



**Daikin Industries,Ltd.**

Briefing on Sustainability

January 19, 2023

## Event Summary

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<b>[Company Name]</b>	Daikin Industries,Ltd.	
<b>[Company ID]</b>	6367-QCODE	
<b>[Event Language]</b>	JPN	
<b>[Event Type]</b>	Investor Conference	
<b>[Event Name]</b>	Briefing on Sustainability	
<b>[Date]</b>	January 19, 2023	
<b>[Number of Pages]</b>	50	
<b>[Time]</b>	16:30 – 18:05 (Total: 95 minutes, Presentation: 48 minutes, Q&A: 47 minutes)	
<b>[Venue]</b>	Webcast	
<b>[Number of Speakers]</b>	6	
	Kota Miyazumi	Executive Officer, Responsible for Corporate Communication
	Hiroaki Ueda	Executive Officer, General Manager of Corporate Planning
	Satoru Fujimoto	General Manager of CSR and Global Environment Center
	Takayuki Kamekawa	Vice President, Member of the Board of Directors, Daikin Europe N.V.
	Kazuhide Mizutani	General Manager of EMEA Development Center, Daikin Europe N.V.
	Takahiro Yamaguchi	Member of the Board, Daikin Air Conditioning France
<b>[Analyst Names]*</b>	Tomohiko Sano	JPMorgan Securities Japan Co., Ltd.
	Yuichiro Isayama	Goldman Sachs Japan Co., Ltd.
	Hikaru Mizuno	UBS Securities Japan Co., Ltd.
	Pamela Liu	Morgan Stanley Europe
	Kentaro Maekawa	Nomura Securities Co., Ltd.
	Graeme McDonald	Citigroup Global Markets Japan Inc.

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Leigha Miyata

UBS Securities Japan Co., Ltd.

\*Analysts that SCRIPTS Asia was able to identify from the audio who spoke during Q&A.

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## Presentation

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**Monri:** Thank you for waiting. Thank you very much for taking time out of your busy schedule to join us today.

Prior to the start of the briefing, we would like to inform you about the language settings for Zoom. This briefing will be held with simultaneous interpretation in English and Japanese. Please click the Interpreter button at the bottom of the Zoom screen and select the language you wish to listen to, Japanese or English.

From now, we will start Daikin Industries, Ltd.'s sustainability briefing.

The presentation materials are posted on the Investor Relations page of the Company's website as we announced via e-mail today. We have also sent you a link to the materials on Zoom chat. The presentation will be based on the materials projected on the screen, but please have them ready at hand if you need it.

First of all, I would like to introduce today's speakers.

Kota Miyazumi, Executive Officer, Responsible for Corporate Communication.

**Miyazumi:** Hello everyone, I'm Miyazumi. Thank you.

**Monri:** Hiroaki Ueda, Executive Officer, General Manager of Corporate Planning.

**Ueda:** Thank you.

**Monri:** Satoru Fujimoto, General Manager of CSR and Global Environment Center.

**Fujimoto:** Thank you.

**Monri:** Takayuki Kamekawa, Vice President, Member of the Board of Directors, Daikin Europe N.V.

**Kamekawa:** Thank you.

**Monri:** Kazuhide Mizutani, General Manager of EMEA Development Center, Daikin Europe N.V.

**Mizutani:** Thank you.

**Monri:** Takahiro Yamaguchi, Member of the Board, Daikin Air Conditioning France.

**Yamaguchi:** Thank you very much.

**Monri:** I'm sorry that I haven't introduced myself yet. I'm Monri from the Investor Relations Management Group, Corporate Communication Office, and I will serve as the moderator today. Thank you.

First, Mr. Miyazumi will give a short greeting, and then Mr. Fujimoto will explain our company's efforts toward carbon neutrality.

Next, Mr. Ueda will explain about medium- to long-term business growth and solutions to social issues.

After that, Mr. Kamekawa, Mr. Mizutani, and Mr. Yamaguchi, who are stationed at our European base, will explain about Daikin Europe's heat pump heating business, which is the main theme of today's presentation.

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Today, we will give a presentation of 45 minutes first, and then we will have a question-and-answer session. The meeting is scheduled to end at 6:00 PM.

Then, Executive Officer Miyazumi, please begin.

**Miyazumi:** I'm Miyazumi in charge of Corporate Communication. We would like to take this opportunity to thank our analysts and institutional investors for their ongoing advice and support of our management.

Over 180 people attended today's online session. I would like to thank you again for your strong interest in our sustainability initiatives and ESG management.

We have held these sustainability briefings every year with a different theme. The theme for the sixth briefing this time is carbon neutrality. This is the most important social issue for our company, whose main business is air conditioning.

The strategic management plan FUSION25, which started in FY2021, specifically defines the themes that we will address by FY2025 to achieve carbon neutrality, positioning it as one of the three themes of our growth strategy.

Today, I will explain our business strategy, market conditions, and environmental policy trends, focusing on our heat pump heating initiatives in Europe, an environmentally advanced region. At the same time, we would like to report on the current status of our challenge to achieve carbon neutrality, as set forth in FUSION25.

We hope that this event will provide an opportunity for you to deepen your understanding of our company's efforts to solve social issues and achieve medium- to long-term business growth, as well as to exchange ideas and opinions with you.

**Monri:** Next, we will explain based on the presentation materials that you have in your hand.

General Manager Fujimoto, please begin.

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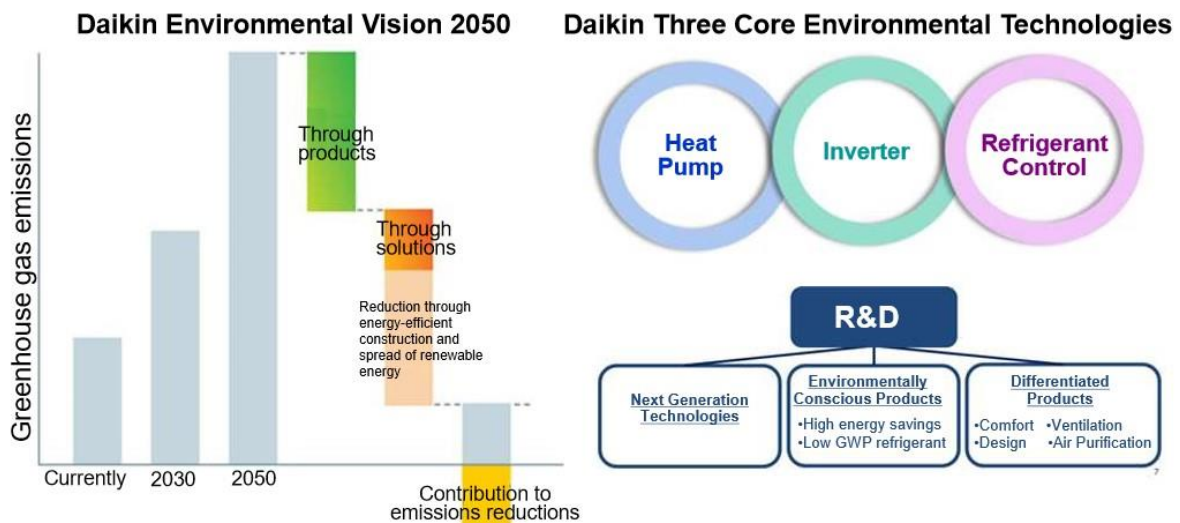
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## Daikin Group “Environmental Vision 2050”

- ❑ We announced **Environmental Vision 2050** in 2018 as a declaration for our aim of **net zero greenhouse gas emissions from our business activities, products, and services** and have unequivocally committed ourselves to **carbon neutrality**.
- ❑ Having further refined our three environmental technologies of **inverters, heat pumps, and fluorochemicals (refrigerants)**, we are promoting the mainstream use of environmentally conscious products and solutions related to construction as a contribution to the reduction of CO2 emissions outside the company.



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**Fujimoto:** I am Fujimoto in charge of the environment.

Before I talk about Europe, let me first explain our company’s efforts to achieve carbon neutrality.

First, let me explain our company’s contribution to the environment and the spread of heat pump heating.

In 2018, we announced our Environmental Vision 2050 and declared that we aim to achieve virtually zero greenhouse gas emissions from our business activities, products, and services; in other words, to achieve carbon neutrality. In our case, it is product emissions, or Scope3. We believe it is important to reduce these emissions.

The key to this is the three core environmental technologies shown at the bottom right: heat pumps, inverters, and refrigerant control technology.

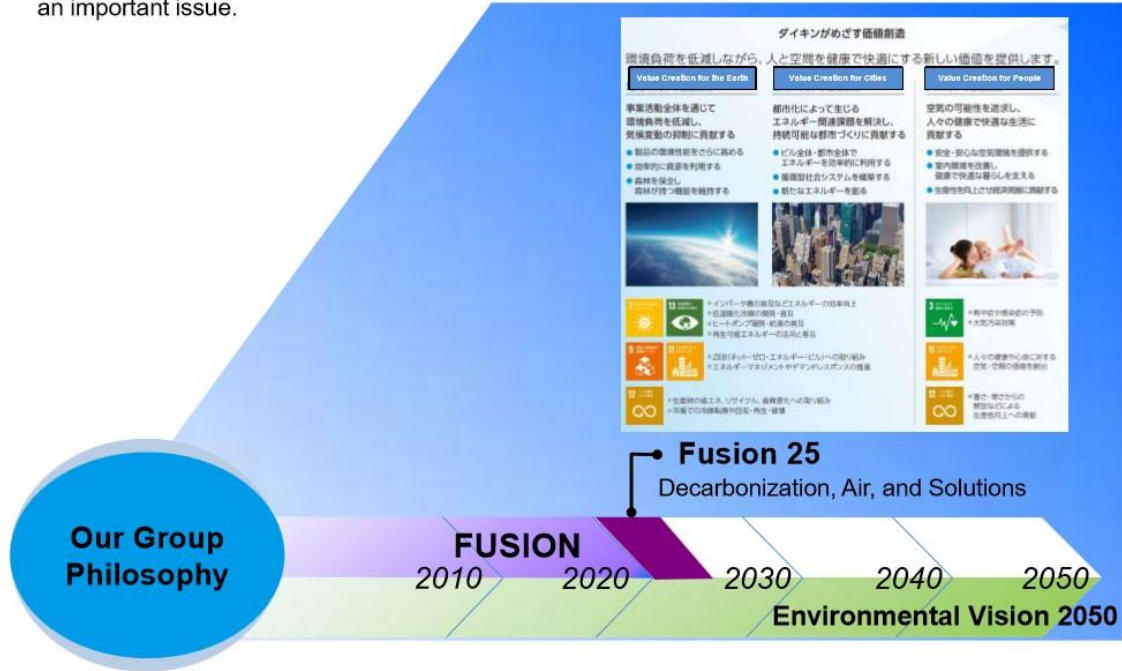
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## Strategic Management Plan “Fusion 25” of the Daikin Group

- ❑ Environmental Vision 2050 is **incorporated in the FUSION strategic management plans** along with specific measures to achieve targets.
- ❑ In the strategic management plan **Fusion 25**, **“Challenge to achieve carbon neutrality”** is one of the growth strategies, and **“shift from combustion type to heat pump type space and water heating”** is an important issue.



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In addition, we not only set forth this long-term vision, but also backcast it and break it down into a five-year plan, which is the Strategic Management Plan FUSION, and link it to specific actions.

In the current FUSION25, shift from combustion type to heat pump type space and water heating is positioned as the most important issue.

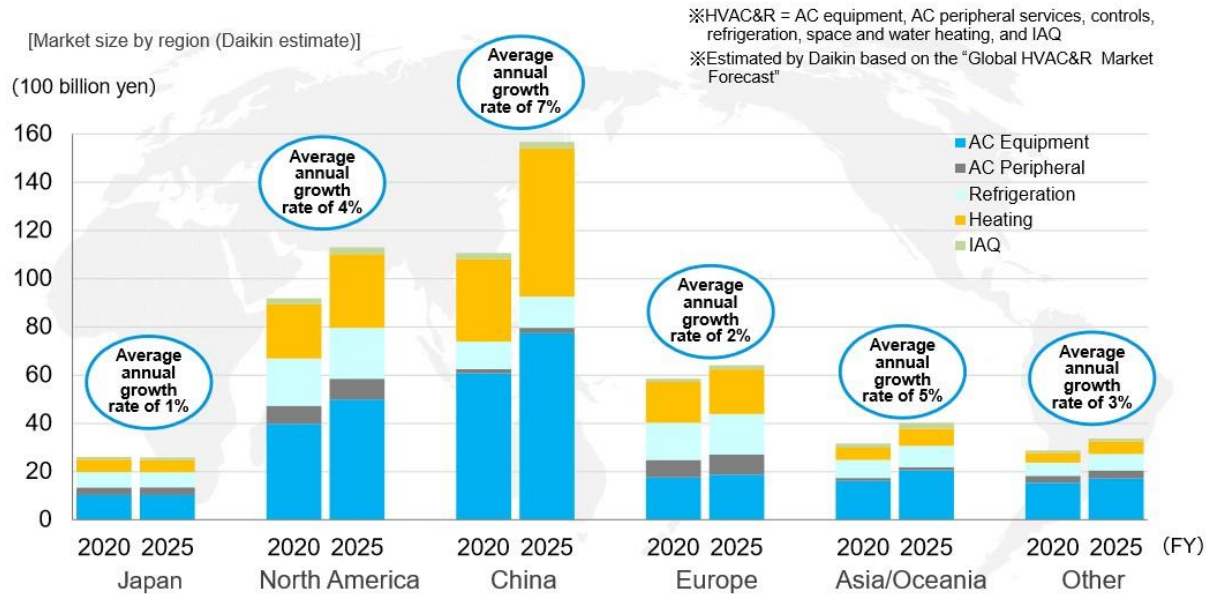
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## Size and Share of the Space and Water Heating in the Global AC Market

- ❑ The size of the global HVAC&R market is expected to expand from ¥34 trillion (2020 actual) to ¥43 trillion (2025 forecast).
- ❑ Of this, the space and water heating market will account for approximately 30% of the total in FY2025 (approximately 25% in FY2020). However, heat pump air conditioners and VRF included in air conditioning equipment are not counted as space and water heating.



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This graph shows the size of the global air conditioning market, which is estimated to be JPY34 trillion in 2020 and JPY43 trillion in 2025, including not only equipment but also construction and controllers.

