Boehringer Ingelheim

From commitment to impact,
Advancing decarbonization in industry



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Our DNA

The patient is at the center of everything we do

Innovation is our driving force

Our people, our drive

Sustainability, our commitment

We are a family-owned biopharmaceutical company, founded in 1885 in Ingelheim (Germany), dedicated to human and animal health.

With approximately 54,500 employees worldwide.

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Sustainability, our commitment

Our commitments for 2030

50 million

Expand access to healthcare for 50 million people in underserved communities.

50 million

Improve the lives of another 50 million people in underserved communities around the world, engaging employees, partners and social entrepreneurs to collaborate and create solutions that lead to more economically sustainable, inclusive and healthy communities.

35 billion

Invest €35 billion in healthcare innovation for noncommunicable diseases and a further €250 million in partnerships to combat emerging infectious diseases.

Mitigate the environmental impact of our activity

We will be carbon neutral in our operations, halve our resource footprint across the value chain and continue to create best practices in a range of areas, from water and landfill waste management to the fight against antimicrobial resistance.

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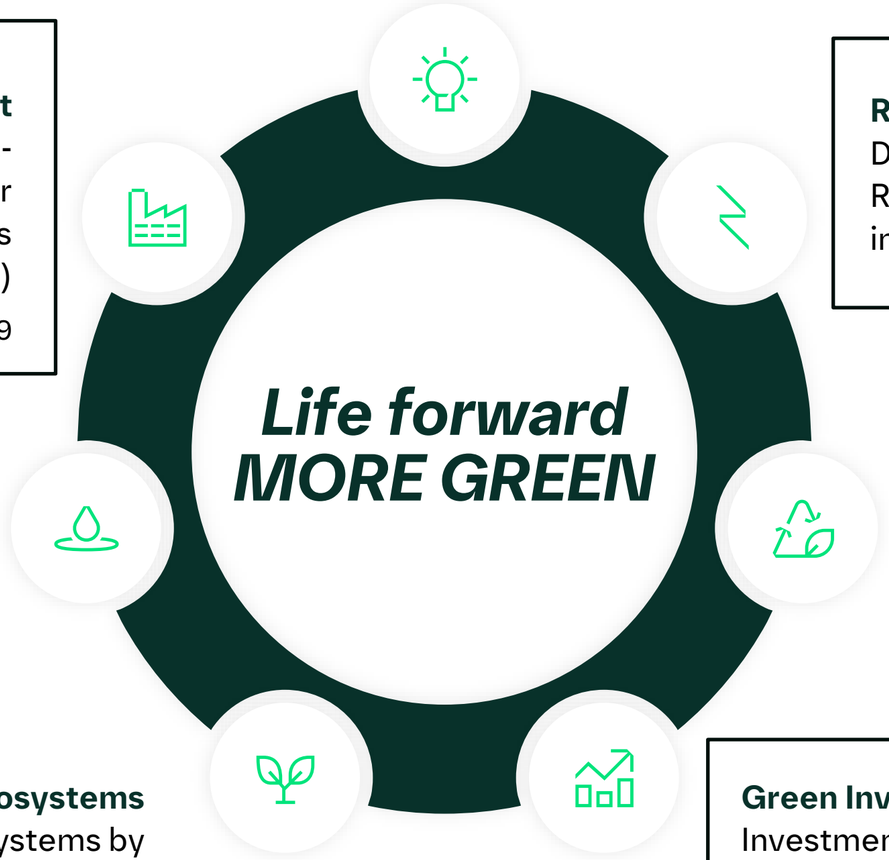
Global MORE GREEN pillar and our ambitions 2030

Green Behavior
Strengthen our Green Culture

Decarbonization/Carbon Footprint
Decrease Greenhouse Gas emissions science-based by 58.9%* and Carbon Neutrality in our operations (Scope 1+2). Reduce emissions across the value chain by 27.5%* (Scope 3)

*SBTi Base Year 2019

Renewable Energy/Electricity
Decrease energy consumption and purchase Renewable Electricity by 100%. Implement innovative clean tech solutions.



Water Stewardship/Clean Water
Minimize water consumption and implement Water Stewardship programs at our water risk sites. Protect Clean Water by 100%, mitigate pharmaceuticals in wastewater from production and combat antimicrobial resistance.

