



# Briefing on Sustainability

Contributing to the Realization of a  
Carbon Neutral Society through Our Business

Daikin Industries, Ltd.  
January 18, 2024

## Presenters

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# Today's Briefing Agenda

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## Contributing to the Realization of a Carbon Neutral Society through Our Business

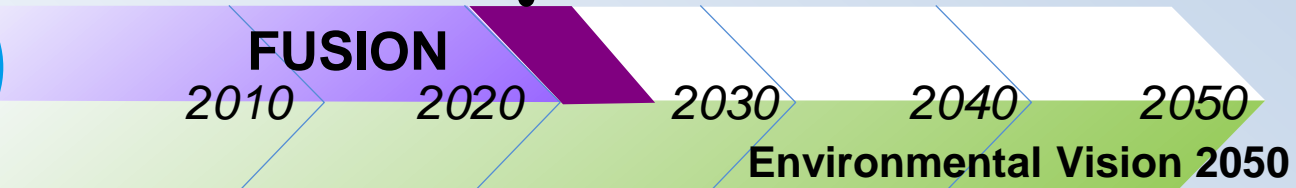
- I . Situation Confronting Daikin and Our Carbon Neutrality Initiatives
  
- II . COP28 Participation Report
  
- III . Daikin Efforts in the Indian Market
  - Promoting both sustainable business growth and environmental consciousness–

# I . Situation Confronting Daikin and Our Carbon Neutrality Initiatives



# Strategic Management Plan Fusion 25

- Efforts for Environmental Vision 2050 have been made in close alignment with the strategic management plan Fusion.
- In the Fusion 25 Latter-Half Three-Year Plan formulated in 2023, we established “Challenge to Achieve Carbon Neutrality” as one of our growth strategy themes and are promoting initiatives for each theme.



### Daikin's Aims for Value Creation

Provide new value that makes people and space healthier and more comfortable while at the same time reducing environmental impact.

Value Creation for the Earth	Value Creation for Cities	Value Creation for People
<p>Reduce environmental impact through all business activities and contribute to alleviating climate change</p> <ul style="list-style-type: none"> <li>● Further raise the environmental performance of products</li> <li>● Make effective use of resources</li> <li>● Protect forests and help sustain their inherent functions</li> </ul>	<p>Contribute to solving energy-related issues arising from urbanization and contribute to the creation of sustainable cities</p> <ul style="list-style-type: none"> <li>● Effectively use energy throughout buildings and entire cities</li> <li>● Build systems for recycling-based societies</li> <li>● Create new types of energy</li> </ul>	<p>Pursue new possibilities for air and contribute to healthy, comfortable lifestyles</p> <ul style="list-style-type: none"> <li>● Provide safe and reliable air environments</li> <li>● Improve indoor environments to support people's healthy and comfortable lifestyles</li> <li>● Advance productivity to contribute to economic advancement</li> </ul>
<p><b>7</b> <small>ENVIRONMENTAL PROTECTION</small></p>	<p><b>13</b> <small>URBAN ACTION</small></p>	<p><b>3</b> <small>HEALTHY AND SAFE LIVES</small></p>
<ul style="list-style-type: none"> <li>● Increased energy efficiency from the adoption of inverter air conditioners, etc.</li> <li>● Development and adoption of lower GWP refrigerants</li> <li>● Adoption of heat pump space and water heating</li> <li>● Utilization and adoption of renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>● Initiatives for net zero emission buildings (ZEB)</li> <li>● Promotion of energy management and demand response</li> </ul>	<ul style="list-style-type: none"> <li>● Protect people from heatstroke and infectious diseases</li> <li>● Countermeasures for atmospheric pollution</li> </ul>
<p><b>9</b> <small>ECOLOGY ENHANCEMENT</small></p>	<p><b>11</b> <small>SUSTAINABLE SOCIETY</small></p>	<p><b>11</b> <small>INDOOR LIVES</small></p>
<ul style="list-style-type: none"> <li>● Initiatives for energy efficiency, recycling-oriented, and lower resource production</li> <li>● Refrigerant conversion in the market along with recovery, reclamation, and destruction</li> </ul>	<ul style="list-style-type: none"> <li>● Contribution to increased productivity by liberation from heat and cold</li> </ul>	<ul style="list-style-type: none"> <li>● Creation of value in air and spaces for people's physical and mental wellbeing</li> </ul>
<p><b>12</b> <small>RESOURCE CONSERVATION AND PRODUCTION</small></p>	<p><b>12</b> <small>INDOOR LIFE IMPROVEMENT</small></p>	<p><b>12</b> <small>INDOOR LIFE IMPROVEMENT</small></p>

