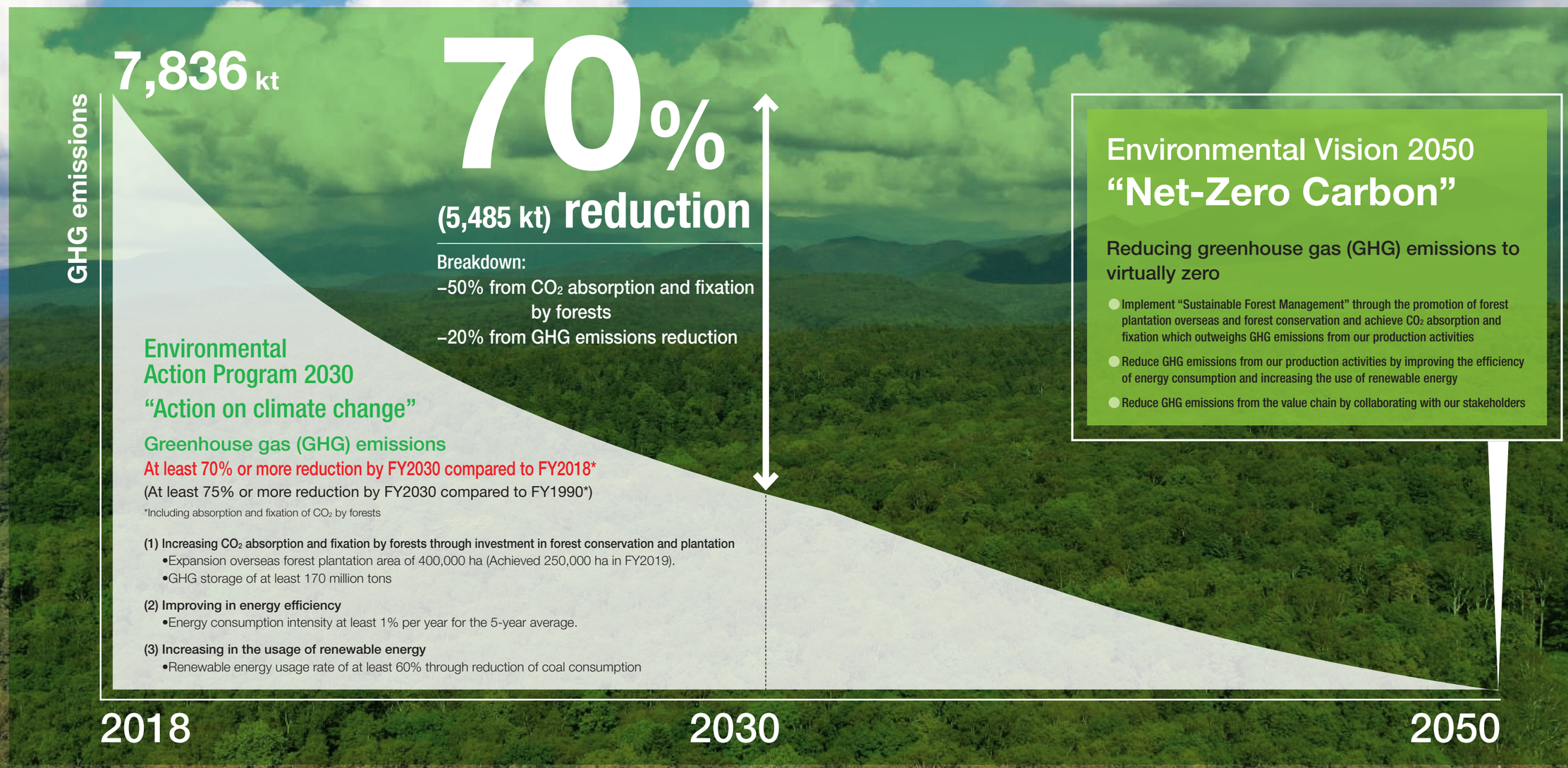
Aiming for Net-Zero Carbon by 2050

For the Oji Group that utilizes a range of renewable resources, including wood as raw materials, the conservation of the natural environment is essential from the perspective of business continuity. We also believe that it will be able to enhance the sustainability of its business activities through proactive measures to address the issue of climate change.