Of this, the space and water heating market is expected to account for 30% in 2025.

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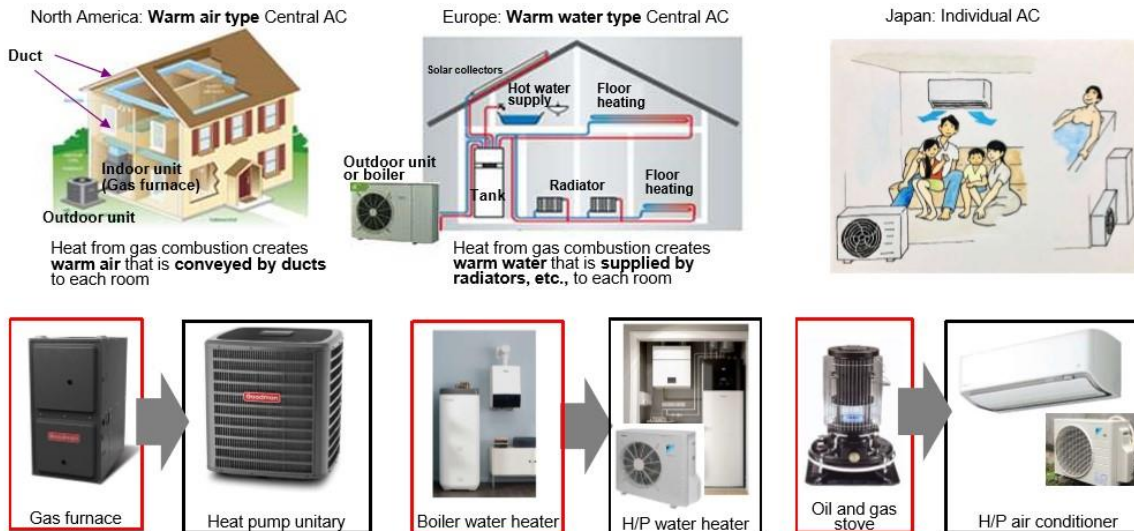
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## Major Heating Methods in the World and Heat Source Replacement

\*Calculated by Daikin based on IEA data

- ❑ In the global heating market by heat source, **combustion heating accounts for ¥3 trillion**, electrical heating for ¥0.9 trillion yen, and **heat pump heating for ¥1.2 trillion**.\*
- ❑ **In Europe, combustion type heating is mainstream** and is performed by burning fuel such as gas or oil in a boiler to heat water that is circulated through panels in each room. While it has the merits of low initial costs and dependable operation at low outdoor temperatures, it **emits a large amount of CO2** and has a high environmental impact. Conversely, **heat pump heating emits less CO2 and conserves energy**.
- ❑ Heat pump heating is expected to gradually replace combustion heating in the future. (See below)



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Let me explain a little about world heating here.

Different regions have different heating systems. In North America, ducts are used to send warm air throughout the room. In Europe, the main method of heating is to circulate hot water throughout the room with radiators and underfloor heating. In Japan, the most common type of heating system is one in which refrigerant is carried to the room individually and heated.

By region, we will replace gas furnaces in North America, boilers in Europe, and stoves in Japan with heat pumps.

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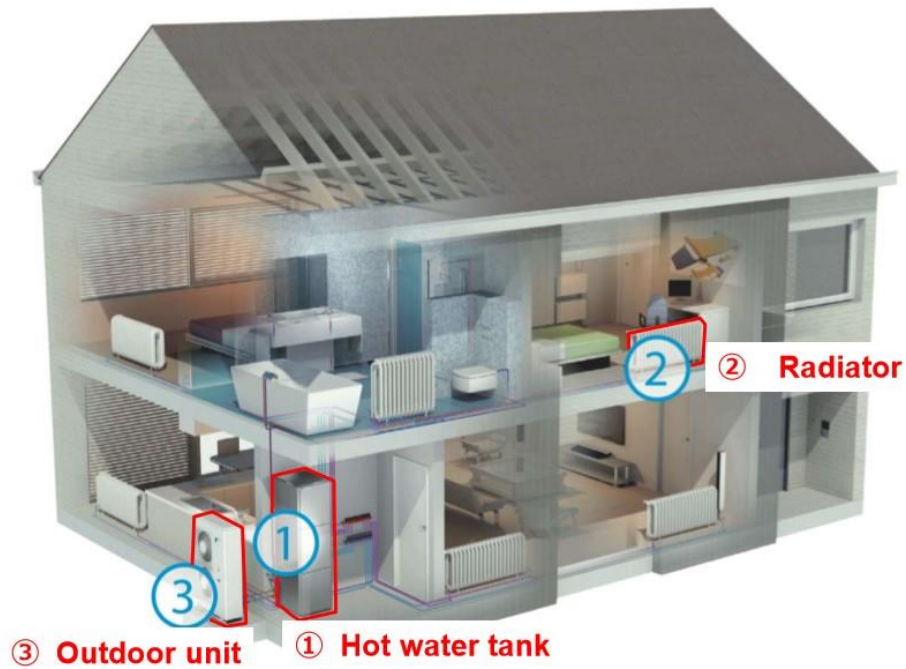
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## Heat Pump Heating in Europe

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- Example of the Daikin air-to-water heat pump system “Altherma”



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To explain the European heating system in a little more detail, the hot water tank is shown here in point one. Warm water is sent from here to, for example, the radiator in point two for heating, and the heat source for producing this hot water is the outdoor unit in point three.

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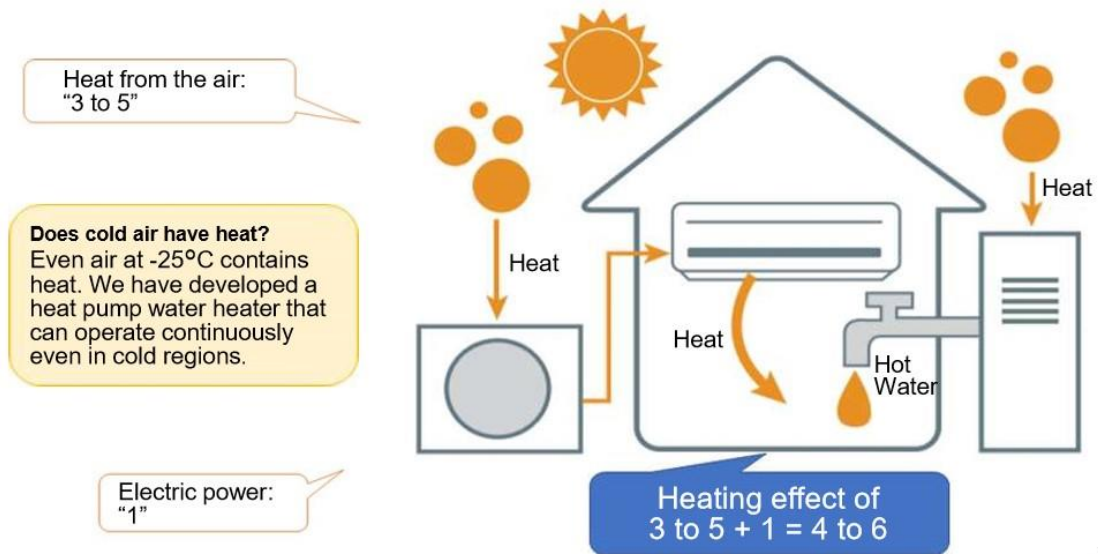
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## Heat Pump Technology Praised for Helping the “Transition from Fossil Fuels”

- ❑ A heat pump is a technology that collects heat from the air, condenses it with a compressor, and conveys it indoors. Instead of "creating" heat, it **"collects and transports" the heat already in the air**, and thereby saves energy. The heat in the air originates from the radiant heat of the sun, so it is a **renewable energy source**.
- ❑ In Europe, heat from the air **is recognized as a renewable energy source** under the Renewable Energy Use Promotion Directive 2009/28/EC (currently Renewable Energy Directive 2018/2001/EU).
- ❑ In the future, the **electricity that is used will also be decarbonized**, and **further CO2 reductions** can be expected.



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Heat pumps are now being touted as the trump card for decarbonization. The sun heats the air outside, and the heat pump collects and condenses the heat from this outside air and transports it to the room to heat or produce hot water.

Basically, most of the heat that is used to heat the building originally comes from the sun, so it is said to be using renewable energy. Of course, electricity is necessary, but we believe that if renewable energy is used in the future, its CO2 emissions can be significantly reduced.

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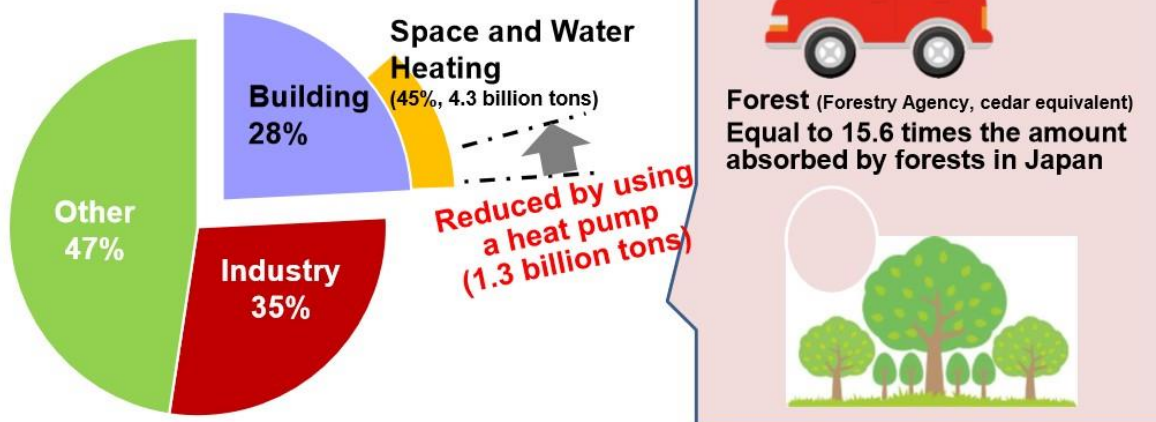
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## Impact of Heat Pump Heating Worldwide

- ❑ Based on the IEA report, **replacing 30% of the global heating market** with heat pump heating would reduce the **world's CO2 emissions about 4%, which would be equivalent to nearly 1.3 billion tons of emissions.**
- ❑ This is equal the emissions of **560 million average automobiles**, or **15.6 times the absorption of forests in Japan.**  
 (\*This assumes that the electric power of the heat pump is produced entirely from renewable energy.)

### Global CO2 Emissions 34 Billion Tons



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We have estimated how effective heat pumps are in reducing CO2 emissions, but there are many hypotheses, and we would like to improve the accuracy of our calculations in the future. In any case, I believe it will have quite a large effect.

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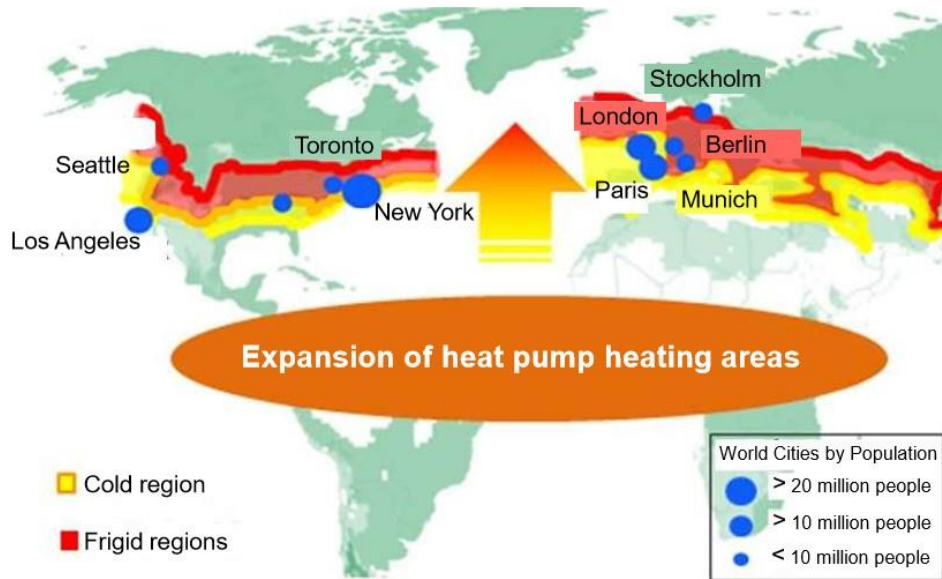
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## Contribution of Heat Pump Heating to Reducing Environmental Impact Started in Europe and Spread Globally

- ❑ Business growth is focused on the **European market**, where the shift from combustion heating to heat pump heating is most apparent. Our experience in the European market is being applied horizontally to global heating markets as part of our contribution to **reducing the global environmental impact**.
- ❑ We will use our technological capabilities to develop products that can ensure operation performance even in **frigid regions** and expand the areas that can be heated by heat pumps.



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As you can see in this diagram, our company would like to contribute to global decarbonization by expanding the area that can be heated by heat pumps northward through technological development.

To this end, we will develop technologies and products that can heat even in extremely cold regions.

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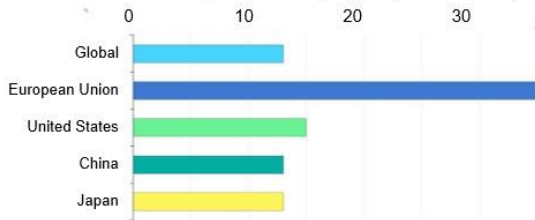
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## Situation for the Mainstream Adoption of Heat Pumps

- Heat pump demand is increasing due to the decarbonization policies of countries around the world. **The number of heat pumps sold in 2021 was a record high.** In the European Union (EU), demand increased 35% year-on-year to 2.2 million units, whereas demand was 15% in the United States, 13% in Japan, and the demand in China for air-sourced heat pumps increased 13%.

Growth rate of heat pump sales by region (2021 vs. 2020)



- However, heat pumps currently only account for **about 10% of the world's heating needs for buildings.**

The IEA is promoting energy conservation in buildings toward net-zero energy consumption in 2050 and is **recommending 50% diffusion for heat pumps.**

Source: IEA, etc.