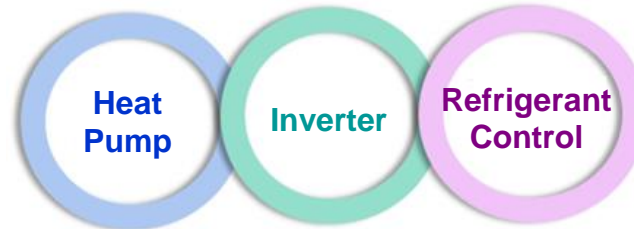
## Fusion 25

### Decarbonization, Air, and Solutions

# Environmental and Core Technologies of the Daikin Group

- Through **Environmental Vision 2050** and **Fusion 25**, we aim to achieve **carbon neutrality**, not only in our business activities, but also in the **greenhouse gas emissions that occur throughout the entire lifecycle of our products** (Company emissions typically fall under the Scope 3 category with 98% occurring downstream during product use and disposal.)
- Our three core environmental technologies of **inverters**, **heat pumps**, and **refrigerant control** have been further enhanced, and we promote **solutions** that are interconnected with electricity and construction. These solutions also **contribute to reducing greenhouse gas emissions outside the company (through contribution to emissions reduction)**.

## Three core technologies supporting carbon neutrality

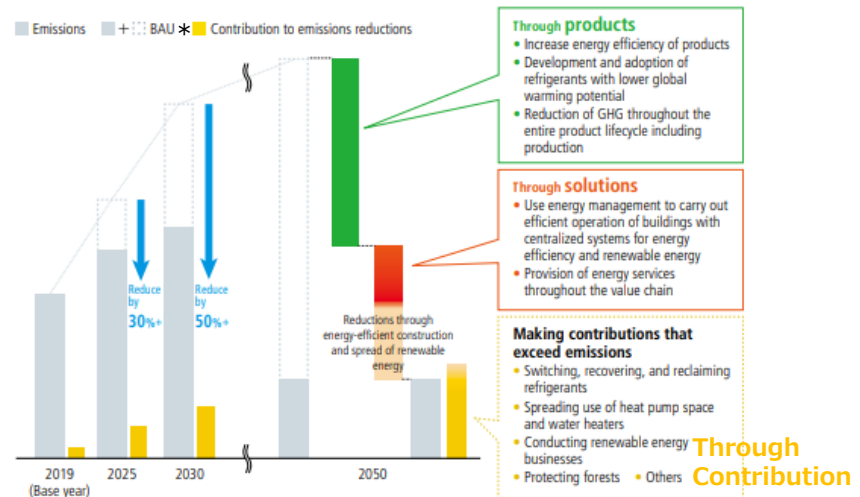


## Environmental Vision 2050



\* BAU : Business As Usual  
Emissions if business grows without countermeasures

## Scenarios for achieving carbon neutrality



# Review of Environmental Initiatives

- In recent years, the **importance of air conditioning has been reevaluated.**
- The importance of saving energy used in air conditioning and reducing greenhouse gas emissions by refrigerants and heat pumps has also been quantitatively reevaluated, and **evidence demonstrates the importance of our environmental technologies and products.** Here we present the example of CLASP (NGO).