Circular Economy/Resource Use
Reduce operational waste to landfill by 80%* and integrate Circular Economy principles to all future product developments by applying Eco-design and Green Chemistry

*Base Year 2010

Biodiversity/Ecosystems
Protect biodiversity and ecosystems by nature-based solutions at our sites and support communities

Green Investment
Investments at our sites and apply a carbon price of 100€ per ton CO_2e for CapEx and OpEx

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Industrial **decarbonization** requires moving from **understanding how we consume energy**, to **redesigning** how we **produce, manage** and **replace it**



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KEY STEPS TO DECARBONIZE PRODUCTION

Decarbonize Pharmaceutical Production

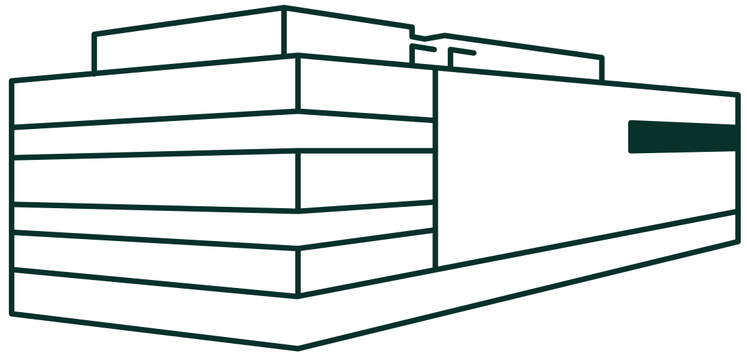
Know the plant in depth

Analyze energy consumption

Define efficiency measures and decarbonization levers

Simulate the scenarios

Define the decarbonization roadmap



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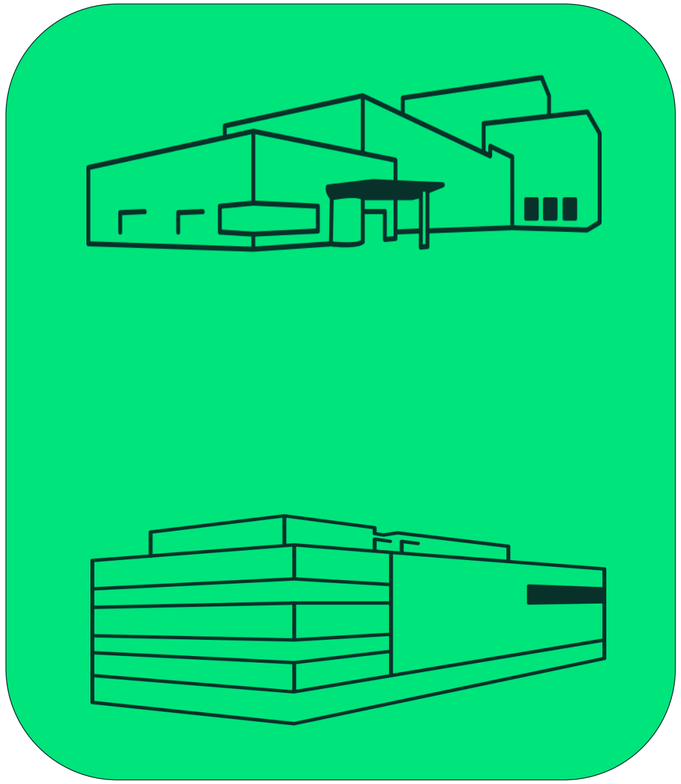
Heat Pumps

Hot water for HVAC

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STEAM CONSUMPTION IN PRODUCTION BUILDINGS



+



Processes
3,885 MWh
(52.25%)

HVAC
3,551 MWh
(47.25%)