- In 2020, heat pump sales totaled 117 million units, and the IEA predicts that the heat pump market will **exceed 600 million units in 2030.**

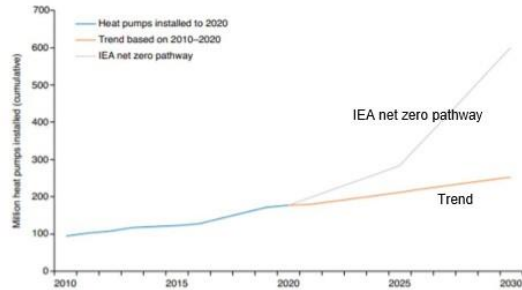
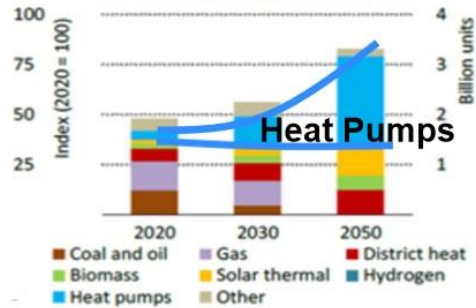


Fig. 1) Global historic heat pump sales and IEA net zero 2050 pathway. Global stock of heat pumps

Proliferation of Heat Pumps toward Net Zero in 2050  
Heating equipment stock



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Next, I would like to introduce trending toward global adoption of heat pumps.

Please see the top left. With decarbonization policies in place around the world, unit sales of heat pumps in 2021 are at an all-time high. Europe is growing at about 35% over 2020, and other regions are growing at about 15%.

If this trend continues, the global heat pump market will exceed 600 million units by 2030.

As you can see from the graphs on the lower left and right, heat pumps currently only meet 10% of the world's heating needs in buildings. The IEA says this should be 50% by 2050.

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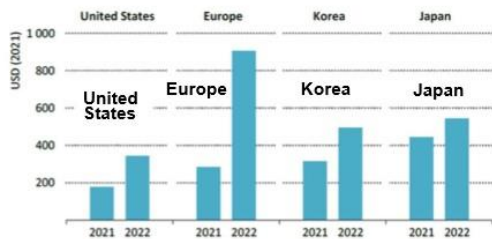
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## Economic Benefits of Heat Pumps Multiply As Natural Gas Prices Soar

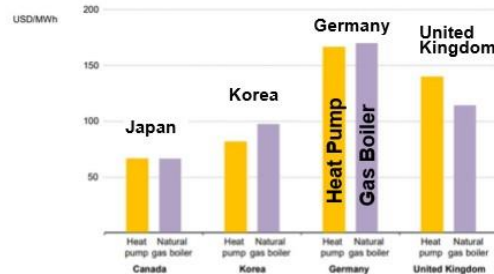
- ❑ In the past, the initial cost deterred widespread adoption of heat pumps. However, soaring natural gas prices from the situation in Ukraine have increased the appeal of lower fuel and electricity costs of heat pumps since the total cost of ownership, including initial and operating costs, is now nearly the same (IEA).
- ❑ An additional advantage of heat pumps is the effect of demand response (IEA). In Japan, the demand effect for water heaters alone is estimated to have a demand effect of about 10 power plants (Daikin).

Savings in operating costs (fuel and electricity costs) after switching from a gas boiler to a heat pump

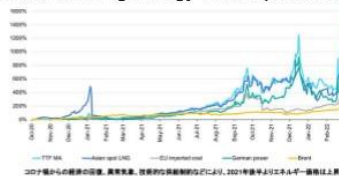


While higher initial investment have slowed sales, adoption of heat pumps has risen on the appeal of having higher energy efficiency than gas boilers that results in lower fuel and electricity costs.

Total cost comparison (initial and operating costs) of gas boiler and heat pump (2021)



Reference: Soaring Energy Prices (Oct 2021-April 2022)



Source: IEA, etc.

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One of the most characteristic recent developments is that gas prices have skyrocketed due to the situation in Ukraine.

This graph on the left shows the amount of savings in operating costs when switching from a gas boiler to a heat pump. The obstacle to the spread of heat pumps is the high initial cost, but as the operating costs increase in price, the total cost is becoming almost the same, as you can see in this graph on the right. The conditions are now in place not only for decarbonization, but also for economic diffusion.

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## Market Situation for Heat Pumps (North America)

### ❑ Electrification promotion under the Inflation Reduction Act (2022)

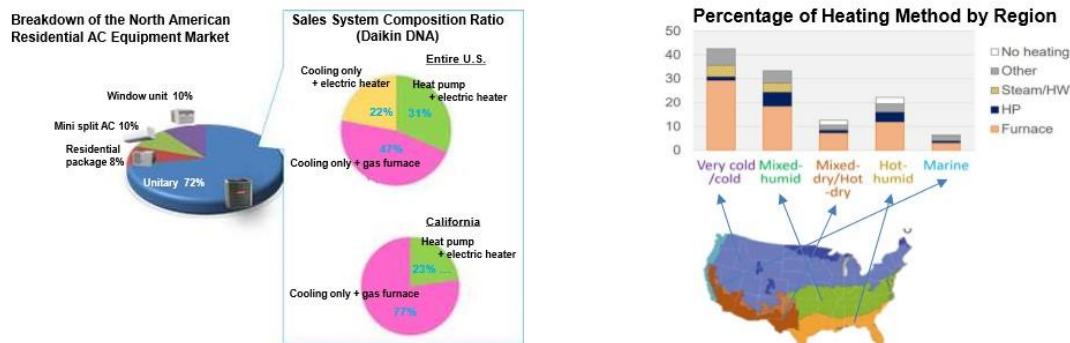
- The U.S. government will reduce its fiscal deficit in 2022-2031 while making the largest investment (\$369 billion) in energy security and climate change through \$36.5 billion in tax deductions for “buildings” and \$8.8 billion in refunds.
- Tax deductions **total \$12.5 billion for energy-saving equipment such as heat pumps with rebates of more than \$8,000 each.**

### ❑ Electrification promotion under the Defense Production Act (2022)

Although the total investment amount is modest at \$500 million, some of the funds will be used to encourage the U.S. manufacture of heat pumps and their parts, boost employment by increasing U.S. production, and promote widespread adoption of heat pump by providing support targeting low-wage earners.

### ❑ Duct-type unitary units account for about 70% of sales in the North American residential air conditioning market against 30% sales for heat pumps

Of these, heat pump heating is mainly used in cases where there is no natural gas infrastructure. Furnaces such as for gas heating are also used in the relatively warm southern regions.



Source: Vineyard, E. & Baxter, V. U.S. Heat Pump Market (IEA, 2021), etc.

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In North America, the Biden Administration’s Inflation Control Act is promoting electrification, and large incentives have been prepared for energy-saving equipment such as heat pumps.

The map is small, but if you look at the map on the lower right, you can see that New Orleans and Miami are relatively warm regions, so it would not be surprising if heat pumps were widely used in these areas. We believe that the possibility of heat pumps replacing furnaces in these areas is very great.

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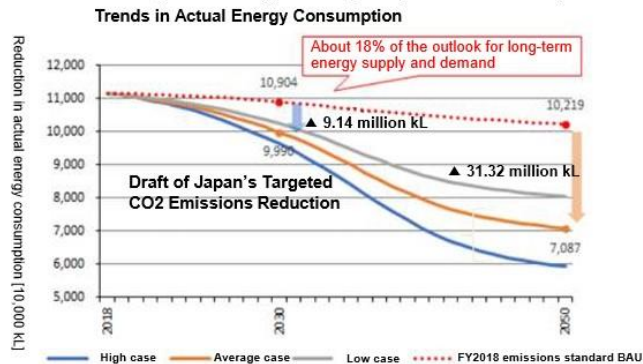
## Market Situation for Heat Pumps (Japan)

- ❑ **The Japanese government is promoting industrial heat pumps and residential heat pump water heaters as part of its mixed energy policy.**
- ❑ The Heat Pump & Thermal Storage Technology Center of Japan estimates that this will have a CO2 reduction effect of 12% by 2030 and 14% by 2050, which are the reduction targets for Japan.
- ❑ **For residential, an 8.5% CO2 emissions reduction** is possible by replacing heat pump water heaters and heating equipment in cold regions with heat pumps.

### 2021 CO2 Reduction Effect of Heat Pumps (Heat Pump & Thermal Storage Technology Center)

- Effect on reducing actual energy consumption (2018 BAU standard: average case)  
FY2030: ▲ 9.14 million kL; FY2050: ▲ 31.32 million kL
- Greenhouse gas emissions reduction effect (FY2018 emissions standard: average case)  
FY2030: - ▲ 7.54 million tCO2; FY2050: ▲ 36.99 million tCO2

#### ➢ Effect on reducing actual energy consumption (2018 BAU standard)



Source: Heat Pump & Thermal Storage Technology Center of Japan, etc.

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In Japan, The Heat Pump & Thermal Storage Technology Center of Japan has announced great potential for decarbonization.

That is all. Thank you very much.

**Monri:** Next, Mr. Ueda will explain our medium- to long-term business growth and solutions to social issues.

Executive Officer Ueda, please begin.

**Ueda:** I am Ueda from Corporate Planning. Thank you.

I will review the first year of our challenge to achieve carbon neutrality under our strategic management plan FUSION25, which sets 2025 as the target year for medium- to long-term business growth and solutions to social issues, and explain the key points to be strengthened in the latter half three-year plan of FUSION25 in light of the recent changes in the external environment.

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## 1. Review of the First Year of Fusion 25 and Current Situation

	FY2020	FY2021	FY2025 Targets
Net sales	¥ 2.49 trillion	¥ 3.11 trillion	More than ¥ 3.6 trillion
Reduction rate of actual greenhouse gas emissions* (Based on 2019, compared to BAU)	7%	10%	More than 30%

※ Actual greenhouse gas emissions = Greenhouse gas emissions over the product lifecycle - Contribution to reducing greenhouse gas emissions

### 1) Reductions during manufacturing (development/production processes)

#### Reduce HFC/PFC emissions in development/production processes

- ✓ Make efforts to achieve a carbon neutral factory
  - Zero-emission factory measures underway for the Rinkai No. 1 Factory at the Sakai Plant
- ✓ Greenhouse gas emissions in FY2021: 1.16 million t-CO<sub>2</sub> (36% reduction compared to FY2015)
  - Achieve FY2025 target of 1.2 million t-CO<sub>2</sub> ahead of schedule (34% reduction compared to FY2015)

#### 2) Reduced power consumption during product use

#### Accelerate global promotion of inverters to lead competitors with environmentally conscious products (energy-saving equipment)

- ✓ RA inverter conditioners: 75% in 2019 → 79% in 2021 (Target: 98% in 2025)  
Inverter products in North America: 10% in 2019 → 15% in 2021 (Target: 30% in 2025)
  - Inverter AC units are approximately 50% more energy efficient than non-inverter units

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In FY2021, the first year of FUSION25, we achieved sales exceeding JPY3 trillion for the first time since our founding, despite a challenging business environment that included the global spread of the new coronavirus, soaring raw material prices, and a shortage of semiconductors.

As for the challenge to achieve carbon neutrality, which is one of the growth strategy themes of FUSION25, we have achieved a 10% reduction in FY2021 compared to the target of 30% reduction in FY2025 for BAU (Business As Usual), which stands for greenhouse gas emissions in the case of growth without any measures, based on the entire lifecycle of the Company in 2019.

Specifically, we are working on six themes. The first is reduction efforts in manufacturing, including development and production. We are implementing zero-emission factory measures, using the Rinkai No. 1 Factory at the Sakai Plant as a model factory.

In addition, we have achieved 1.16 million tons of CO<sub>2</sub> emissions from manufacturing in FY2021, and we have achieved our FY2025 target of 1.2 million tons of CO<sub>2</sub> emissions four years ahead of schedule.

The second is efforts to reduce power consumption during product use. Mainly, we are working to expand the use of inverter machines throughout the global region.

Of these, we have set a target to increase the ratio of inverter conditioners from 75% in FY2019 to over 98% in FY2025, and the ratio of inverter conditioners in FY2021 was 79%, showing steady progress in the use of inverters. Furthermore, in North America, where the shift to inverters has lagged behind, we have set a target to increase the ratio of inverters in all products from 10% in FY2019 to 30% in FY2025, improving to 15% in FY2021.

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## 1. Review of the First Year of Fusion 25 and Current Situation

### 3) Expansion of the Heat Pump Space/Water Heater Business

#### Position Europe and North America as top priority regions and accelerate conversion of combustion type space and water heaters to heat pumps.

- ✓ Net sales ¥130.6 billion in FY2020 ➔ ¥190 billion in FY2021
  - Achievement of FY2023 sales target of ¥204 billion in Fusion 25 is projected one year ahead of schedule
- ✓ Europe: Sales expansion have been driven by subsidies for heat pumps and tightening of regulations for combustion equipment
  - Establishment of a new plant for heat pump heaters in Poland in 2024
- ✓ North America: Accelerate sales of inverter heat pump unitary (expand sales of strategic product FIT)



### 4) Refrigerant initiatives supporting the AC business

#### Promote various measures to reduce greenhouse gas emissions caused by refrigerants and lead in the environment, society, and industry

- ✓ Promotion of global conversion to R32
  - R32 ratio for RA: 83% in 2019 ➔ 91% in 2021 (target: 95% in 2025)
  - Leverage tighter HFC regulations and promote shift to R32 in North America, where efforts are behind other regions
    - First sales of RA using R32 in North America in December 2021
- ✓ Creation of refrigerant eco-cycle (recovery, reclamation, and destruction)
  - Europe: Development of VRV L∞P using reclaimed R410A, strengthening refrigerant reclamation business in Germany (started in 2020)
- ✓ Development of low GWP refrigerant
  - Refrigerant development for EV air conditioning (2027 target for commercialization)
- ✓ Development of new systems and equipment using low GWP refrigerants

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The third point is the expansion of the heat pump space and water heater business.

Sales have expanded significantly more than our initial target, driven by subsidies for heat pumps and stricter regulations on combustion equipment, particularly in Europe. Global sales target for FY2023 is JPY204 billion, while FY2021 sales are approximately JPY190 billion. If things continue to go smoothly, we expect to achieve our goal one year ahead of schedule. We are also accelerating sales of FIT, a strategic product of inverter heat pump unitary, in North America.

The fourth point is our efforts related to refrigerants that support our air conditioning business. We are promoting various measures to reduce greenhouse gas emissions caused by refrigerants.

