

Opportunities

Item	Details	Financial impact	Assessment of financial impact around 2050					
			1.5°C scenario			4°C scenario		
			Details			Details		
Market	Opportunity of expanded PBF*1 market	Increased sales of Group products in the plant-based protein (e.g., meat and dairy alternatives) market	<p>The Group seizes the following opportunities by leveraging its differentiated and integrated technologies and by co-creating solutions with customers to enhance product competitiveness through the plant-based addition of better flavor, richness of taste, and aroma, resulting in dramatically increased sales for the Group.</p> <ul style="list-style-type: none"> Consumption of plant-based protein (e.g., meat and dairy alternatives) thrives and the global market for such alternatives grows dramatically, mainly among Millennials, Generation Z, and vegetarians. These groups hold the view that raising livestock requires large amounts of feed, water, and land, causing water shortages and deforestation and exacerbating climate change and loss of biodiversity. Therefore, they attach greater importance to sustainability and express their values through their consumption behavior. While the demand for meat and dairy increases mainly in low- and middle-income countries, there is a global supply shortage of meat and dairy. This is due to global population growth, economic development and dietary changes as well as adverse impacts on livestock production caused by extreme weather events, natural disasters, and the rise in the average global temperature due to climate change. Demand for plant-based protein (e.g., meat and dairy alternatives) increases to make up for this shortage. Demand for plant-based protein expands as Japan, the U.S., and Europe transition away from their dependency on animal protein toward plant-based protein, and due to a shortage of protein in regions such as Sub-Saharan Africa and South Asia. 			<p>The Group seizes the following opportunities by leveraging its differentiated and integrated technologies and by co-creating solutions with customers to enhance product competitiveness through the plant-based addition of better flavor, richness of taste, and aroma, resulting in increased sales for the Group.</p> <ul style="list-style-type: none"> In contrast to the 1.5°C scenario, consumer behavior that attaches importance to sustainability does not gain traction. However, demand for meat and dairy increases mainly in low- and middle-income countries because of global population growth, economic development, and dietary changes, even as extreme weather events, natural disasters, and the rise in the average global temperature caused by climate change adversely impact livestock production, resulting in a global supply shortage of meat and dairy. Demand for plant-based protein (e.g., meat and dairy alternatives) increases to make up for this shortage. Demand for plant-based protein expands as Japan, the U.S., and Europe transition away from their dependency on animal protein toward plant-based protein, and due to a shortage of protein associated with population growth in regions such as Sub-Saharan Africa and South Asia. 		
			Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts	Impact level
			Within 5 years	Longer than 10 years	Medium	At least 11 years from now	Longer than 10 years	Small
Resilience	Opportunity relating to new health issues caused by climate change	Increased sales due to growing consumer needs for immunity-boosting, highly nutritious, high-protein, and low-sugar foods	<p>The Group seizes the following opportunities by leveraging new and existing technologies from the Group's R&D in the polysaccharide business, stabilized DHA/EPA business, and other functional high-value-added products businesses, as well as the chocolate and plant-based protein businesses, leading to increased sales for the Group.</p> <ul style="list-style-type: none"> Global climate change has shifted the temperature region of infectious diseases such as dengue fever and malaria, causing outbreaks in countries and regions where they have never occurred before. Also, there are new health issues such as higher cases of heat stroke. Health awareness grows over time as a result. Adding to the increase in these infectious disease outbreaks and cases of heat stroke associated with global warming is an anticipated sharp rise in lifestyle diseases such as obesity and diabetes and age-related illnesses such as dementia in regions including South Asia, Europe, Africa, North America, and Central and South America. This leads to greater consumer needs for immunity-boosting, highly nutritious, high-protein, and low-sugar foods that help prevent such health issues, driving increased demand and market expansion for lactic acid bacteria, DHA/EPA, polyphenols, proteins, peptides, and low-sugar chocolates. The values of the SDGs spread in society and the concept of One Health*2 gain traction across all generations, increasing demand for products focused on human and environmental health. As a result, the Group sees rising demand for its PBF products, which contribute to environmental conservation and improved health through their potential benefits in preventing infectious diseases, heat stroke, lifestyle diseases such as obesity and diabetes, and age-related illnesses such as dementia. 			<p>The Group seizes the following opportunities by leveraging new and existing technologies from the Group's R&D in the polysaccharide business, stabilized DHA/EPA business, and other functional high-value-added products businesses, as well as the chocolate and plant-based protein businesses, leading to increased sales for the Group.</p> <ul style="list-style-type: none"> Global climate change has shifted the temperature region of infectious diseases such as dengue fever and malaria, causing outbreaks in countries and regions where they have never occurred before. Also, there are new health issues such as higher cases of heat stroke. Health awareness grows over time as a result. Adding to the increase in these infectious disease outbreaks and cases of heat stroke associated with global warming is an anticipated sharp rise in lifestyle diseases such as obesity and diabetes and age-related illnesses such as dementia in regions including South Asia, Europe, Africa, North America, and Central and South America. This leads to greater consumer needs for immunity-boosting, highly nutritious, high-protein, and low-sugar foods that help prevent such health issues, driving increased demand and market expansion for lactic acid bacteria, DHA/EPA, polyphenols, proteins, peptides, and low-sugar chocolates. In contrast to the 1.5°C scenario, the values of the SDGs and the concept of One Health*2 do not gain traction in society and the demand for products focused on human and environmental health does not increase. As a result, demand for the Group's PBF products — which contribute to environmental conservation and improved health through their potential benefits in preventing infectious diseases, heat stroke, lifestyle diseases such as obesity and diabetes, and age-related illnesses such as dementia — does not rise as much as in the 1.5°C scenario. 		
			Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts	Impact level
			Within 10 years	Longer than 10 years	Medium	At least 11 years from now	Longer than 10 years	Medium
<p>Response approach</p> <ul style="list-style-type: none"> Recognize changing market dynamics and needs — such as rising health consciousness and ethical awareness due to climate change impacts — as an opportunity, we will solve social issues and foster next-generation businesses in a decarbonized society by being environmentally conscious through sustainable procurement, and providing the plant-based ingredients that are our specialty. By establishing the systems needed to develop products and promote business strategies that accurately respond to market trends, we will focus on new challenges such as revising our business portfolio for high value-added products and optimizing our production across the Group in anticipation of these future changes in the business environment. By building and actively participating in an industry-academia consortium with research institutions worldwide and promoting open innovation using our Global Innovation Center Europa (GICE) as a hub, we will acquire new technologies and develop global human resources that will accelerate the creation of social value in a decarbonized society. 								

*1 PBF: Plant-based food

*2 One Health: A concept recognizing the fact that safeguarding the health of ecosystems and animals serves the health of humans as well, inviting everyone to think of and work to protect the health of people, animals and ecosystems as one living system.