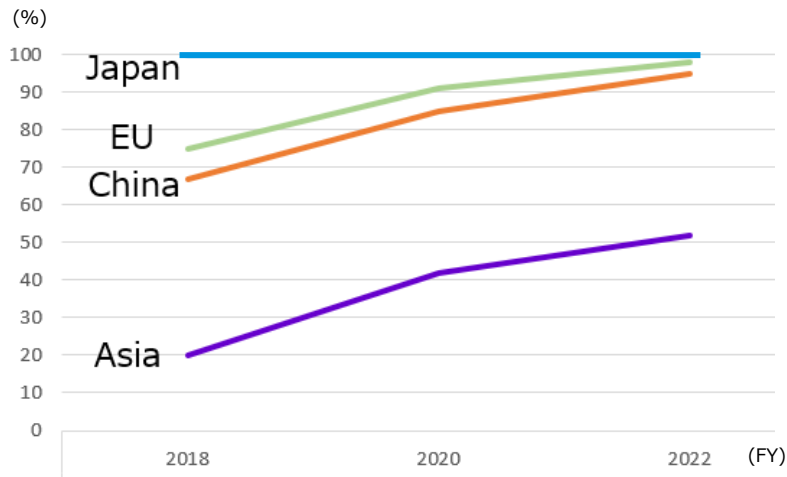
	Measures	Reduction Effect (vs BAU)	Other Contributions
<b>Air Conditioner</b>	<ul style="list-style-type: none"> <li>• <b>Double efficiency by 2030</b> (inverter, etc.)</li> <li>• <b>Achieve revised targets for refrigerants</b> (R32, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>2040</b> 800M-ton CO<sub>2</sub>e</li> <li>• <b>2050</b> 1.1B-ton CO<sub>2</sub>e</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Health and wellbeing</b></li> <li>• <b>Economic growth, improved productivity</b></li> <li>• <b>Heat stress improvement</b></li> <li>• <b>Regional disparity correction</b></li> </ul>
<b>H/P Space and Water Heating</b>	<ul style="list-style-type: none"> <li>• <b>Switch from fossil fuels to heat pumps by 2050</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>2040 (Space heating)</b> 1.2B-ton CO<sub>2</sub>e</li> <li>• <b>2050 (Space heating)</b> 1.8B-ton CO<sub>2</sub>e</li> <li>• <b>2040 (Water heating)</b> 200M-ton CO<sub>2</sub>e</li> <li>• <b>2050 (Water heating)</b> 300M-tonCO<sub>2</sub>e</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Air pollution improvement</b></li> <li>• <b>Economic growth and improved productivity</b></li> <li>• <b>Health and wellbeing</b></li> <li>• <b>Green energy</b></li> </ul>

Source: Performed by CLASP (environmental NGO) by evaluating carbon neutral technology with reference to reports from UNEP, IEA, etc.

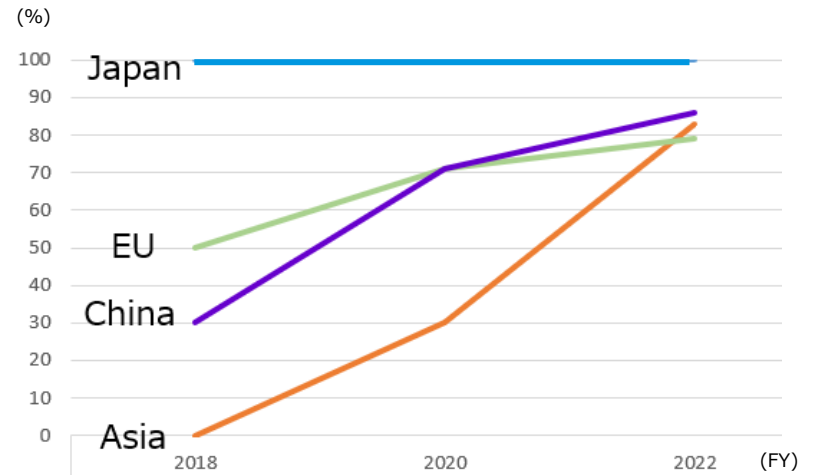
# Results of Efforts: Residential Market

- Daikin has worked for rule formation and provided technical support.
- The world is moving towards energy conservation and decarbonization, and the penetration rates for these have greatly increased over the past 10 years.

## Trends of Inverter Penetration Rate

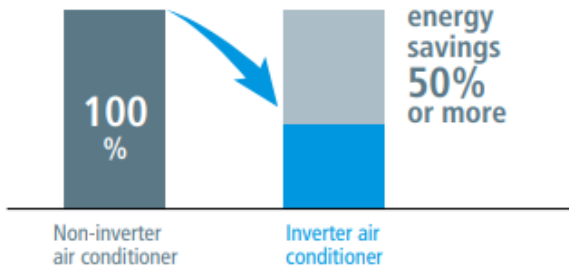


## Trends of R32 Penetration Rate

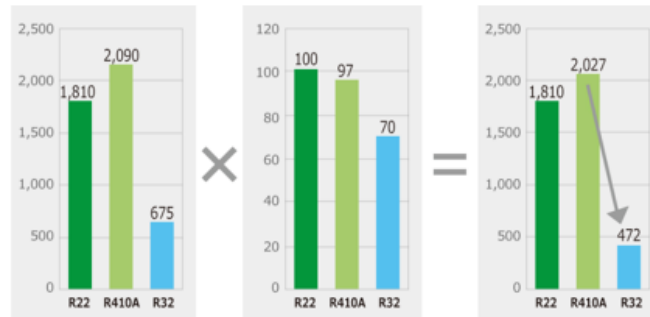


Source: JRAIA statics, UNEP report, and Daikin data

### (Reference) Comparison of Energy Consumption (example)



### (Reference) R32 Global Warming Impact (1/3-1/4 of R410A)



\*Calculated based on Daikin's demonstration testing.