In particular, we are promoting the use of R32, a refrigerant with low global warming impact, on a global basis, and have set a target of increasing the R32 ratio for room air conditioners from 83% in FY2019 to over 95% in FY2025. The conversion rate to R32 in FY2021 was 91%, and we are on track to reach our goal. In North America, where the shift to R32 has been delayed, we have sold the first room air conditioning using R32 in December 2021.

In addition, we will work to establish a refrigerant eco-cycle that achieves refrigerant recovery, recycling, and destruction. For example, in Europe, we are actively selling VRV L∞P, which uses reclaimed R410A. In addition, in 2020, we started operation of a refrigerant reclamation plant in Germany. We will recover refrigerants from all over Europe and expand our reclamation business.

In addition, we are promoting the development of low GWP refrigerant and the development of equipment using low GWP refrigerants. In particular, in the development of low GWP refrigerant, we are working on the development of refrigerant for EV air conditioning with the aim of commercialization in 2027.

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## 1. Review of the First Year of Fusion 25 and Current Situation

### **Future Initiatives (Contribution to Future Emissions Reductions)**

#### **5) Challenge to Create New Environment - Related Business**

##### **Challenge themes that can be expected to expand the market and contribute to CO2 reductions**

- ✓ Smart cities: Participate in projects in various regions worldwide including Asia, Europe, and Japan
- ✓ Energy creation: Expand lineup of micro-hydroelectric power generation

###### ■ Smart city project in Singapore



###### ■ Micro-hydroelectric power generation (DK-Power)



#### **6) Technology Development to Realize a Carbon Neutral Society**

##### **Research and obtain leading-edge technologies for CO2 separation, recovery, and reuse**

- ✓ Explore technologies for ambient temperature decomposition, direct recovery, and reuse of CO2 (collaborative innovation with Doshisha University)
- ✓ Establish a hypothesis for a net zero CO2 emissions society (collaborative innovation with the University of Tokyo)



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In addition, we are actively working on themes that have the potential to contribute to future emission reductions.

The first is the challenge of new environmental businesses. We will challenge themes with potential for market expansion, such as smart cities and energy creation.

Smart Cities promotes the local production and consumption of energy in various global locations in Asia, Europe, and Japan. We aim to win orders by strengthening proposals for actual properties that meet the needs of project owners.

In the area of energy creation, we are working to expand our product lineup and increase sales of equipment through bundled sales with air conditioners, with the aim of promoting the use of micro-hydroelectric power generation in Japan.

In addition, we will work to develop technologies for a carbon-neutral society. Although the shift to renewable energy is expected to accelerate around the world in the future, CO2-emitting energy sources will remain in 2050.

Therefore, after researching advanced technologies for the separation, recovery, and recycling of CO2 itself, we will continue to identify and acquire the necessary technologies. For example, we are working with Doshisha University and the University of Tokyo.

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## 2. Response to Latest Changes in the External Environment and the Latter -Half 3-Year Plan

**The global trend toward carbon neutrality is accelerating with greater momentum than when the original plan for Fusion 25 was formulated.**

### (1) International agreement

- At **COP27** in November last year, countries agreed to a change from the conventional **2°C target (carbon neutrality by 2070)** to the **1.5°C target (carbon neutrality by 2050)**.
- **More than 150 countries have committed to carbon neutrality.**
- Many countries have **raised their CO2 reduction targets for 2030** .

### (2) Acceleration of trend toward H/P adoption by each country

**Europe:** Soaring energy costs due to the Ukrainian war and **cutbacks of Russian natural gas are speeding up the shift to heat pumps from natural gas.** The number of countries with a new gas boiler ban and/or fast -tracking and strengthening existing bans are increasing.

**N. America:** **Along with a ban on new construction for natural gas in environmentally advanced states**, subsidies have expanded the spread of H/P equipment.

**Japan:** Soaring energy prices have stimulated interest in decarbonization, mainly among government agencies and major companies. **In 2025, a new energy-saving standard for water heaters was enacted** making high efficiency mandatory for both combustion type and electric type heaters .

**China:** **Government is leading electrification and energy conservation efforts** toward a peak out of CO2 emissions in 2030.

### (3) Acceleration of trend toward carbon neutrality by private companies

- **An increasing number of machinery manufacturers have committed to zero CO2 emissions** from their factories and offices.

**In the Fusion 25 latter-half 3-year plan scheduled for announcement in June, we will specify and accelerate carbon neutrality initiatives , such as our heat pump space/water heater business, as we continue to reduce CO2 emissions.**

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Next, I would like to discuss changes in the external environment and the acceleration of efforts toward the latter-half three-year plan.

The world's movement toward carbon neutrality is accelerating faster than expected compared to when the initial FUSION25 plan was formulated in June 2021.

At COP27 last November, countries agreed to a 1.5°C target for carbon neutrality by 2050, instead of the previous 2°C target for carbon neutrality by 2070. The number of countries declaring carbon neutrality goals has increased to more than 150 worldwide. In addition, many countries have raised their 2030 CO2 reduction targets.

In response to such an increase in carbon neutrality targets, the movement from combustion to heat pumps is accelerating in many countries. As we will discuss in more detail later, in Europe, the combination of soaring energy prices due to the war in Ukraine and the move away from Russian gas has led to a rapid acceleration of the shift to heat pumps. In addition, in North America, there is a movement to ban natural gas for new construction in environmentally advanced states. Japan and China are also promoting electrification and energy conservation as national policies.

Furthermore, in response to this trend, an increasing number of private companies are declaring zero CO2 emissions in their factories and offices.

In response to these changes in the external environment, during the FUSION25 latter-half three-year plan which is scheduled to be announced around June of this year, we will materialize and accelerate our efforts to achieve carbon neutrality, including further expansion of our heat pump space/water heater business and reduction of our own CO2 emissions.

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That is all from me.

**Monri:** Next, Daikin Europe N.V. will explain Daikin Europe's heat pump business.

Mr. Yamaguchi, Member of the Board, please begin.

## Background of the Heat Pump Market Expansion

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### Environmental Policies in Europe Affecting the World

- ❑ The policies of environmentally advanced cities in the EU and North America have an international impact on global environmental policy. **In particular, the EU leads the world in the introduction of environmental regulations having a global impact.**
- ❑ Even after the spread of COVID-19, the stance of advocating a "green recovery" **to achieve both economic growth and climate change countermeasures has not changed.**
- ❑ In Europe, where demand for heating is substantial and reliance on the combustion of fossil fuels is significant, **the shift to heat pump space and water heating will greatly contribute to decarbonization. Heat pumps are regarded as a "renewable energy technology," similar to solar power generation and wind power generation. For this reason, the EU and its member states have enacted measures for promoting heat pumps and providing incentives for their adoption.**
- ❑ **The recent Ukrainian crisis has further accelerated the movement to break free from natural gas dependence by replacing combustion type heating with heat pump technology.**

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**Yamaguchi:** Thank you very much. As an introduction to the presentation by Daikin Europe, Yamaguchi will explain the EU environmental policy surrounding Europe's heat pump business.

As you may already know, the EU has long been strategically trying to lead the world market and economy with environmental regulations that have a global impact.

Even after the coronavirus, there will be no change in the Company's commitment to green recovery and to balancing economic growth with climate change measures.

In Europe, where fossil fuels have been used as a heat source for heating, replacing that heat source with heat pumps is expected to achieve a significant reduction in CO2 emissions.

The Ukrainian crisis has prompted the Company to further accelerate this move by moving away from dependence on Russian natural gas and replacing it with heat pumps.

The next three slides will review the history of the past 15 years or so, starting in the mid-2000s, and explain in detail the background of the expansion of the heat pump market in the European market.

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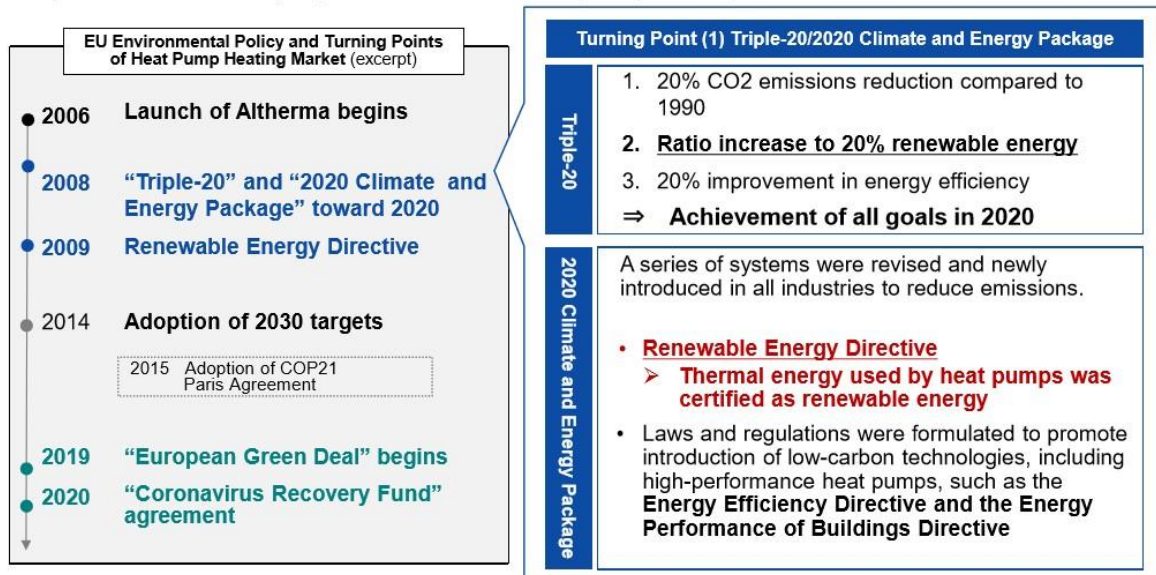
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## Turning Point (1) Triple-20/2020 Climate and Energy Package

- ❑ In 2008, the EU introduced the 2020 target "Triple-20" and the "2020 Climate and Energy Package" to achieve it.
- ❑ **Daikin began sales of Altherma in 2006. Capitalizing on the tailwind of heat pumps being recognized as "renewable energy technology," similar to solar power generation and wind power generation, the company set forth with its heat pump heating business.**



(Source: EU Commission)

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The first turning point is the Triple-20/2020 Climate and Energy Package.

In 2008, the EU introduced the Climate and Energy Package to achieve the Triple-20 target of reducing CO2 emissions by 20%, increasing the share of renewable energy by 20%, and improving energy efficiency by 20% by 2020. The Renewable Energy Directive, which was part of this package, added a new definition of heat used by heat pumps as renewable energy.

In the Energy Efficiency Directive and the Energy Performance of Buildings Directive of this package, decarbonization and low-oxygen technologies, including heat pumps, have been incorporated and have become increasingly legalized.

The introduction of this policy package, which was followed by the launch of the Daikin Altherma heat pump hot water heating system in 2006, provided a tailwind for the expansion of the heat pump heating market and allowed us to grow our business significantly.

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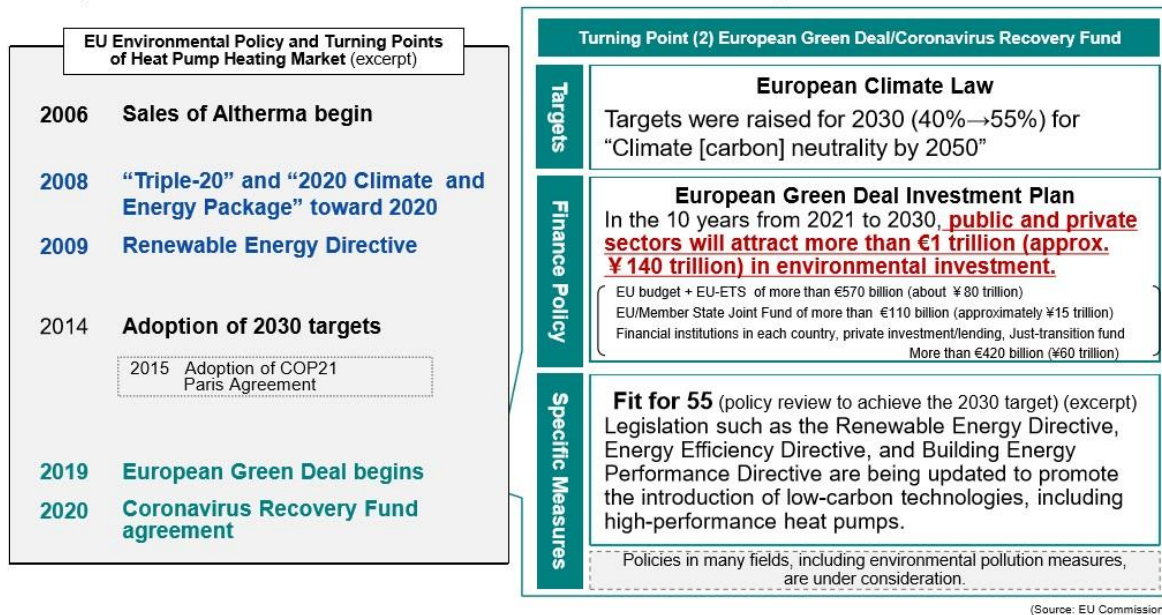
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## Turning Point (2) European Green Deal/Coronavirus Recovery Fund

- ❑ The European Green Deal, which is the most important policy of the current EU administration, is backed by the Coronavirus Recovery Fund and is expected to further accelerate decarbonization by responding to the challenges of financial and social structural transformation in climate change policies.
- ❑ The EU will need extensive financial resources to achieve 2030 housing sector targets, and **legal system improvements to focus environmental investment on the housing sector.**



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The second turning point is the European Green Deal and the Coronavirus Recovery Fund.

The European Green Deal, the most important policy of the current EU administration, is about to further accelerate decarbonization, driven by the Coronavirus Recovery Fund.

In order to achieve the 2030 goals set forth in Fit for 55, this funding is going to be directed to environmental investments in the housing sector. Currently, this legal system is in the process of being developed.

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## European Market Changes after the Ukraine Crisis - RePowerEU

- ❑ **RePowerEU was newly announced in May last year** in the heightened awareness for energy security prompted by the war in the Ukraine. **In Fit for 55** (policy review to achieve 2030 targets), **all targets, including those for energy efficiency and renewable energy, were upwardly revised even further, and measures to curb electricity prices are being implemented in the EU and other countries.**
- ❑ **Heat pumps have attracted attention for their independence from Russian gas.**
- ❑ Heat pump demand rose among end users along with demand for space and water heating.