In order to clearly lay out our course of action, our Group formulated our "Environmental Vision 2050," which declares our aims for 2050 and centers around our goal of **net-zero carbon**, and our "Environmental Action Program 2030," which function as a milestone on the way to this Vision, in September 2020.



Environmental Action Program 2030

"Action on climate change"

Greenhouse gas (GHG) emissions

At least 70% or more reduction by FY2030 compared to FY2018*

(At least 75% or more reduction by FY2030 compared to FY1990*)

*Including absorption and fixation of CO_2 by forests

(1) Increasing CO_2 absorption and fixation by forests through investment in forest conservation and plantation
- Expansion overseas forest plantation area of 400,000 ha (Achieved 250,000 ha in FY2019).
- GHG storage of at least 170 million tons

(2) Improving in energy efficiency
- Energy consumption intensity at least 1% per year for the 5-year average.

(3) Increasing in the usage of renewable energy
- Renewable energy usage rate of at least 60% through reduction of coal consumption

Environmental Vision 2050 "Net-Zero Carbon"

Reducing greenhouse gas (GHG) emissions to virtually zero

- Implement "Sustainable Forest Management" through the promotion of forest plantation overseas and forest conservation and achieve CO_2 absorption and fixation which outweighs GHG emissions from our production activities
- Reduce GHG emissions from our production activities by improving the efficiency of energy consumption and increasing the use of renewable energy
- Reduce GHG emissions from the value chain by collaborating with our stakeholders

Environmental Action Program 2030 Please see here for more information ➡ https://ojiholdings.disclosure.site/en/themes/150/

Environmental Vision 2050 Please see here for more information ➡ https://ojiholdings.disclosure.site/en/themes/191/

The Oji Group's Environmental Vision 2050, established to help us to achieve our target vision, sets out our intention to aim toward net-zero carbon by FY2050. As a milestone on the way to this vision, we set the target of reducing our GHG emissions* 1 by 70% (as compared to FY2018 emissions of 7,836 kt) in our Environmental Action Program 2030 in September 2020.

The FY2030 reduction target comprises the GHG emissions reductions and the Net increment in carbon stocks by forests* 2 owned by the Oji Group and we have organized a project team to both draw up a roadmap toward this goal and increase the likelihood of achieving our target.

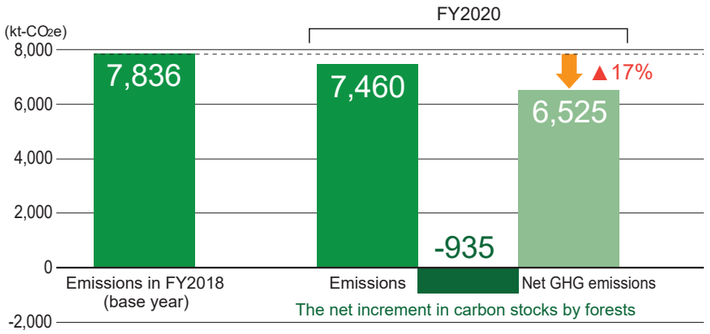
*1 Scope 1 (direct emissions from fuel combustion) + Scope 2 (indirect emissions from the purchase of electricity and heat)
*2 The net increment in carbon stocks by forests = CO_2 absorbed per year with the growth of trees − CO_2 emissions per year with felling.