# Current Situation and Issues: Fusion 25 Latter-Half Plan

- In Fusion 25, we set forth “Challenge to Achieve Carbon Neutrality,” “Promotion of Solutions Business Connected with Customers,” “Creating Value with Air” as our three growth strategy themes.
- In the Fusion 25 Latter-Half Three-Year Plan, we announced that all factories, excluding chemical plants, and offices will aim to achieve net zero greenhouse gas emissions by 2030, and chemical factories will target net zero greenhouse gas emissions by 2050.

## Fusion 25 Latter-Half Three-Year Plan

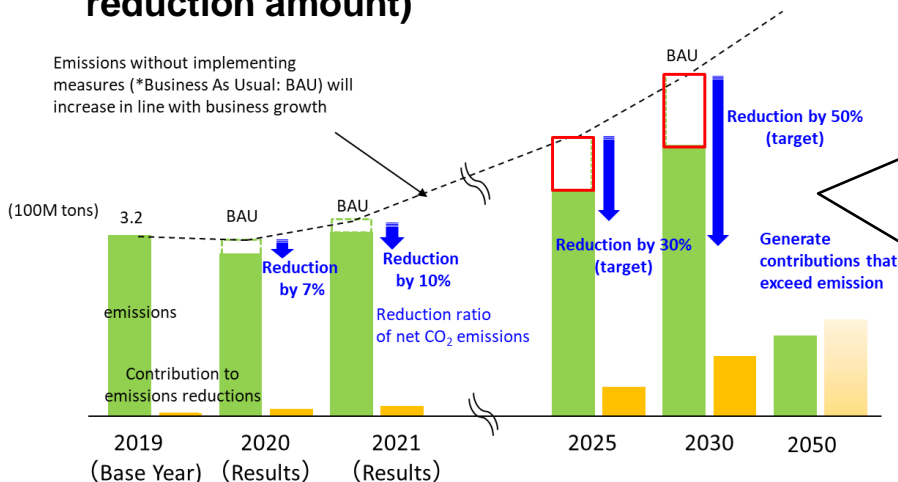
Providing both “Carbon Neutrality” and “Air” while enhancing our “Solutions Business”



### Carbon Neutrality Target

Reduction of 30% by 2025 and 50% by 2030

(Actual reduction rate overall for Scope 1, 2, and 3: Emissions compared to BAU - contribution to reduction amount)