Summary of RePowerEU (excerpt)	
Acceleration of transition to clean energy	<p><b>Revised target for heat pumps (total introduction of approx. 10 million units over the next five years)</b></p> <p><b>Raise targets for Renewable Energy Directive higher</b></p> <p>Promote wind and solar power generation</p>
Promotion of energy savings	<p><b>Raise Energy Efficiency Directive targets higher</b></p>
Diversification of energy supply	<p>Review of green hydrogen and biomethane targets and coordinate and manage energy imports by member countries</p>
Additional investment	<p><b>€210 billion (approximately ¥29 trillion) is required by 2027, and €300 billion (approximately ¥42 trillion) is required by 2030.</b></p> <p>Utilization of the Recovery Fund, EU-ETS, EU/Member State Level Financial Measures, Private Investment</p>

(Source: EU Commission)

Due to soaring renewable energy prices driven by fossil fuels, member countries agreed to **set a profit ceiling on electric power companies and redistribute surplus earnings to offset higher electricity prices.** From the standpoint of fairness, **a portion of profits will be temporarily collected from companies that sell and use fossil fuels and will be redistributed to compensate for electricity prices.**



Source: European Council  
<https://www.consilium.europa.eu/en/press/press-releases/2022/10/06/council-formally-adopts-emergency-measures-to-reduce-energy-prices/>

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Last year, there were major changes in the European market as a result of the Ukraine crisis. Expectations for heat pumps have been further raised by the upward revision of energy conservation and renewable energy targets in the 2030 target as indicated in Fit for 55, as well as the introduction of measures to control excessively high electricity prices, which go hand in hand with rising gas prices. These price adjustments have also led to an ever-increasing desire for heat pumps from end-users.

The reality of the European market today is that after several such turning points, the movement to introduce heat pumps, which started in 2008, will further accelerate from 2020 onward.

That is all from me. Thank you.

Next, Mr. Kamekawa will explain.

**Kamekawa:** Kamekawa from Daikin Europe will continue with the rest of the presentation.

This slide, which is not included in your handout, provides an overview of the European heat pump heating market.

Originally, in the European heating market, each country had its own strong manufacturers. We believe this is because heating has almost 100% penetration throughout Europe, allowing manufacturers in each country to secure business profits in their country. Because of this, there are still many manufacturers in the European heat pump heating market, with different countries having different strong manufacturers.

As you can see in the figure below, local manufacturers that were originally influential in the combustion heating business have developed. In addition, Japanese and Chinese/Korean manufacturers have also entered

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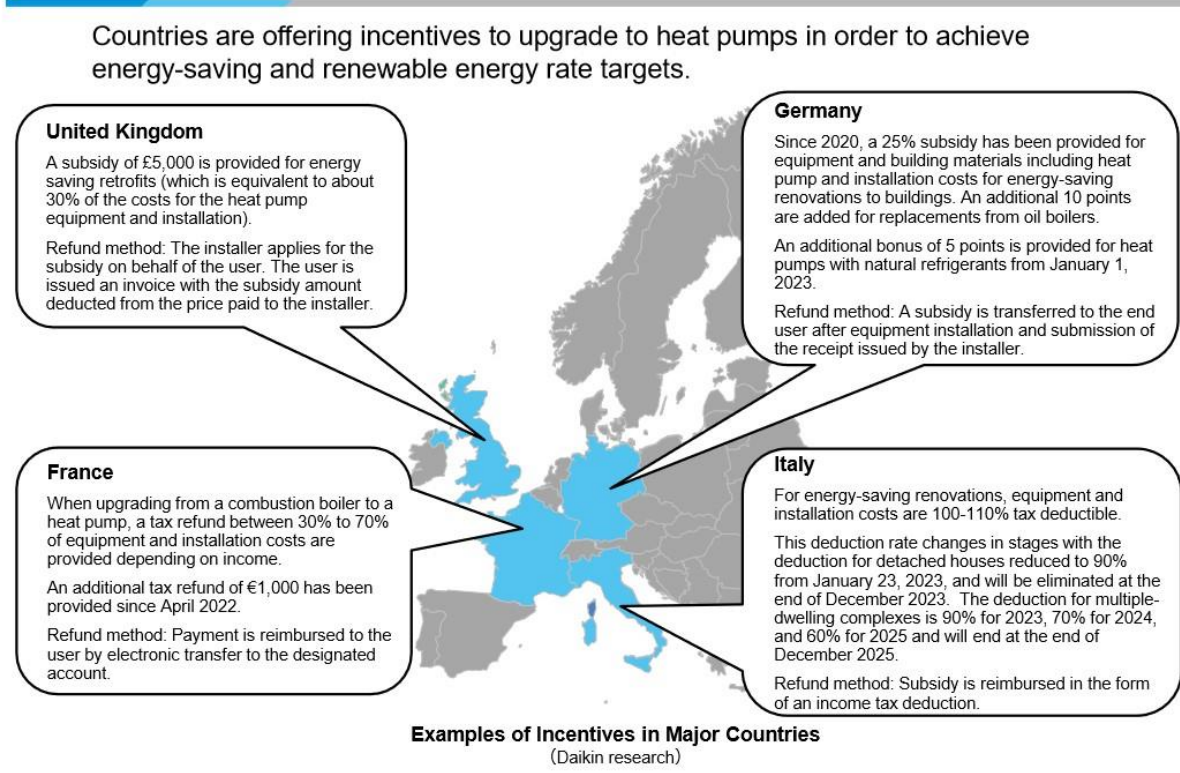
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the market, and competition is becoming extremely fierce. Within Europe, France, Germany, UK, and Italy are particularly large markets.

Celebrating its 50th anniversary, Daikin Europe was the first company to introduce heat pumps to the market in 2006. Leveraging the development, production, sales, and service systems for heat pump products that we have built in our air conditioning business, we became the leader in the European heat pump heating market in 2019 and continue to lead the industry by maintaining the top share.

## Incentives for Introducing Heat Pump Heating by Country



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As Mr. Yamaguchi mentioned earlier, various environmental policies and regulations in Europe are driving the expansion of the heat pump heating market. Here we introduce you to the subsidies that are available in the major countries in the heat pump heating market.

Above left, in the UK, GBP5,000 subsidy is available when renovations lead to energy savings in buildings. This is equivalent to approximately 30% of the cost of the heat pump heating and hot water supply equipment plus installation costs.

Continuing on, bottom left, in France, when upgrading from combustion boilers to heat pumps, approximately 30% to 70% of the equipment plus construction costs will be refunded, depending on income. Furthermore, an additional refund of EUR1,000 has been issued since April 2022.

Moving to the top right, in Germany, starting in 2020, subsidies of 25% of the construction cost of equipment and building materials, including heat pumps, will be available for energy-efficient building renovations. In addition, a 10-point bonus will be added for renewal from oil boilers, and after January 1, 2023, an additional five-point bonus will be given for heat pumps using natural refrigerants.

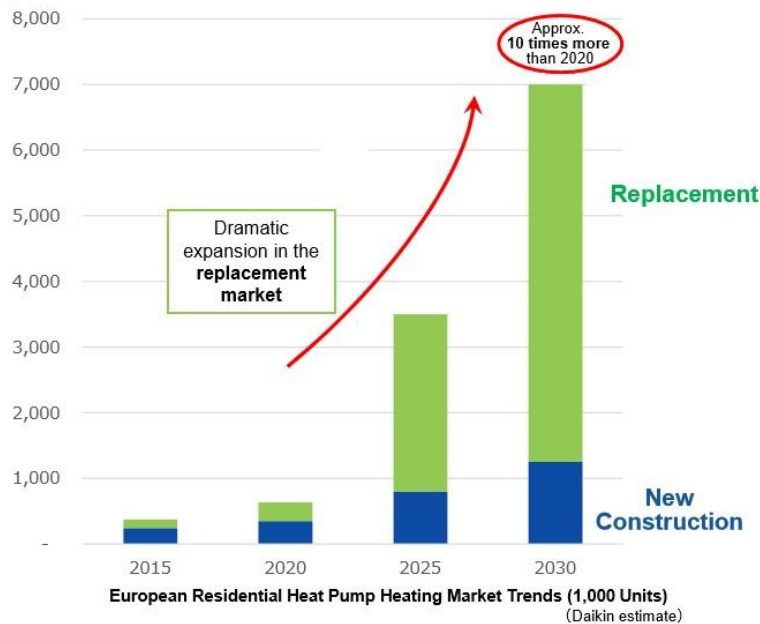
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In Italy, a more daring subsidy program is being developed, with tax credits ranging from 100% to 110% of the equipment plus construction costs for energy-saving retrofits in buildings. The deduction rate will decrease each year, but is scheduled to continue through December 2023 for single-family homes and through December 2025 for multi-family homes.

## European Environmental Policies Spur Heat Pump Market Expansion

- ❑ Whereas use of heat pumps for heating has progressed because of CO2 emission regulations for new homes, **demand in the future for heat pumps is expanding not only for new homes but also for replacements in home renovations that are increasing because of greater incentives.**
- ❑ European environmental policies have caused expectations for a **sales volume increase in the heat pump heating market in 2030 of more than 10 times compared to 2020, accounting for more than half of the heating market.**



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With the support of environmental regulations and subsidies, the heat pump market is expected to expand further in the future.

In the past, the use of heat pumps for heating in new buildings has been promoted against the backdrop of CO2 emission regulations for new buildings. Demand for heat pumps will increase in the future as incentives increase for renewal properties.

As you can see, we expect the heat pump heating market to grow from less than 1 million units in FY2020 to more than 10 times that number by 2030. We expect it to account for more than half of the total heating market, including combustion heating.

That is all from me.

Mr. Mizutani from our company will continue.

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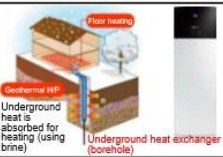
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## Parent Function Responsible for Heating R&D of the Daikin Group

- ❑ In **Europe, combustion heating**, which heats water by burning fuel such as gas or oil in a boiler and circulates the hot water through panels in each room, **is mainstream**. In the future, it will gradually be replaced with heat pump heating.
- ❑ Europe is a large heating market with each region having a variety of needs. Therefore, Daikin Europe's EMEA Development Center serves as the **global parent function responsible for the heating research and development of the Daikin Group**.
- ❑ It quickly identifies the regulatory trends in Europe, one of the world's most environmentally advanced regions, and acts as a receiver for determining development policies for the Daikin Group as a whole.

### [Heating Types and Features for Europe]

(※Market scale in FY2021)

System	Combustion Type		Heat Pump Type			
Heat Source	Fossil fuel combustion heat	Hybrid combustion heat + outdoor air heat	Outdoor air heat			Underground heat
Market Scale	€7,000 million	€400 million	€3,500 million			€750 million
Product Image			 Floor standing Integrated hot water tank	 Wall mounted	 Outdoor integrated	 Geothermal HP Underground heat is absorbed for heating (using brine) Underground heat exchanger (borehole)
Features	<ul style="list-style-type: none"> <li>• Inexpensive equipment</li> <li>• Utility costs are high</li> <li>• Chimney required</li> <li>• Gas supply equipment/ Oil tank required</li> <li>• Annual inspection required</li> </ul>	<ul style="list-style-type: none"> <li>• Dual combustion and heat pump type</li> <li>• Heat source purchase High price</li> <li>• Utility bills can be kept low</li> </ul>	<ul style="list-style-type: none"> <li>• Like room air conditioners, it is a heat pump system that draws heat from the outdoor air through refrigerant.</li> <li>• It is very efficient because it can obtain 5 units of thermal energy from 1 unit of electrical energy.</li> </ul> <p>※Combustion type heaters and electric heaters (fan heaters, etc.) can only obtain less than 1 unit of heat energy from 1 unit of energy.</p>	<ul style="list-style-type: none"> <li>• A hole (borehole) is drilled in the ground to draw heat from the ground instead of outside air.</li> <li>• Heat that is greater than the outdoor air temperature can be obtained even in the middle of winter.</li> </ul>		
Market	All Europe	Netherlands, Italy	France, Germany	France, Italy	UK, Germany	Northern Europe, Germany

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**Mizutani:** Mizutani from the EMEA Development Center will explain about our heat pump heating technology and products.

First, let me explain the development structure of the Daikin Group's heating R&D parent function.

The table lists the types and characteristics of European heating products. As mentioned in the previous presentation, combustion heating was the norm in Europe, where gas, oil, or other fuels were burned in boilers to heat water, which was then circulated to panels in each room. This combustion boiler is being replaced by a heat pump. In addition, the heat pump type has two patterns, one that takes the heat source from the outside air and the other that takes the heat from the ground.

Europe has a large heating market, and because of the diverse needs of different regions within Europe, the EMEA Development Center in Europe serves as the global parent function for Daikin Group heating R&D.

As mentioned earlier, the Daikin Group also serves as an antenna to quickly catch regulatory trends in Europe, the world's most environmentally advanced region, and to determine development policies for the Daikin Group as a whole.

