The platform provides real-time insights and index-based metrics, which now form the basis for our goal setting and follow-up processes related to organisational culture and employee satisfaction. The results FY2024 show that we fulfil the index of 7,7, with the aspiration to exceed.

Arrangement of activities

As part of our commitment to employee wellbeing and engagement, AstaReal aims to organise at least four feelgood activities per year. During FY2024, the following activities were arranged: dietary counselling, participation in a local running event, a company day focused on mental health including participation in the World Mental Health Run, and a step challenge. These initiatives are designed to promote physical and mental wellbeing, strengthen team spirit, and contribute to a positive workplace culture.

Consumer Health and Safety

AstaReal works to inspire and contribute to better health and increased wellbeing among our stakeholders. We do this by actively engaging in health-promoting initiatives and by initiating stakeholder collaborations around health issues of importance to society, including sponsorships and charitable efforts.

As a producer of food supplements, we recognise our responsibility to ensure the health and safety of consumers. This responsibility requires strict adherence to established procedures and regulatory compliance to minimise any risk of harm.

We are also aware of the risk of misleading information reaching customers and consumers through non-scientific claims in media, and we work actively to counter this through evidence-based communication.

At the same time, we see great opportunities to contribute positively to public health. Our products, rich in antioxidants, have the potential to help improve human health and contribute to a healthier lifestyle.

Through research and development, we aim to expand scientific knowledge and demonstrate the health benefits of our offerings. Our certifications—FSSC 22000, ISO 9001, Halal, Kosher, Vegan Society, and Informed Ingredient—serve as proof of our commitment to quality, safety, and transparency, and position us as a reliable partner for customers and consumers alike.



Health and Safety promoting activities and initiatives

The results of the FY2024 communication plan aimed at increasing health awareness among our customers and consumers are as follows:

Table 8. Number of planned marketing materials and presentations for FY2024 and corresponding achievements.

Task	Goal FY2024	FY2024 achievement
White papers & trade articles	10	17
Presentations	2	6
Press releases	2	4

We strive to provide evidence-based insights on astaxanthin and nutrition, to support better health choices.



Research & Development

The AstaReal study on astaxanthin's impact on digital eye strain in children showed encouraging results for 4 mg daily astaxanthin supplementation, including:

20% more reduction in chronic digital eye strain symptoms compared with placebo, the increase in acute visual fatigue symptoms in the astaxanthin group was 57% lower than that observed in the placebo group, and improvements in stereopsis, pupillary light reflex, and tear production.

New Product Development

AstaReal's Nex Product Development pipeline with new formulations is extensive and developed to meet both our B2C and B2B customer needs. During 2024 we have focused on evaluation of astaxanthin in combination with new plant-based ingredients to strengthen our knowledge about astaxanthin stability in formulations. Our aim next year is to review the total product portfolio and decide which formulations will be launched as B2C products under the brand Astaxin.

Astaxin® Stockholm skincare line

In October 2024, we launched Astaxin Stockholm – a premium skincare range developed and manufactured in Sweden.

The current lineup consists of seven products, including four launched during 2024: Face Mist, Face Serum, Face Cream and Lip Balm.

All products are infused with our own ingredient astaxanthin. The formulas are developed for consumers in Sweden, across Europe, on-line and off-line markets in China, with potential expansion beyond these regions.

We have been meticulous in developing each product, from ingredients to packaging, to ensure high performance and premium quality.

Astaxin products are packaged in recycled and recyclable materials, underscoring our dedication to sustainability. The design features Nordic minimalism aligning with our premium positioning.

Retail

In 2024, we have established a retail department focusing on building a strong consumer portfolio of brands and products. Following the summer, we concluded our external distribution partner and assumed full responsibility for servicing the consumer market.

Since then, we have expanded our consumer portfolio with two new health product brands: Kyolic and Medcoat. Kyolic is a garlic-based supplement that supports heart and cardiovascular health, distinguished by its strong research foundation- backed by over 900 scientific publications spanning more than 50 years.

Medcoat is a patented swallowing aid that makes tablets easier to swallow by coating them with a smooth, taste-enhancing layer – offering valuable support for children, the elderly, and patients with dysphagia.

Medcoat can be purchased over-the-counter as well as prescribed. This expansion broadens our customer and consumer base, enabling us to reach even more people in support of a healthier lifestyle.