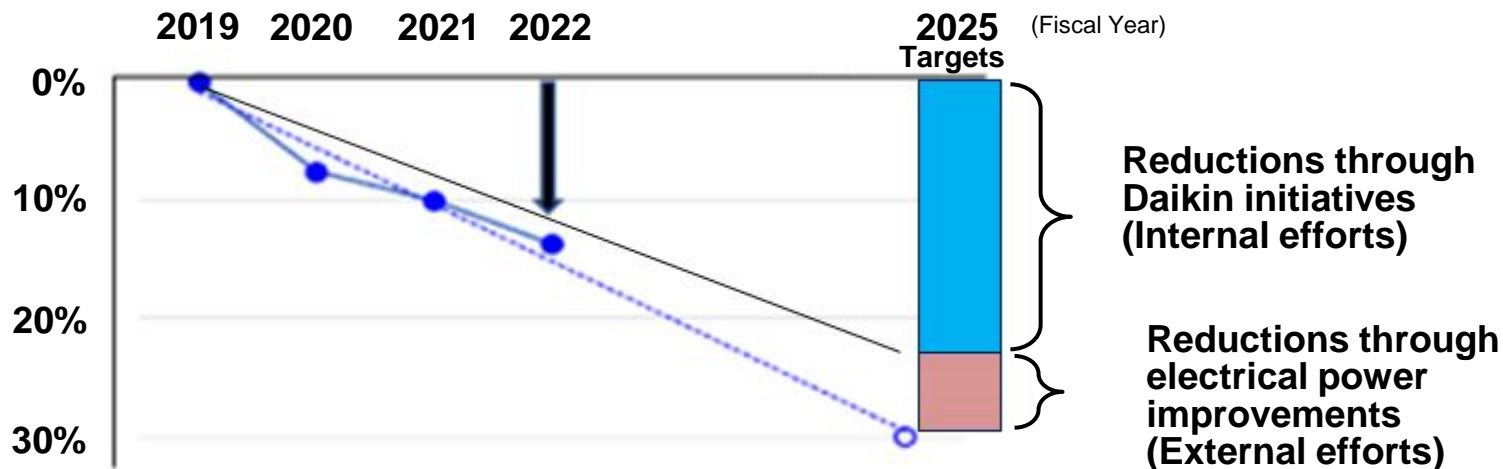
### Reduction Efforts

- (1) Reduction efforts in manufacturing, etc. (development, manufacturing, office) (Scope 1 and 2)
- (2) Reduction efforts during product use and disposal (Scope 3)
  - Reduction of power consumption through inverters and similar technologies
  - Promotion of conversion from combustion heating and hot water supply to heat pumps
  - Promotion of initiatives for low-GWP refrigerants such as R32
- (3) New environmental businesses and technology development
  - Smart cities, energy creation, DAC, etc.
- (4) Increase in contribution to reduction amount (Scope 3)
  - Promotion of inverters in countries where adoption is lagging behind
  - Promotion of expanded use of heat pumps
  - Promotion of further R32 adoption outside our company
  - Work for greater refrigerant recovery and reclamation

# Current Situation and Issues: Progress in the Fusion 25 Latter-Half Three-Year Plan

- Progress is largely going as planned on a global scale for our carbon neutrality targets that include Scope 1, 2, and 3.

## Reduction rate of emission amount combines Scope 1, 2, and 3 (compared to FY2019 based on BAU standards)

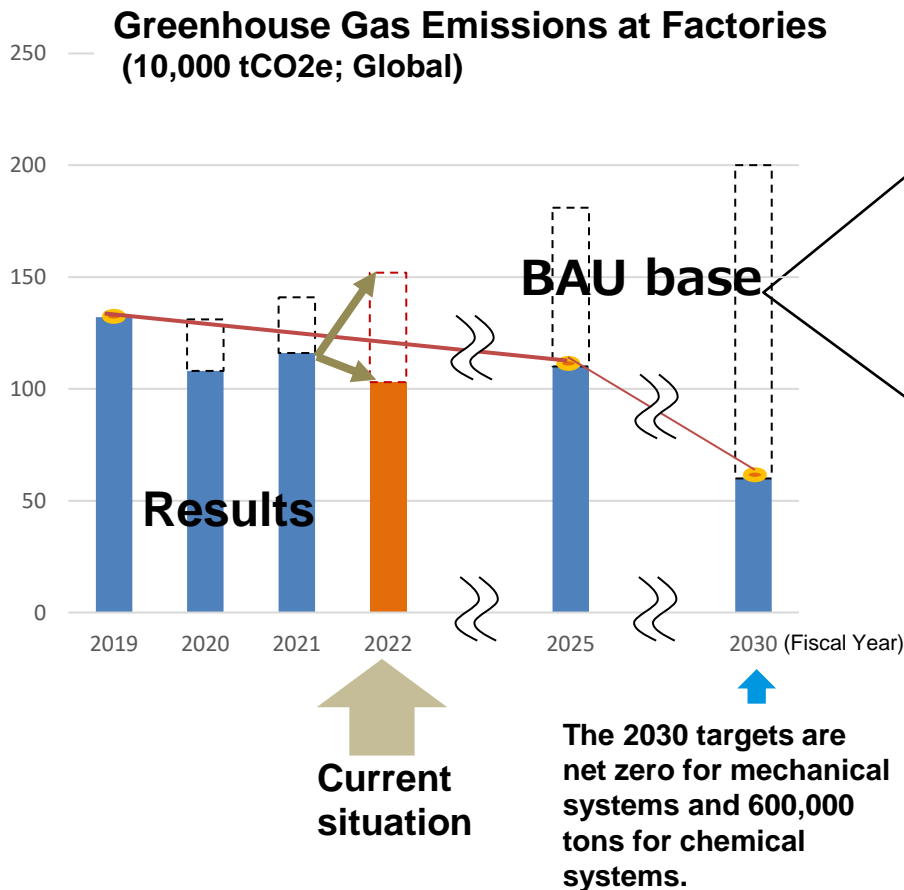


### Issue

- **The rate of improvement in emission factor from electricity** was lower than expected (refer to Bloomberg) . This is thought to be the result of increased coal consumption caused by the situation in Ukraine and electricity demand in developing countries.
- We are currently investigating **improvement measures and ways to cover the emission factor discrepancies from electricity.**