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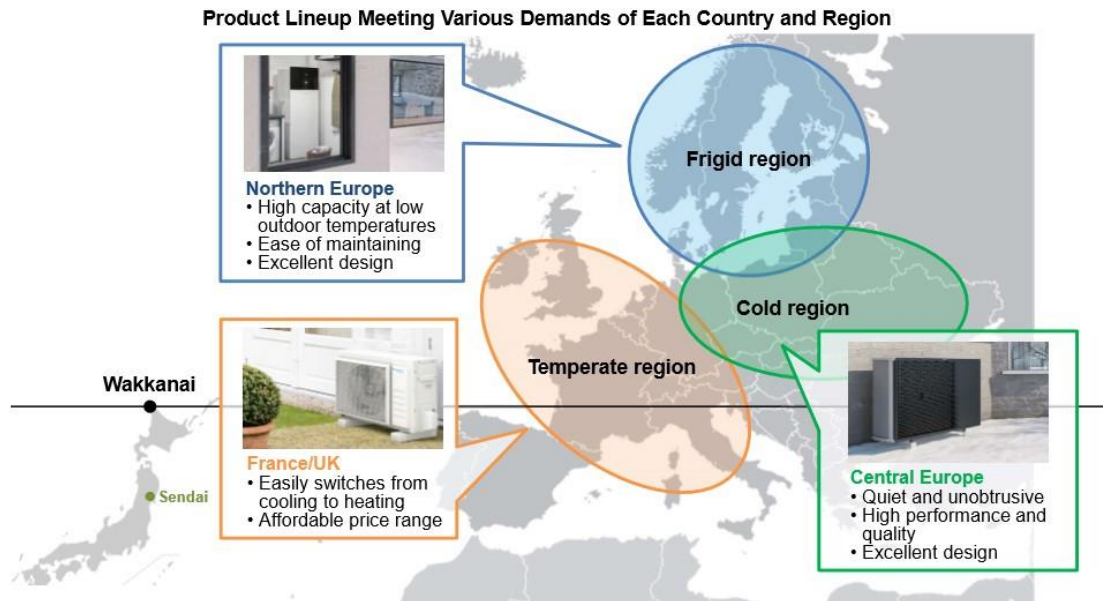
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## Heat Pump Heating Lineup Corresponding to Region

- ❑ Western Europe (France, UK, etc.) is located further north than the Hokkaido city of Wakkanai in Japan, but it has the same temperature environment as Sendai because the westerlies bring the warmth of a warm current (the North Atlantic Current). Central Europe is inland and not affected by oceanic currents, so it has a cold climate that corresponding to its latitude.
- ❑ Daikin has differentiated products that meet the needs and environmental regulations of each country and a product lineup that surpasses that of other companies.



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Here are some ideas for heat pump heating lineups that are compatible with the region.

As shown in the figure below, Daikin classifies the regions into three major categories: temperate regions, cold regions, and frigid regions.

The latitude of France and UK in Western Europe, which is a temperate region, is north of Wakkanai in Hokkaido, Japan, but the environment is almost the same as Sendai because the westerly winds send warmth from the warm currents to the area.

On the other hand, inland Germany and other countries are less affected by ocean currents, resulting in a cold climate at approximately the same latitude.

Daikin has introduced differentiated products that cover the needs and environmental regulations of each country, and has a product lineup that surpasses that of its competitors.

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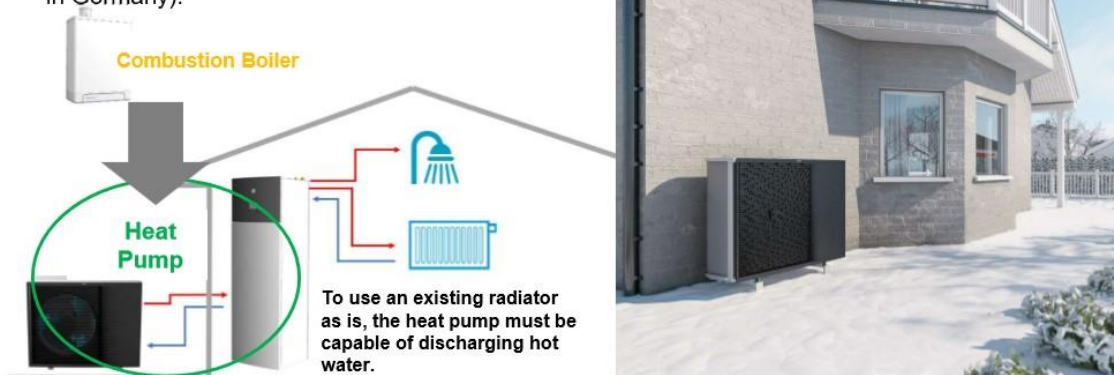
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## Daikin Heat Pump Technology Easily Replaces Combustion Heating

- The EU aims to improve the performance (by reducing CO2 emissions) of 35 million buildings by 2030.
- Current combustion boilers warm rooms by circulating hot water of about 65°C through a radiator. When upgrading from a combustion boiler to heat pump heating and using the existing radiator as is, the heat pump also needs to generate hot water of 65°C or higher.
- When hot water cannot be produced, major home renovations will be needed such as replacing radiators and piping.

### Daikin Altherma Flagship Model (Daikin Altherma 3 H HT)

- ❑ **Our heat pump can produce hot water at -15°C to 70°C on its own** (without using the electric heater function and **is the only one of its kind in the industry**)
- ❑ It is **the only product in the industry that can replace a combustion boiler as it is** without needing a home renovation.
- ❑ Attention was given to the type of **design** and **quiet operation** demanded in cold region markets (mainly in Germany).



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As an example of differentiated products, I will explain products with heat pump technology that can directly replace combustion heating in the renewal market.

To partially reiterate, the EU has set a goal of improving the performance of 35 million buildings by 2030.

The existing combustion boiler works by circulating 65°C hot water through panel radiators to heat the room. When replacing a combustion boiler with a heat pump, if the existing radiator is used as it is, the heat pump must be able to produce hot water at 65°C or higher.

If hot water supply is not possible, the radiator will need to be replaced, requiring major renovation of the house.

Therefore, Daikin's flagship model, the Altherma 3 H HT, was developed with the following three features.

First, 70°C hot water is possible even when the outside temperature is minus 15°C.

Second, the combustion boiler can be replaced without remodeling the house.

Third, sticking to the design and quietness required in the cold region market.

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## Enhancing Capabilities for the Expanding Heat Pump Heating Market

- ❑ To further enhance our technological development capabilities, we are investing 140 million euros / approximately ¥20 billion to establish a new base in Ghent, Belgium, in 2024.
- ❑ In addition to **creating synergies through joint research with Ghent University**, which has one of the world's leading mechanical engineering doctorate programs, we are leveraging the geographical advantage of an international research and development center, public research institutes, high-tech companies, and more than 100 companies. In this way, we aim to strengthen our **ability to compile the latest technological information**.
- ❑ It will lead to the recruitment of **excellent global human resources** since Ghent is a place where international human resources gather.



Image of the new R&D center

### Features of the EMEA Development Centre in Ghent

- Located on the campus of Ghent University, which is a Belgium's university with the highest of standards
- Boasts a testing facility with 22 test rooms and an office building with 14 floors
- Merges R&D in Ostend and Ghent and will employ 400 new employees

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Last, we would like to introduce our efforts to strengthen our development capabilities in response to the future expansion of heat pump heating.

A new location, in Ghent, Belgium, will be established in 2024. We will create synergies for collaborative research at Ghent University, one of the world's leading universities, and take advantage of the geographical location of more than 100 international corporate research centers, public research institutions, and high-tech companies to gather and enhance the latest technological information.

In addition, we would like to recruit excellent global human resources in Ghent where international talents gather.

That's all for development.

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## Heat Pump Heating Business for Solving Social Issues in Europe

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- ❑ Through our heat pump heating business, we at Daikin take on the challenge of creating new value that aims to provide **benefits from a three-way perspective** that includes not only our own company but also our users and the environment.
- ❑ Currently Daikin is working toward solutions relating to the energy crisis that Europe is facing and the challenges of achieving carbon neutrality. As Europe continues to ween itself from natural gas, replacement of combustion heating with heat pump heating equipment is rapidly progressing.
- ❑ Our company sells heat pump heating equipment at a price corresponding to its value and have increased profits through business development that connects with users such as installation and services. We recognize that heat pump heating is an attractive business with the **potential to expand the industry scope**, such as suppliers and installation business partners. As energy prices soar, heat pump heating reduce the **burden of heating costs** for users. Moreover, replacing conventional combustion heating with heat pumps contributes to the environment by **reducing CO2 emissions**.
- ❑ As a leading company, we will create industries where companies can generate profits, create many jobs, invest in product technology and development, and provide innovative products and services to enrich the lives of users and contribute to the environment.

→For this reason, **it is important to formulate rules that create a win-win-win system for companies, users, and the environment.**

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**Kamekawa:** I, Kamekawa, will explain again.

From here, I would like to introduce our business strategy and specific initiatives for future growth.

Before I introduce specific business strategies, I would like to refer to the significance of the heat pump heating business to Daikin.

Daikin launched the Daikin Altherma, which is a heat pump heating water heater, in 2006. One of the reasons behind this was the desire to develop an all-weather business that is not affected by climate.

The AC business faces the challenge that its performance is affected by cool or extremely hot summers. The heat pump heating business was the solution to this problem. We aim to create new value through the popularization of heat pump heating as an alternative to conventional combustion heating, and to achieve a three-way win-win situation that includes not only the Company, but also the user and the environment.

Europe is currently grappling with the challenges of overcoming the energy crisis and achieving carbon neutrality. Due in part to the trend toward degassing, combustion heating is rapidly being replaced by heat pumps.

The heat pump heating business is one in which profits can be increased by selling equipment at a price commensurate with its value and developing a business that connects with users through installation and service.

In addition, it is an attractive business that has the potential to expand the base of the industry, such as suppliers and installation work partners. For users, they can reduce heating costs amid soaring energy prices.

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Furthermore, in terms of the environment, the replacement of combustion heating with heat pumps leads to a reduction in CO2 emissions.

As a leading company, we create industries where companies can generate profits and create many jobs. We also want to invest upfront in product technology and development to enrich users' lives and contribute to the environment with innovative products and services.

To achieve this, we believe it is first important to create a mechanism for win-win-win cooperation among companies, users, and the environment.

## Policy Proposals with Industry Cooperation for Resolution of Social Issues

- ❑ Daikin **provides information and policy recommendations to the EU and member countries in cooperation with industry groups** based on the technological capabilities of Japan and the business results cultivated over many years throughout Europe.
- ❑ As a result, **heat pumps were recognized as renewable energy technology**, and the market expanded.
- ❑ **As a leader in the European heat pump heating market, we will continue to work in cooperation to further contribute to decarbonization, which is being accelerated by the European Green Deal and RePowerEU.**



A senior manager from the Daikin Europe Heating Business Division serves as a board member of the European Heating Industry.



The Environmental Research Centre participates in activities aimed at creating standards for product performance evaluation and unifying building performance evaluations.



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One of our specific initiatives for future growth is advocacy.

Based on our technological capabilities and business experience throughout Europe, which we have cultivated over many years as a specialized air conditioning manufacturer, we work with industry associations to provide information and policy proposals to EU member countries.

We believe that the recognition of heat energy from heat pumps as a renewable energy source in 2008 is one of the results of this effort. For example, an executive from Daikin Europe heating business division serves as a board member of the European Heating Industry, and an executive from the Environmental Research Center participates in activities to create standards for evaluating product performance and to unify building performance ratings.

As the leader in the European heat pump heating market, we will continue to make further contributions to the accelerating decarbonization of the European Green Deal and RePowerEU.

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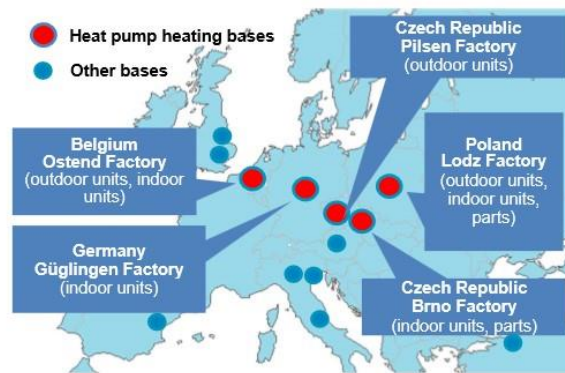


## Boosting Product Capacity to Expand the Heat Pump Business

- ❑ **New heat pump heating plant will start operation in Lodz, Poland, in July 2024**
  - Establishment of a 300-million-euro factory in Lodz, Poland
  - Manufacture of outdoor units, indoor units, and related parts for heat pump heating as Daikin's first plant dedicated to heating equipment
  - Investment equaling approximately 42 billion yen for the largest scale of production for Daikin Europe
- ❑ **Production capacity is increasing at existing plants**
  - Expansion of outdoor unit production lines at the **Belgian factory** in April 2022 and summer 2023
  - Establishment of a new building at the **German factory** with two indoor unit production lines being added in 2023 and another one in 2024
  - Establishment of a 3rd **factory in Brno, Czech Republic**, to start production of heat pump heating indoor units in July 2024

⇒ Based on its **market localization strategy**, Daikin produces 100% of heat pump heating products for Europe in Europe.

Demand in the European heat pump market is expected to expand from 1 million units in 2021 to 3 million units in 2025, and Daikin will achieve a **production volume of more than 400%, far exceeding market growth.**



Daikin Europe AC Production Bases

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Next, I will explain our production efforts to expand our heat pump business.

Daikin Europe is constructing a new plant and increasing production capacity at existing plants. As we announced last July, we will establish a new plant in Poland with an investment of about JPY42 billion. To meet the growing demand for heat pump heating in Europe, Daikin will build its first factory dedicated to heating equipment. This plant is Daikin Europe's largest and most overwhelming production facility.

In addition, we are expanding production capacity at existing plants in Belgium, Germany, and the Czech Republic.

The Daikin Group has followed its market localization strategy of producing and supplying products close to the market to meet the needs of each global region. 100% of the heat pump heating products sold in Europe are manufactured within Europe.

Each of the European manufacturers is also promoting the fact that their products are manufactured in Europe. However, in contrast to European heating manufacturers who are shifting from combustion heating to a heat pump heating-centered business, we believe that we have an advantage in technology and production capabilities in that we have developed heat pump products, including air conditioners, and their key components over many years. We are trying to respond speedily to the growing demand by utilizing our know-how and experience in setting up factories and increasing production capacity in various parts of the world.

European heat pump market demand will grow from 1 million units in 2021 to over 3 million units in 2025. While we are the leading manufacturer in Europe as of now, our production volume will be more than 400% higher than the market growth rate. This is because we want to establish the undisputed number one position in Europe.

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## Analog Strengths of the Dealer Network with Digital Marketing Strategies

- We have built a **B2B2C business model** that uses our **unique digital lead management** to provide promising leads to the dealer network, which is a strength of the Daikin Europe Group.
  - Develop pre-sales (brand recognition, purchase consideration/purchase) using unique digital tools
  - Accelerate development of offline customer contact points and hands-on showrooms
  - Build a professional store network that covers the region

### Showrooms with operational equipment

Showrooms based on the concept of "Offline Experience - Proposal - Contract Agreement" are being developed at sales companies in European countries.

#### Daikin Airconditioning Central Europe



The manufacturer positions itself closer to the end user and establishes company as a premium brand. Together with easing the burden on partner dealers, experiences are incorporated throughout the customer journey.