2024 values used as the baseline of the study

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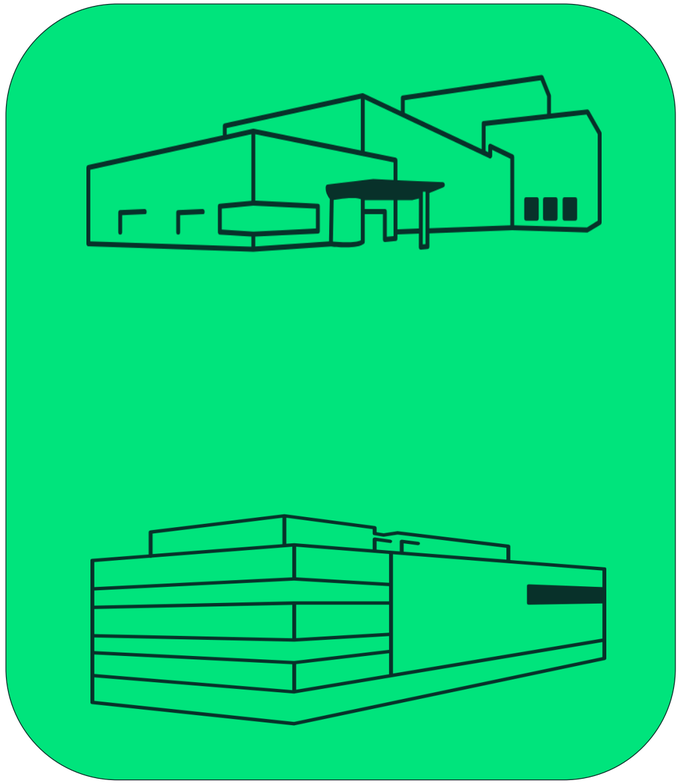
OBJECTIVE



- **Eliminate** the **natural gas consumption** needed to produce **hot water for air conditioning**.

- **Reduce CO_2 emissions** by cutting natural gas use, which will help to **reduce** the **carbon footprint of the site**

NEW TECHNOLOGY: HEAT PUMPS FOR HVAC



+



→

Processes
3,885 MWh

+



→

HVAC
≈ 0 MWh

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2024 values used as the baseline of the study