# Current Situation and Issues: Progress in the Fusion 25 Latter-Half Three-Year Plan

- **GHG emissions fell by approximately 10%** in fiscal 2022 from initiatives to create carbon neutral factories, while production volume increased in all regions by 20-30% year on year due to greater air conditioning demand. The roughly 1.16 million tons of CO<sub>2</sub>e occurring in FY2021 were reduced to about 1.03 million tons of CO<sub>2</sub>e in FY2022, exceeding the reduction target.
- Having begun in each region, **measures are rapidly expanding worldwide and include the introduction of green electricity.**



### Status of Reduction Efforts

#### (1) Japan

Promotion of net zero mainly at the Rinkai Factory (renewable energy, ventilation control, heat recovery, heat pumps for factories, and credits)

#### (2) U.S.

- Achievement of 50% green power ratio (DNA Inc.\*)
- Implementation of fluorocarbon countermeasures (refrigerant conversion and leakage prevention), etc.

#### (3) Europe

- Achievement of 100% green power ratio
- Implementation of heat recovery, fluorocarbon countermeasures, energy saving, etc.

#### (4) China

- Rapid implementation for decarbonization due to government policy.
- Energy savings, energy creation, electrification, fluorocarbon countermeasures, etc.

#### (5) ASEAN

- Accelerated energy creation (solar) in many countries

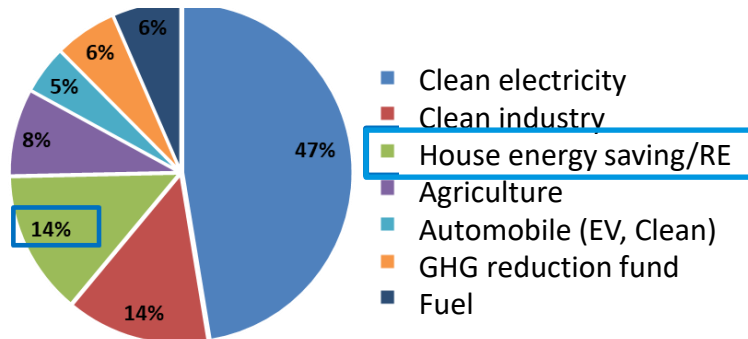
## (Reference) Global Situation United States

- Enacted in the United States in August 2022, the Inflation Reduction Act (IRA), provides consumers with **tax credits and rebates** for heat pump purchases made to promote electrification as a replacement for space and water heating using gas or oil.
- Refrigerant regulations based on the American Innovation and Manufacturing Act (AIM Act) become effective in January 2025, requiring a shift to refrigerants with 700 or less GWP, such as R32.

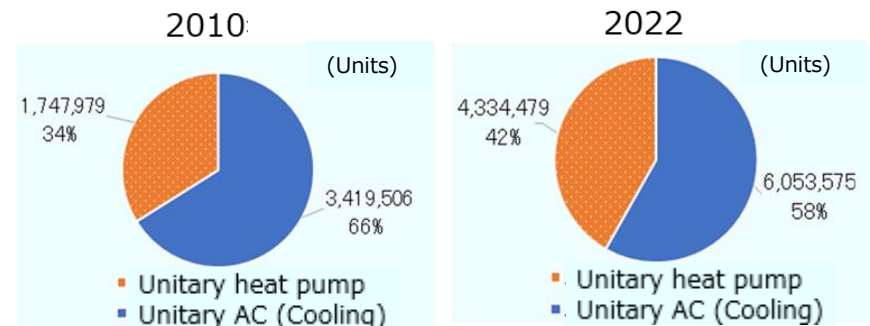
### • Inflation Reduction Act

A total of \$369 billion was allocated for a climate and energy budget. **The budget for “renewable energy and energy efficiency for homes” is approximately \$46 billion, resulting in a proportional increase in heat pump shipments** in the United States. As part of the Biden administration’s environmental policy, the launch of the **Residential Cold Region Heat Pump Challenge program** has created a great opportunity for the spread of heat pumps.