Digital tools, including apps are used to give a realistic image of the experience after delivery.

#### Daikin Airconditioning Portugal



#### Daikin Airconditioning Spain



#### Daikin Airconditioning UK



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I will continue with an explanation of our sales efforts.

Daikin Europe has a strong dealer and service network under its sales companies in 19 European countries, which it has cultivated through its existing air conditioning business. Our strength lies in sales activities that make full use of our on-site capabilities, such as thorough walk-in sales. For further business expansion in the future, we will develop a unique lead management method using digital in addition to analog sales activities, which is our strength. We are working to build a B2B2C business model by offering promising inquiries to dealers.

In addition to the development of digital platforms, we are also working to increase brand recognition offline through sponsorships and other means. Through these means, we are developing pre-sales activities to connect with customers both digitally and offline and guide them to the point of purchase consideration.

We will also accelerate the development of experiential showrooms and increase offline customer contact. The concept is to provide a realistic experience to customers who have expressed interest on the Web, and to work with dealers to propose solutions and close the deal.

In addition, we will continue to build a network of professional stores and wholesalers that cover the nearest region in each country, ensuring that leads are reaped.

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## Analog Strengths of the Dealer Network with Digital Marketing Strategies

- Our **control system** keeps us connected to users even after the sale of product.
  - The Onecta app enables users to set operational schedules and monitor energy use for residential products such as Daikin Altherma.
  - The Daikin Cloud Service provides predictive maintenance services to monitor energy consumption of multiple buildings through remote monitoring while prevent breakdowns.

**Onecta app** **Daikin Cloud service** 42

We will also strengthen our efforts to stay connected with users through our product services.

For example, the Onecta app for residential products such as Daikin Altherma, where you can set up operation schedules and monitor energy usage.

In addition, Daikin Cloud Service Residential, a remote monitoring service, monitors the energy consumption of multiple buildings and provides predictive maintenance services to prevent breakdowns before they occur.

The deployment of such a control system not only significantly increases user satisfaction, but also keeps the user connected after the product is sold. This is also intended to encourage customers to choose Daikin for service or renewal.

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## Technical and Service Support for Installers and Dealers

The heating market is still centered on combustion heating, and support is needed for the new, unfamiliar technology.

### Technical and service support for installers and dealers

#### ❑ Installer support and technician training

- Bolster training system and facilities
- Provide equipment selection and calculation tools for the complex incentives of each country

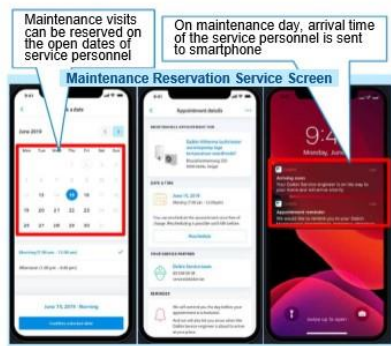
#### ❑ Online support system

- Support throughout the product life cycle via the platform "Stand By Me" that connects equipment, end users, dealers, and Daikin



Users can easily conclude extended warranties and maintenance contracts by credit card payment

Dealers can use the technical assistant function to reduce the hassle of on-site equipment selection, estimates, installation, and repairs



#### Usability diagnosis of existing radiator



WAB-3	4.00 x 1.00 m	Recommended
WAB-5	4.00 x 1.20 m	Recommended
WAB-6	4.00 x 1.50 m	Recommended
WAB-8	4.00 x 2.00 m	Recommended
Colony	4.00 x 1.00 m	Standard
Flow	4.00 x 1.00 m	Recommended

#### Remote monitoring



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Next, I will discuss our service initiatives.

The European heating market is still dominated by combustion systems. Manufacturer support to installers and distributors is important to promote the use of heat pump technology with which they are not familiar.

Therefore, Daikin is focusing on technical and service support. For example, to train technicians in charge of installation, we are improving training systems and increasing facilities in each country and region. We will also continue to provide support to installers and dealers unfamiliar with heat pumps, who have traditionally sold combustion systems, by providing them with the calculation tools they need to select equipment and apply for complex subsidies in various countries.

In addition, we will provide end-users with Stand By Me, a platform that connects equipment, end-users, dealers, and Daikin, as well as support throughout the lifecycle of the equipment.

For example, users can access Stand By Me with their smartphones and easily sign extended warranty and maintenance contracts with credit card payments. Maintenance can also be easily booked online.

In addition, dealers have access to a technical assistance function that can reduce the burden of on-site equipment selection, estimation, installation, and repair.

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## Further Growth and Social Contribution via the Heat Pump Heating Business

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- ❑ The global trend toward realization of **carbon neutrality** is shifting into high gear, and heat pumps are attracting increasingly greater attention as an environmental technology.
- ❑ In 2023, Daikin Europe **celebrates its 50th anniversary** of production start at its Ostend plant in Belgium. In addition to its commercial and residential air conditioning businesses that have supported corporate growth, there is an **opportunity to expand the heat pump heating business as a new business pillar**. As an industry leader, we at Daikin believe that it is our mission to **reduce CO2 emissions and contribute to the environment** through the promotion of widespread adoption of heat pump space and water heating even as we work to expand our business.
- ❑ Daikin Europe has cultivated excellent heat pump technologies and products as a **dedicated air conditioning manufacturer**. Additionally, with a base of sales companies in Europe, the Middle East, and Africa, it has a **strong business foundation that includes a network of dealers** established in each region. Moreover, in cooperation with industry associations, it has built a network of contacts through its advocacy activities for the EU and member countries.
- ❑ Because of these strengths, we believe that Daikin Europe can **quickly and thoroughly implement** specific actions to strengthen R&D, manufacturing, sales, and after sales service capabilities and establish an overwhelming **No. 1 position in the European heat pump heating market**.

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As we have discussed, we hope to achieve further growth in our heat pump heating business through these initiatives.

In Europe, the world is moving in earnest toward carbon neutrality, and heat pumps are attracting a great deal of attention as an environmental technology. We also feel that a shift to natural refrigerants is underway.

We recognize that this is an opportunity to expand our heat pump heating business as a new business pillar, in addition to the commercial and residential air conditioning business that has supported our growth to date. We believe that our mission as an industry leader is to contribute to the reduction of CO2 emissions and the environment as well as business growth by promoting heat pump space and water heating.

At ISH, Europe's largest heating trade show, which will be held in March in Frankfurt, Germany, we plan to unveil a new series of heat pump space and water heating system called Daikin Altherma 4. We are looking forward to further increasing our presence in the European heat pump market. Daikin Europe's press release outlines the exhibition, so if you have a chance to come to Europe, we hope you will visit the exhibition.

We have excellent heat pump technologies and products, which we have cultivated as a manufacturer specializing in air conditioning. We also have a solid business foundation, including a network of dealers based in various countries in Europe, the Middle East, and Africa, which has taken root in each region and has been built up over time. In addition, we work with industry associations and have contacts that we have built through advocacy to the EU and member states.

With these strengths, we believe we can establish the overwhelming number one position in the European heat pump heating market by speedily and thoroughly implementing specific actions to strengthen our R&D, production, sales, and service capabilities.

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This concludes my explanation. Thank you very much for your attention.

**Monri:** Thank you very much.

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## Question & Answer

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**Monri [M]:** We will now move on to the question-and-answer session.

If you have any questions, please let us know using the raise hand button at the bottom and center of the Zoom screen. I will call your name and change the setting so that you can ask questions. If your status is changed to a panelist, please unmute and continue with your company name and your name to ask your question. If you don't mind, we would appreciate it if you could turn on the camera.

There are many participants, so please limit your questions to one at a time, due to time constraints.

Then, Mr. Sano, please go ahead.

**Sano [Q]:** Hello. This is Sano from JPMorgan Securities. Thank you for your explanation. I would like to ask a question.

First of all, you mentioned that you are the current top manufacturer in Europe. I would like to ask you about your company's position and market share in 2030 or 2050, when heat pump heating will account for about 50% of the heating market.

In particular, since you just talked about technology, advocacy, and supply networks, we would like you to put these things into figures, even if it is just an image, and also suggest how the scope of application, including the border carbon tax, will be expanded to heat pumps, as well as further regulations and subsidies. Thank you.

**Monri [M]:** Thank you. Regarding the question, could you please explain from the Europe side?

**Kamekawa [A]:** Yes. Kamekawa will answer your question.

I think your question is about the size of the business in the future as a numerical image from the current top market share established for the years 2030 and 2050.

Although there is an assumption that the speed of this process will depend on future EU policies and the promotion of carbon neutrality, we believe that if Europe is to achieve carbon neutrality by 2050 at the current target, assuming that the average life of current combustion boilers is about 15 years, we believe that heat pumps will have to replace the current combustion boilers by 2035.

Based on that premise, I would like you to understand that the speed that I mentioned earlier will depend on the EU's environmental policy. Assuming that the penetration rate of heat pumps or other heating equipment is almost 100%, with the population of 300 million people, and the average household of three people, and also assuming a 10-year heat pump life cycle, which is slightly shorter than that of a combustion boiler, we believe that there will be demand for 10 million units in the future.

In this context, we are aiming for an overwhelming market share, and although we cannot give a numerical figure since this is our future business plan, we would like to aim for a market share that will allow us to demonstrate our presence in the market. We would like to aim to further increase our market share from what we have shown so far.

**Sano [M]:** Thank you. That is all from me.

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**Monri [M]:** Thank you very much.

Next, Mr. Isayama, please go ahead.

**Isayama [Q]:** Thank you. This is Yuichiro Isayama from Goldman Sachs. Thank you very much for today.

Thank you for your very valuable and interesting talk. I was hoping that you would talk about the competitive environment today, and I would be very interested to hear from you in this area.

The story I have heard in the past is that you have an overwhelming share of the air conditioning market in Europe, so I think you have at least a 20% to 30% share in heat pump heating. Looking to the future, you mentioned that many other manufacturers are entering the market, and subsidies are large, so I would like to ask if it is safe not to consider the risk that the competitive environment will worsen, or if it is possible to maintain your position by differentiating factors such as selling prices.

As you have talked about various things today, I would like to know which of the measures you have taken to maintain your market share is the factor that most differentiates your company, and since it seems that Japanese manufacturers invest considerable resources, what are the factors that differentiate your company from them and win them over? I am wondering if you could give us some hints as to what we should specifically focus on. Thank you.

**Monri [M]:** Thank you. Please give an answer from the European side.

**Kamekawa [A]:** Yes. Well then, Kamekawa will answer again.

Thank you very much for all the compliments. I realized that our past projects are highly appreciated.

I think your question is about the factors that differentiate us to maintain our market share in the future, and what are the winning factors in a competitive environment where many other companies, including Japanese companies, are entering the market.

As Mr. Mizutani, the head of our EMEA Development Center, mentioned, Daikin's technological capabilities include core components, motors, compressors, and, of course, combination technologies, all of which are vertically integrated. Daikin has developed overwhelming products. This is our first base.

That said, renewal is now vigorous due to subsidies and other factors, for example, the fact that it is the only one in the industry capable of producing high hot water output. In Europe, the mainstream system is to install a radiator in the house and heat the room with radiant heat, and distributors can feel at ease in recommending our product to end-users, as they are the only machine in the industry that can discharge hot water at 70°C. We recognize that end-users are gradually gaining their understanding in our activities, and I think that is one of the major differentiating factors.

Naturally, heat pump technology is a specialty of Japanese companies, so they are investing a great deal of resources in this area.

Moving on to the second point, as I have already emphasized, we have already established sales companies in 19 countries in Europe alone. We have had our own factory for 50 years and have developed sales activities rooted in each region.

We use the phrase "onsite capabilities," but we also believe that the human networks and sales techniques we have cultivated over the years are the first step in building up these capabilities. Beyond that, we will

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continue to invest half a step or one step further than our competitors, and further pull away from them by promoting the sales digital we have introduced.

**Isayama [Q]:** Thank you very much.

The penetration rate of heat pumps is probably 10% in the world, maybe a little higher in Europe, but it's such a level, so it's still a long way off that everyone will make it and there will be an oversupply. I think it's safe to say that you can still maintain your market share and selling price from the points you mentioned. Am I correct?

**Kamekawa [A]:** Yes. Currently, we estimate that the penetration rate of heat pumps is still in the low 10% range. In the current situation of incentives, there are of course difficulties in supplying semiconductors, et cetera, and the production volume of each company is still not catching up.

As you say, there is a very big push in incentives to maintain selling prices. We do not believe that incentives will last forever, so we need to stay one step ahead of the competition to prepare for real competition.

**Isayama [M]:** I understand very well. Thank you very much for your very valuable talk.

**Kamekawa [M]:** Thank you very much.

**Monri [M]:** Thank you very much.

Next, Mr. Mizuno, please go ahead.

**Mizuno [Q]:** Thank you. This is Mizuno from UBS Securities.

I know this may be a little bit overlapping with the two previous questions, but could you tell us a little bit more about the competitive environment and your company's competitiveness?

Through daily interviews, we hear that you currently have about 20% of the market share in Europe, and that you are aiming to increase that to 30% in the future. With those numbers in mind first, and then look at page 31 of the slides, the heat pump heating market will exceed three million units in 2025. Therefore, your company's current production target is 1 million units in 2025, and if you can firmly achieve that production capacity expansion target, you will achieve the figure of 30% of that amount, according to my calculation.

What I would like to ask here is the current status of your competitors. I wonder if you could tell us a little more about the speed of their expansion of production capacity, price difference, performance, and so on.

Looking to the future, you mentioned Altherma 4 earlier, and I would appreciate it if you could explain how much the performance of Altherma 4 will improve over 3 and how this will enable your company to expand its lead. Thank you.

**Monri [M]:** Thank you. Please answer from the Europe side.

**Kamekawa [A]:** Your question may be divided into two points. One is that you want to know more about the real situation of the competitive environment, and the other is, concomitantly, what specific advantages we have in terms of technology.

Kamekawa will answer the first one, and Mr. Mizutani, General Manager of EMEA Development Center, will answer the next one about the technical differences between Altherma 4 and Altherma 3.

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First of all, regarding the first part about the competitive environment, please understand that I said earlier that I cannot give you specifics about market share. However, the 20% figure has been mentioned in various media articles in the past, so I think you are correct to some extent. On that premise, I would like to say that, to be honest, in the current competitive environment, we dare not show you our production capacity because how much we can produce is also a very important trade secret.