	Category	Sub-category	GHG reduction (kt-CO_2e)	GHG reduction	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GHG emissions reduction	Improve energy efficiency	Energy conservation	204	2.6%	Continue to reduce energy consumption by 1.0% or more per year, averaged over five years									
	Increase the percentage of renewable energy use	Reducing coal consumption	787	10.1%	Technological research, development, investment decisions, installations, etc.								Installation of equipment, operation	
		Installation of private solar panels, etc.	60	0.7%	Installation planning, investment decisions, installations									
	Transform the business structure	Move toward business structure with low GHG emissions	516	6.6%	Shift toward low GHG emissions business									
Subtotal			1,567	20%										
CO_2 absorption by forests	Invest in forestry conservation and tree plannting	Expanding forest plantations	3,918	50%	Overseas production forests total 260,000 ha →									Overseas production forests total 400,000 ha
					Search for sites, land surveys →		Assessment of business feasibility →		Consideration of acquisition, decision					
Total			5,485	70%										

Emissions were reduced by 17% in FY2020, toward our target of a 70% reduction by FY2030 (including the Net increment in carbon stocks by forests). Progress toward our reduction target is at 24%.

Going forward, we will continue to actively pursue the reduction of GHG emissions and increase of the net increment in carbon stocks by forests.

FY2020 Net GHG Emissions



Toward Achieving Our Targets

GHG Emissions Reduction

A key area for reducing emissions is the reduction of coal consumption. We own 16 coal-fired boilers in Japan and are examining the possibility of fuel conversion for 12 of these, not including boilers with low coal consumption and backup boilers.

In order to bring our coal consumption to zero by 2050, we plan to move forward with a switch to wood and other fuels, modification of our coal-fired power generators with a view to prospective co-firing with hydrogen or ammonia, and installation of private solar panels by the interim point of FY2030.

We will also strive to achieve our target of reducing GHG emissions by 20% (as compared to FY2018) through ongoing, thorough energy conservation measures and a shift toward a business structure with low GHG emissions.

Further, we will continue our efforts to contribute to lowering third-party GHG emissions by providing renewable energy through biomass power generation, hydroelectric power generation, and other forms of production from renewable sources.


Biomass power generation facility scheduled to begin operating in September 2022

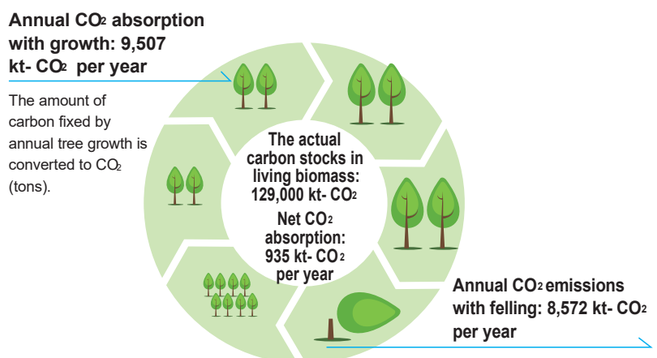
Expanding the net increment in carbon stocks by Forests

The Oji Group owns a total of 580,000 ha of forest, comprising production forests totaling 190,000 ha in Japan and 260,000 ha overseas and conservation forests of 130,000 ha, and practices sustainable forest management. (➡pp. 39–40, 87–89)

As a result of our sustainable forest management, the net increment in carbon stocks by forests (our production forests and conservation forests) was 935,000 tons-CO_2 per year, while the actual carbon stocks in living biomass*3 reached 129,000 kt by the end of FY2020.

Our Environmental Action Program 2030 (established in September 2020) set out the target of increasing the area of our forests by a further 150,000 ha by FY2030.

We estimate that this will bring the net increment in carbon stocks by forests on up to the equivalent of approximately 50% of FY2018 GHG emissions. As of March 2021, preliminary calculations suggest that the expenses associated with expanding our forests by 150,000 ha will amount to approximately 100 billion yen.



*3 The CO_2 stocks in Oji's 580,000 ha of forest
†For details, see ESG Data/Environment/Table 20 ➡ https://ojiholdings.disclosure.site/en/themes/116/
Figures for CO_2 absorption and fixation by forests and GHG emissions are for consolidated companies.