#### Climate and energy budget



#### Share of heat pumps in U.S. AC shipment



Source: JETRO

### • AIM Act

In October 2023, a regulatory proposal effective from January 1, 2025, was issued for refrigerant regulations. **The comprehensive regulations include GWP regulations and refrigerant management (recovery and reclamation).** Main refrigerants are expected to have a **GWP of 700 or less**, which should lead a shift to refrigerants like R32 and to refrigerant reclamation. \*Part of the regulations were revised in December 2023, and products manufactured by January 2025 will have a sales grace period until January 2026.

## (Reference) Global Situation Europe

- In Europe, many policies have emerged in line with “Fit for 55,” formulated in 2021.
- With the revision of F-gas regulations, stricter refrigerant regulations are being enforced.

### • REPowerEU Plan

In 2022, the EU Commission announced the REPowerEU Plan as a strategy to move away from dependency on Russian fossil fuels. **Its aim is to introduce a total of 10 million heat pump units over the next five years and a total of 30 million units by 2030.**

### • Energy Performance of Buildings Directive (EPBD)

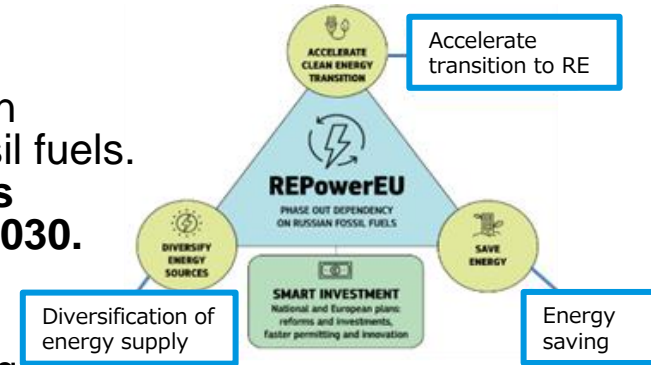
In 2023, discussions on EPBD amendments aimed at reducing energy use and emissions in buildings were finalized. Specifics includes the **complete abolition of fossil fuel boilers in 2040 and the abolition of subsidies for individual fossil fuel boilers in 2025.**

### • Eco Design Regulations

For the requirements for air conditioners of 12kW or less, **consideration is being given for displaying efficiency on energy labels in terms of primary energy to ensure equal evaluation of HP and non-HP (combustion, electric heating)** in addition to raising the regulation values for energy savings.

### • The F-gases Regulation

A revised plan was agreed upon in October of this year. **Stationary refrigerators will be regulated to GWP 150 or less in 2025, integrated heat pumps will be regulated to GWP 150 or less in 2027, direct expansion air conditioners with power of 12kW or less will be regulated to GWP 150 or less in 2027, etc.**