Governance metrics

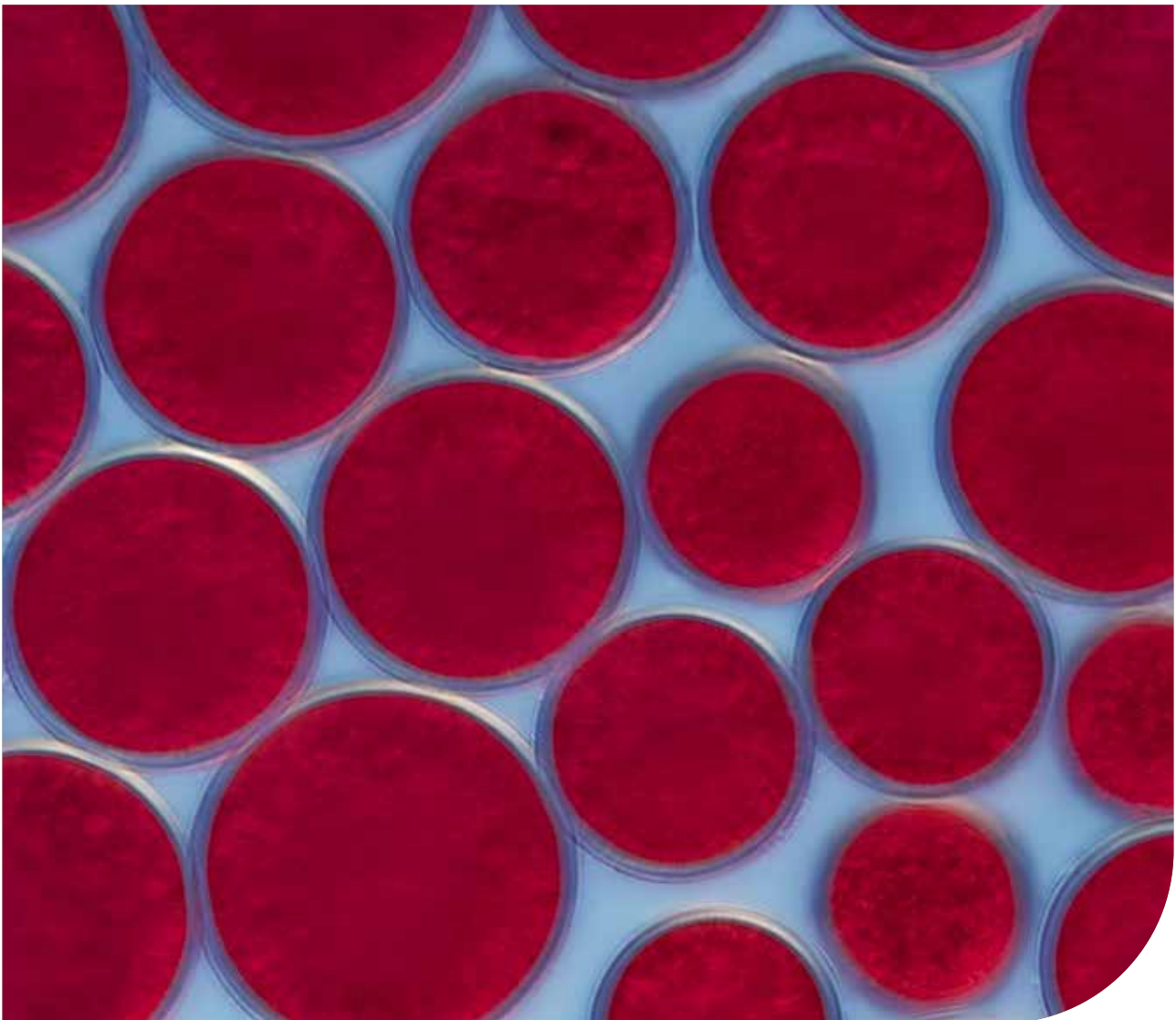
This section outlines our commitment to responsible governance and ethical business conduct, in line with global standards and stakeholder expectations and aligning with our strategic commitment to sustainability. We maintain our sustainability initiatives and implement risk-based due diligence to identify and address environmental, social, and governance (ESG) risks.

Business Ethics and Code of Conduct

We are committed to promoting responsible and transparent business practices. As part of our efforts to prevent corruption, all employees are educated in our Code of Conduct. By raising awareness and setting clear ethical guidelines, we ensure responsible behaviour throughout the organisation.

We maintain high standards for our partners. Our goal is for 100% of our suppliers and subcontractors to sign our Code of Conduct, Business Ethics Program, or an equivalent policy – demonstrating a shared commitment to integrity and ethical business practices.

Over the past year, we have had zero reported cases of bribery or corruption, confirming the effectiveness of our preventative effort.



Indicator results

Table 9. AstaReal Indicator results.

Environmental indicators	Unit	FY2019	FY2021	CY2022	FY2023	2024
Total Scope 1 emissions	tCO ₂ e (Market based)	154	40	257	0	31
Total Scope 2 emissions	tCO ₂ e (Market based)	4	4	33	6	5
Water	tCO ₂ e			2,8	4,7	3,9
Social indicators	Unit	FY2022		FY2023		FY2024
Tot. number of employees	No.	31		32		40
Gender distribution of employees	%	Men: 20 Women: 12		Men: 19 Women:12		Men: 25 Women: 15
Staff turnover (Permanent- and probationary employees, i.e. fixed term employees not included)	%	28		6		19
Collective agreement for employees where applicable	%	100		100		100
Health activities arranged for employees	No.	2		3		4
Health check for employees (Every second year)	YES/NO	NO		YES		NO
HLR-education for employees (Every second year)	YES/NO	YES		NO		NO
Wellness allowance for employees	YES/NO	YES		YES		YES
Employees using their wellness allowance	%	47		52		60
Employee short term sick-leave	%	1,87		1,88		1,65
Accidents at work leading to personal injury or illness.	No.	0		5		6
Product recalls	No.	0		0		0
Governance indicators	Unit	FY2019	FY2021	CY2022	FY2023	FY2024
Number of convictions, total amount of fines incurred for the violation of anti-corruption and antibribery laws.	No.	0	0	0	0	0