WHAT WE WILL ACHIEVE



Steam consumption

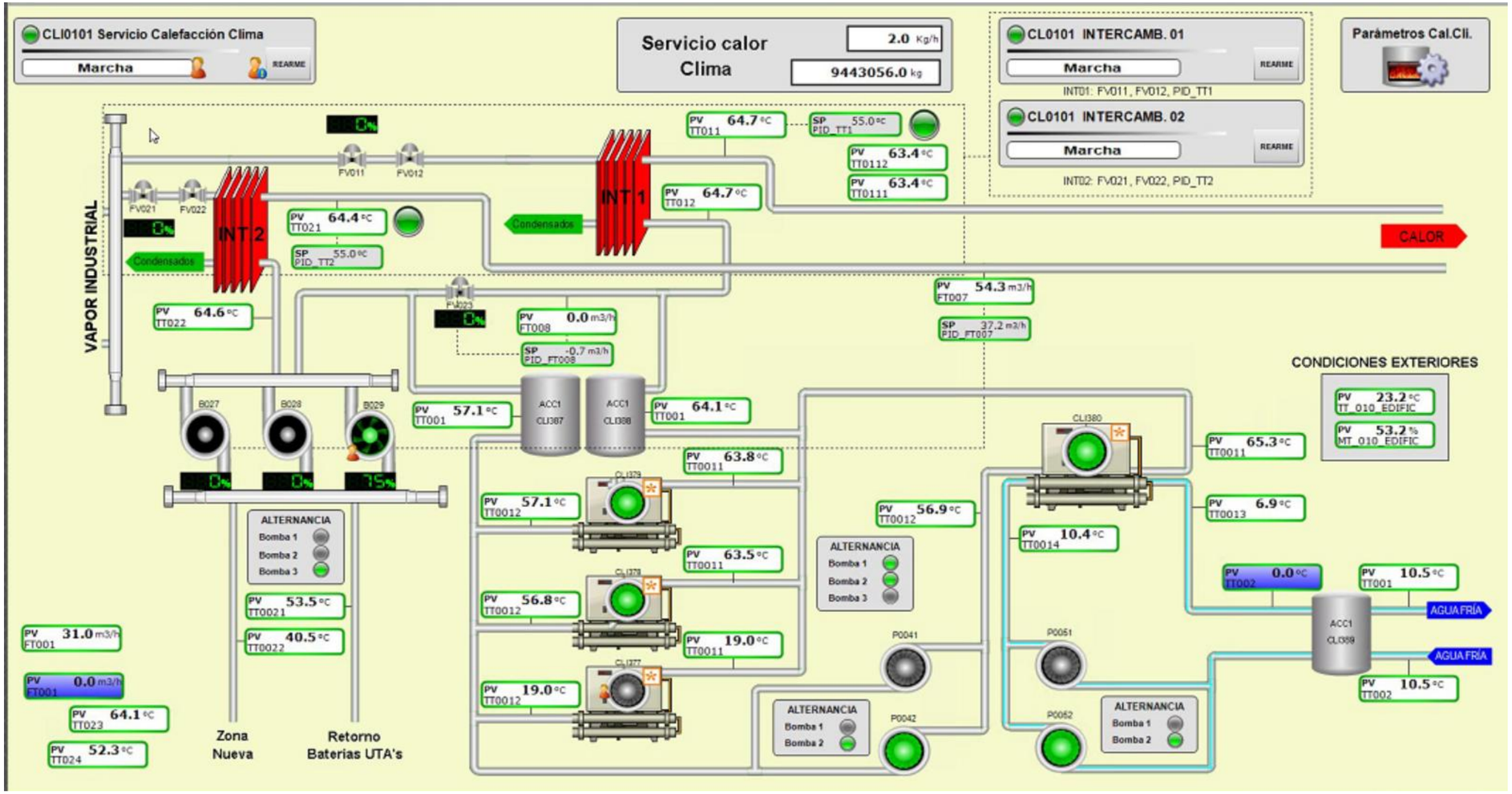
45% ↓

Hot water for HVAC

Green electricity

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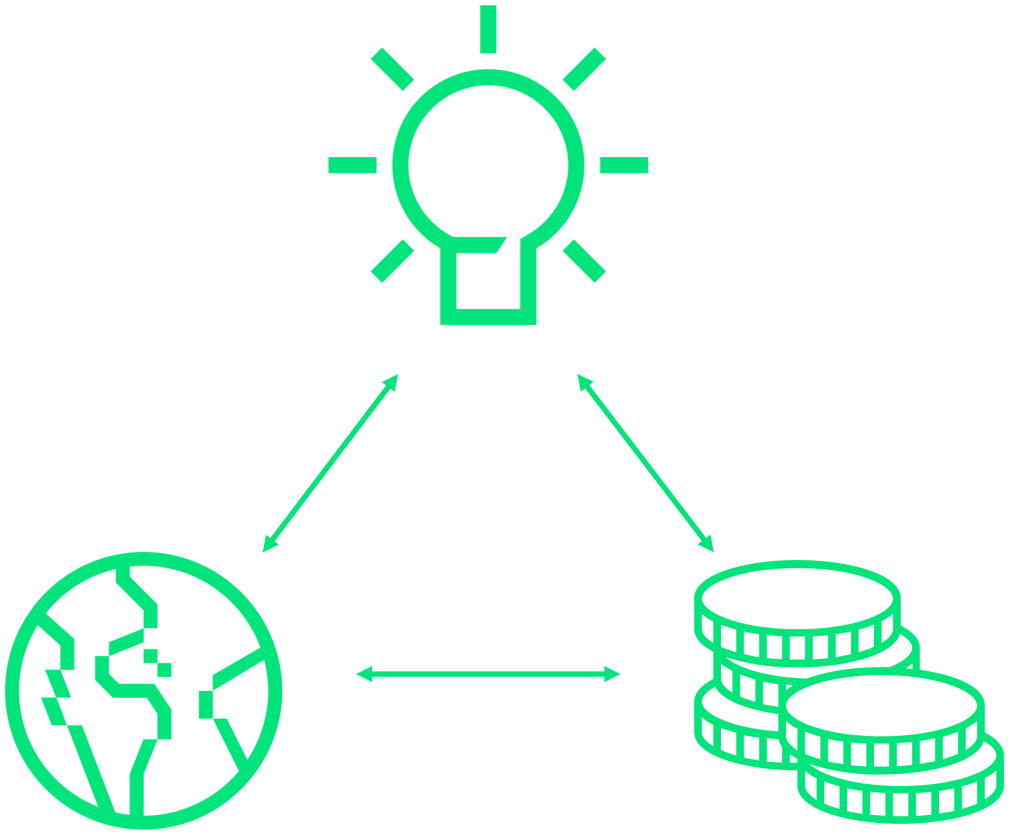
HOW HEAT PUMPS WORK