However, we are not at the level of 1 million units. I hope you can think of our management as constantly thinking about how to respond flexibly to market growth, the EU policy environment, and the speed at which these things are happening.

As for the competitive environment, there is originally a market for combustion boilers, and since business profits can be secured in each country here, each company is developing its own group in each country. First, in terms of major competitors, there are three.

One is a company that originally developed combustion boilers. For example, in Germany, Bosch, Vaillant, and Viessmann are trying to get into heat pumps by utilizing their sales and service networks.

Another is European electronics manufacturers, such as NIBE in Germany and Atlantic in France. These companies continue to develop and deploy their original strength in the electrical system and continue to develop heat pumps.

The third is a company coming in from the Far East. For example, Samsung in the UK, Mitsubishi Electric and Panasonic in France. Also in Italy, Midea from China has acquired Clivet and is building a heat pump factory.

Each of these manufacturers now has an opportunity in the rapidly expanding heat pump market.

However, as I mentioned earlier, we believe that we can continue to be number one only when our technology, sales and service network, and the human networks we have cultivated are all in place, and we intend to sharpen our skills in this area.

Furthermore, companies are announcing bold investments. For example, Viessmann, a German manufacturer of combustion heaters, will build a plant in Poland in 2024 like us, and Atlantic announced at the end of December that it will form a joint venture with Fujitsu General and develop a plant in Lille, France. Mitsubishi Electric is also manufacturing heat pumps at its plants in Scotland and in Turkey, and Panasonic is planning to build a plant for outdoor units in the Czech Republic in addition to its existing plant for indoor units. As I mentioned earlier, production capacity is now a very important key to the competitive environment, and companies are investing very aggressively.

We would like to win the market share by not only keeping our position, but also by gaining shares.

We believe that by doing so, we can contribute to carbon neutrality in Europe, and we would also like to contribute to the reduction of energy costs for end-users. This was a bit long, but General Manager Mizutani, please continue.

**Mizutani [A]:** I think you were talking about how performance will change, but the point is energy conservation and, in Europe, installation of heat pumps in environments where there were no outdoor units before. Since it is sometimes quite quiet at night in Europe, it is difficult to achieve quiet performance, so it is necessary to balance them. We believe that such areas will become competitive.

We are not only working with our development team in Europe, but also with our development team in Japan to identify such issues and customer needs in the market, and to incorporate them into our technologies and products.

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In addition to the machine's catalog specifications, the customer actually uses the machine for many months per year, so the installer also needs to know how to optimally operate the machine each time, and whether the machine is easy to install, given the rapid growth in the number of machines. As Mr. Kamekawa explained earlier, we believe that when the various axes are aligned, people will buy a large number of products.

Rather than simply competing on performance alone, I think it is important to make machines that fit in with the European environment in order to achieve carbon neutrality.

That's it, in a nutshell.

**Kamekawa [A]:** Kamekawa will make an additional comment.

In terms of products suited to Europe, I think it depends on the extent to which they are being developed locally. We are establishing an EMEA Development Center in Ghent, as you saw on the slide. Although it is not only heating, we believe that the further expansion of our R&D center, which is also focused on heating, is a necessary investment to win in one of our competitive environments.

**Mizuno [Q]:** Thank you very much, Mr. Kamekawa. I would like to ask you a quick question, as I don't have an opportunity like this.

Regarding page 31, since you were unable to tell us the pace of expansion of production capacity, what picture did you have six months, a year, or two years ago? Can you give us a sense of how much change has occurred relative to what you originally expected? That's all.

**Kamekawa [A]:** I have been stationed in Europe for 18 years, but this is actually the first time that I have been in such a rapidly changing environment in the past year and a half or two years, and in that respect, this table that we are showing you now has really changed since one or two years ago. In this regard, I feel that our goals and our perception of the market have changed about two to three times in the past year and a half.

**Mizuno [M]:** Thank you. I look forward to the next briefing.

**Monri [M]:** Thank you very much.

Now, the next question, Ms. Liu, is that correct? Please go ahead.

**Liu [Q]:** [Speaks English] My name is Pam Liu from Morgan Stanley Europe. I am participating from London. I have one question.

Germany is an important market for heat pumps, but there should be many gas boiler manufacturers in Germany. We believe these manufacturers are now making heat pumps and have access to installers. Gas installers will need to make major changes to handle heat pumps, but what about competitive advantages? The technology of other companies may not be as good as Daikin's, but then I wonder if stocking installers would be an issue.

How will you compete with the current heat pump manufacturers? In a competitive environment that offers various benefits to installers or competes for installers, how do you secure installers who have switched from combustion heating to heat pumps?

**Monri [M]:** Please give an answer from the Europe side.

**Kamekawa [A]:** [Speaks English] Thank you for your question. I think it was an important question.

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Our biggest competitors in Germany are the traditional heating manufacturers, as you just mentioned. The competitive environment is currently very tough, and it is not easy to compete with them. Access to an installer who can install the heat pump equipment must be secured. The ability to do that installation is very important to us. Technical capabilities are key to getting existing installers to handle Daikin heat pumps. We must be able to replace our product without a backup heater, and if they are new to heat pumps, they need training.

We are committed to being with them in the field, to working with them in the field, and to supporting them to the best of our ability. In order to ensure that the installation is done correctly, we provide ample training. B2B2C to end users is also important. End-users need to understand how Daikin's Altherma 4 and other Altherma units can contribute to energy savings and that they will be installed without any problems.

**Liu [Q]:** [Speaks English] What about loyalty? Is it possible that other manufacturers will be chosen over Daikin?

**Kamekawa [A]:** [Speaks in English] First of all, given the business practices in the German market, an installer cannot choose one manufacturer, but several. Some installers are loyal to their competitors, but even those installers may choose another manufacturer. We must be competitive so that people will choose Daikin.

Since dealing with heat pumps ultimately requires difficult skills such as plumbing and adjusting water volume, it is conceivable that installers will return to a brand they are familiar with and that loyalty will be maintained.

That's all. Thank you.

**Liu [M]:** Thank you very much.

**Monri [M]:** Thank you very much.

We would like to move on to the next question. Mr. Maekawa, please go ahead.

**Maekawa [Q]:** This is Maekawa from Nomura Securities. Thank you very much for your explanation.

I think the high temperature of the hot water was one of the first points of departure for the product. Does this mechanism itself mean that it is unique to your company and that no other company can do it? Whether there is a possibility of catching up from other companies.

Also, you talked about how to compete in the German market. My understanding is that Germany's market share is relatively low, but I think it was high in Italy and other countries. Please let me check on the competition strategy of each region, including the US, and so on.

Thank you.

**Monri [M]:** Please give an answer from the Europe side.

**Mizutani [A]:** Mizutani will answer first and ask others to supplement if they have anything to add.

Regarding the temperature of the hot water, we believe that it will be followed in various ways. The easiest way to do this is to use electric heaters to boil water, and it is important to explain what is in there.

The machines we have introduced today are designed with a higher pressure than air conditioning and use R32, but the advantage is that we have devised a refrigerant cycle and control system to ensure the temperature of the hot water.

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Regarding competitive strategy, I will ask Mr. Kamekawa to answer.

**Kamekawa [A]:** Yes, from Kamekawa.

In Europe, as you say, our position is strong or weak depending on the country.

I was previously the president of the company in Italy, and I believe that we pioneered the sale of heat pumps in Italy with our hybrid system, and we are proud to be a pioneer in this field. We believe that we are taking advantage of that position and are still riding this wave of incentives.

In other countries, such as Germany and the UK, where combustion heating has been the mainstream, we still have a lot of work to do. We would like to further increase our market share by expanding our product lineup and service capabilities, as we have already mentioned, as well as by continuing to conduct activities that other companies cannot do through further integration of offline and digital sales.

I am sorry, but I would appreciate an answer from the Japanese executive officers, not from me, regarding the US.

**Ueda [A]:** I am Ueda from the Corporate Planning Office.

The United States is still a very combustion-based heating region with gas furnaces. Here, the heat pump is first expanded from the heating side. In the commercial sector, energy conservation in buildings has been attracting considerable attention recently, so we are considering taking on the challenge of heating water for buildings as well as for heating.

The rest is for household use, including everything from gas furnaces to hot water heating. We would like to transform the market by exploring what kind of products are appropriate for North America, while creating hot water products for household use ahead of Europe.

That's all.

**Maekawa [Q]:** Thank you very much.

Do you have any thoughts on mergers and acquisitions of competitors, dealers, or in-stores to expand the European HP heating business?

**Monri [M]:** Executive Officer Miyazumi or Executive Officer Ueda, please give an answer.

**Miyazumi [A]:** Yes. We do not rule out M&A to expand sales channels as an option. Anything beyond that is a bit sensitive, so please bear with us.

**Maekawa [M]:** I understand. Thank you very much.

**Monri [M]:** Thank you very much.

Next, Mr. McDonald, please go ahead.

**McDonald [Q]:** I'm McDonald.

I have asked various friends if they are interested in heat pump heating from a British perspective. Whether there is interest in heat pump heating. They said they are interested, of course. However, installation is still a major bottleneck, and even if they ask for help, they have to wait a year or a year and a half. There are similar stories in Germany and the Netherlands. How do you solve this problem, Mr. Kamekawa?

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**Kamekawa [A]:** Thank you for your question.

I think it's a question of what is currently happening, and there are two solutions.

I didn't state clearly earlier, but what we are currently facing is that there is not enough production capacity in each company. I think this is really lacking. Therefore, the speed of the spread of heat pumps in the way that the government is planning to do and our actual supply system have not yet matched up, so there is a situation of so-called excess demand.

Another point is the capacity of the installer since the product must be installed and configured. This varies from country to country. In places such as the United Kingdom and the Netherlands, there is still a shortage of installers. Of course, in terms of heating, there are many contractors who handle water piping, so the challenge for each company is to train these contractors to be able to handle heat pumps.

On the other hand, in Southern Europe, for example, Spain and Italy, there are many contractors who originally worked on both air conditioning and heating installations, so there are construction companies that originally developed heat pumps for air conditioning, rather than heat pumps for hot water supply in the case of Air to Water. In Southern Europe, there are relatively few situations where customers have to wait due to installation capacity, as is the case now. I believe there are fewer situations where they have to wait than in mid-latitude countries like England, the Netherlands, or Germany.

However, please understand that the demand is currently greater than the supply in Europe as a whole, whether in Southern Europe or in mid-latitude countries. I think the situation is similar to having to wait a year for a car in Japan.

**McDonald [Q]:** In the end, in conclusion, it seems to me that you cannot so easily solve this problem of the shortage of people, the shortage of installers that you mentioned earlier in the Netherlands and the UK.

**Kamekawa [A]:** I can't say anything about that. There are also two points, the first of which is that private manufacturers will train installers. And second, there is the fact that the German government is now aiming to spread 500,000 units by 2024 and 600,000 by 2028 in the UK, and of course, the government should be thinking about its installers.

I am not necessarily pessimistic because I believe that the government is thinking about job creation and job training, or something like that. However, you may be right that it takes time.

**McDonald [Q]:** In my view, the UK target of 600,000 units in the picture for 2028 is pie in the sky.

One more thing to confirm, for heat pumps, the market for district heating is also relevant. This time, there are some individualized European images, but do you have any district heating strategies or sales ideas? District heating is still quite large in Germany and Eastern Europe. How do you see the potential of such a market?

**Kamekawa [A]:** Yes. Your question is very prescient.

First of all, we are currently working on individual housing. As for district heating, you may imagine that our heat pumps are for residential use, but we also have large-scale air conditioning systems in our technology, so we are currently formulating a comprehensive strategy that includes these aspects.

As you mentioned, if we consider that the ratio of district heating is 100%, I think 15% to 25% of district heating will remain in the future. At present, waste heat from waste incineration plants, for example, is being used, and assuming that this continues, I expect that heat pumps will be used in the future as well.

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**McDonald [Q]:** Last, just to confirm, initially in your talk, Mr. Kamekawa, you said that the life of a boiler is 15 years and the average life of a heat pump is 10 years, now in your talk through market potentials. Why do heat pumps have a short lifespan?

**Kamekawa [A]:** This may be a structural problem, but gas boilers can be used to some extent if the parts inside are replaced.

**McDonald [M]:** It will work forever, it will work for 30 years.

**Kamekawa [A]:** For the purpose of calculation, we have purposely separated the period of 15 years, but there are various factors, for example, there are not many motorized key components, so the period is long in that respect.

As for heat pumps, in my experience in Japan, where air conditioning is used for most of the year, it takes about 12 to 13 years, but I dare say that it is 10 years rather than 12 to 13 years, which is more precise. However, we still believe that the life of a heat pump will generally be shorter than that of a combustion boiler.

**McDonald [M]:** I understand. I learned a lot today. Thank you.

**Kamekawa [M]:** Thank you very much.

**Monri [M]:** Thank you very much.

We have received many questions, but due to time constraints, we will end with the next question.

Then, Ms. Miyata, please go ahead.

**Miyata [Q]:** I am Miyata, an analyst in charge of ESG at UBS Securities. Thank you for your explanation.

There is one point I would like to ask you about, regarding the heat pump air conditioners in Japan. In December, the GX Executive Committee presented a basic policy on carbon pricing in Japan. In this context, specific carbon levy and emissions trading schemes are emerging in Japan. Although the details have not yet been finalized, we believe that 2026 will be the year in which such transactions and other measures will be strengthened, and that the impact of decarbonization in Japan will be significant and will affect your company as well. Regarding the current outlook for the Japanese market, do you take into account the policies of the most recent GX Executive Committee meeting?

**Monri [M]:** Thank you for your question. General Manager Fujimoto, please answer.

**Fujimoto [A]:** Thank you for your question. This is Fujimoto.

The Japanese outlook is that the Heat Pump & Thermal Storage Technology Center of Japan represents a potential decarbonization of heat pumps, and it is said that heat pumps may have about 14% of Japan's reported reduction target to the United Nations.

On the other hand, as you mentioned, the GX League is also making progress on carbon pricing and reduction contributions, and I would like to tie it to those areas. We are a member of the GX League's leader company, and we would like to promote the idea of including such heat pumps in the reduction contribution.

**Miyata [M]:** Thank you. I will continue to follow up.

**Monri [M]:** Thank you very much.

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With that, I would like to conclude the sustainability briefing. Thank you very much for taking time out of your busy schedule to join us today.

[END]

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