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SUSTAINABILITY IMPACT

Energy efficiency

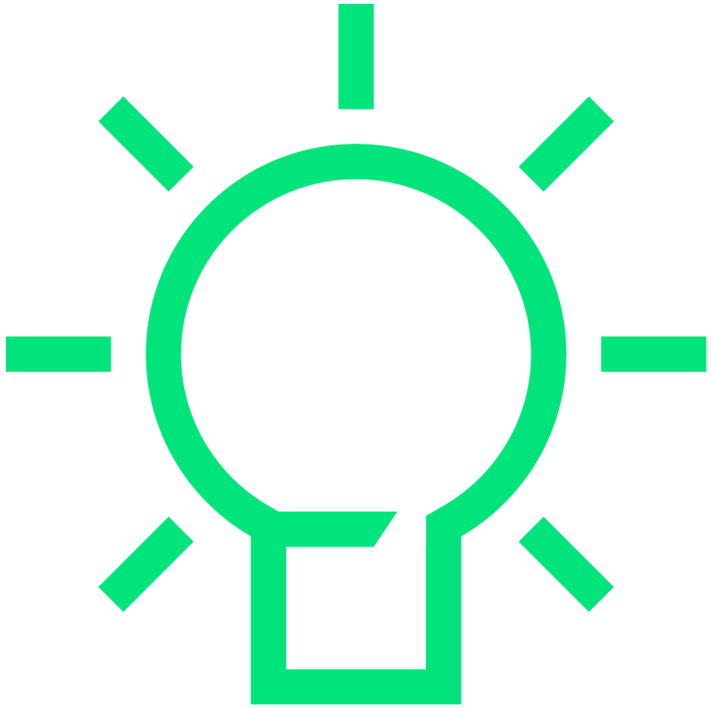


CO2 not emitted into the atmosphere

Savings

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SUSTAINABILITY IMPACT



Energy efficiency

- Achieve **an efficiency** of **99%** for hot water through heat pumps, instead of 82% through heat exchangers and a gas boiler.

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SUSTAINABILITY IMPACT

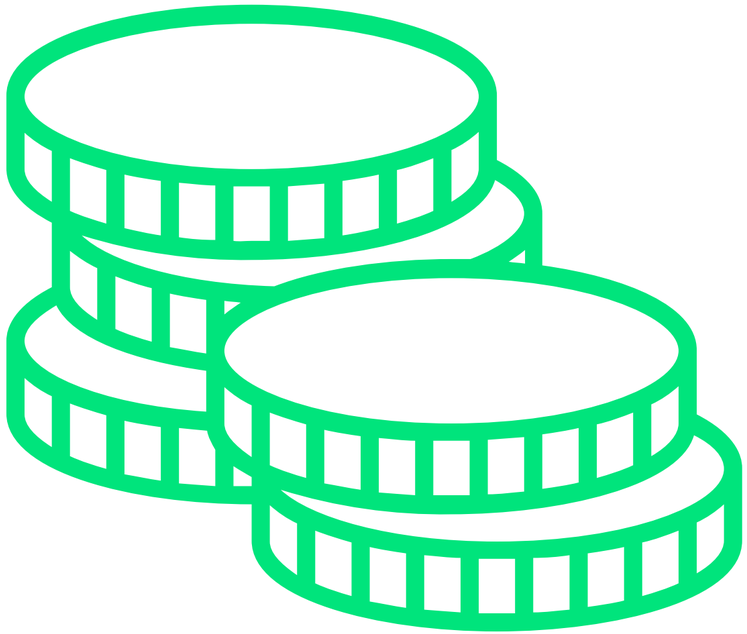


Carbon footprint

- The emission of 1,000 t of CO2 will be avoided by producing hot water for HVAC with heat pumps (equivalent to the annual consumption of a town of 2,500 people)

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SUSTAINABILITY IMPACT



Savings

- **Reduce energy costs**

€100 - 150K per year, compared to production with natural gas.

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RESULTS

	Steam for HVAC (kWh)	Steam for Process (kWh)	TOTAL Steam
2026	152.365 kWh	7.791.057 kWh	7.943.422 kWh
2026 wo HP	4.888.940 kWh	7.791.057 kWh	12.679.997 kWh
Savings Steam	4.736.575 kWh		

HP Consumption (kWh)	
2026	1.415.271 kWh
Electrical Cost	169.832,48 €
Total Savings (€)	115.503,34 €

97%

Reduction in steam for HVAC

971

tCO2 not emitted

4.7 GWh

Steam savings

116 K€

Total savings



Heat Pumps start-up Q4 2025

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SUCCESS FACTORS



01

TECHNOLOGY

Select the technology based on the real needs of the process.

02

DATA

A history of detailed, real energy consumption data is key to detecting consumption hotspots.

03

FLEXIBILITY

Modular systems provide flexibility and allow adaptation to the different strategies of the future.

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Thank you

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