## II . COP28 Participation Report



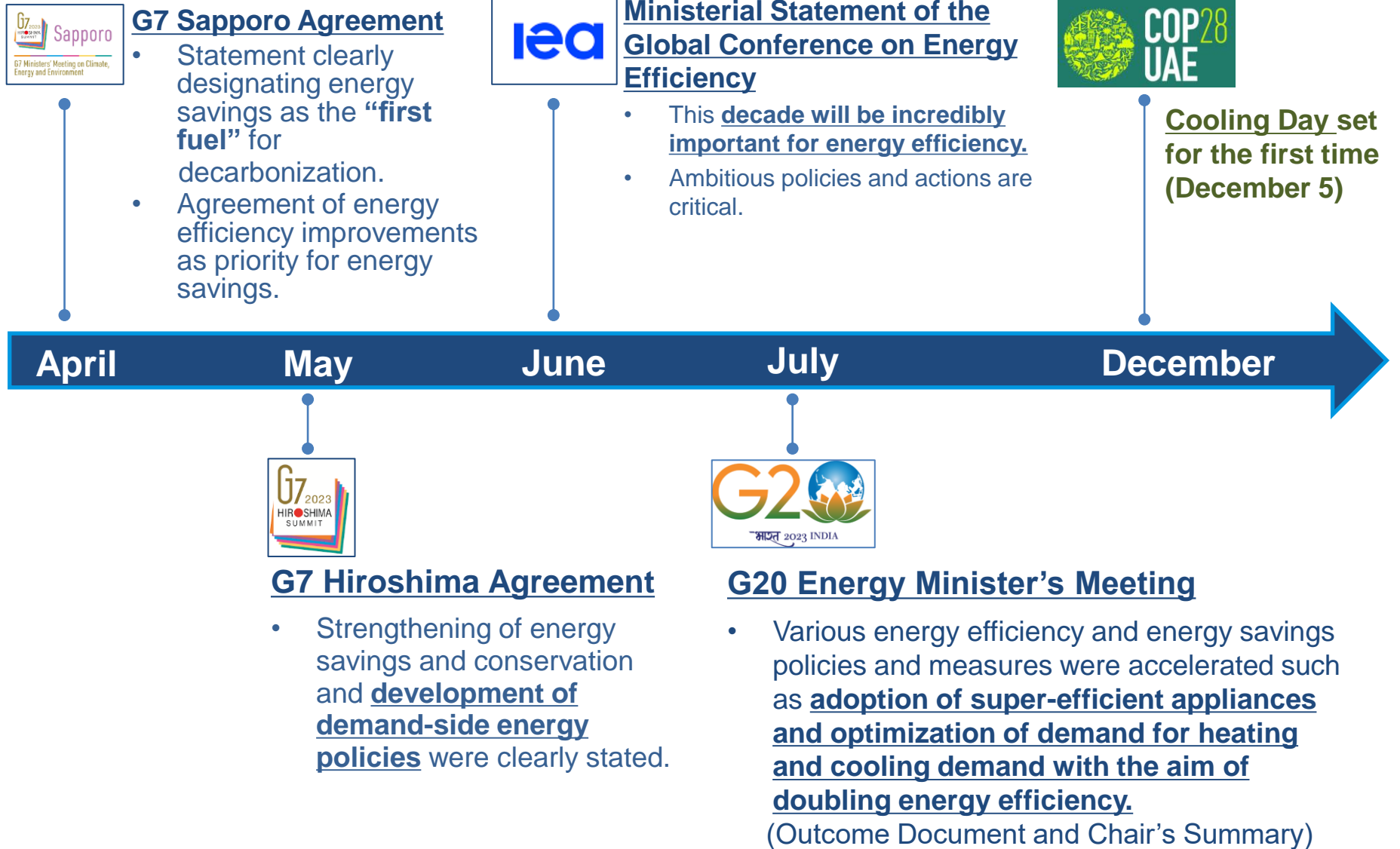
## 2023 Marks First COP Participation for Daikin

- The 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28) held in Dubai from November 30 to December 12, 2023, marked Daikin's first-time participation in COP.
- At COP28, the “the Global Stocktake” (=inventory of progress in reducing GHG emissions that is performed every five years), a mechanism for evaluating the worldwide status progress for the nationally determined contributions (NDCs) that each country established for itself based on the Paris Agreement was discussed for the first time after the Paris Agreement, and a global agreement was reached for a new target that reduces GHG emissions 60% by 2035 based on 2019.
- In addition to those from Japan (Head Office), our company had a total of 13 employees participating in COP28 from the United States, India, and the UAE.

### Main Daikin activities at COP28

- (1) Exhibited for the first time at the Japan Pavilion sponsored by the Japanese Ministry of the Environment and promoted "high-efficiency inverter air conditioners" that contributed to the COP28 decision of "doubling the annual rate of energy efficiency improvements."
- (2) Disseminated corporate initiatives related to energy efficiency and refrigerant lifecycle management through presentations at side events jointly sponsored by the Japanese Ministry of Economy, Trade and Industry and the Ministry of the Environment.
- (3) Made presentations at refrigerant-related side events sponsored by the United Nations Environment Program (UNEP) and JICA.
- (4) Expressed solidarity for the "Global Cooling Pledge," aimed at realizing sustainable cooling led by UNEP and the host country UAE.
- (5) Declared support for the “Buildings Breakthrough” initiative led by France, Morocco, and UNEP and aimed to “net-zero decarbonization of buildings” by 2030.

# Emphasis in 2023 on Promoting Energy Conservation in Air Conditioning





# Daikin Booth at the Japan Pavilion for COP28

- **“INVERTER Air Conditioners Make Immediate Impact, Exceptional Outcomes”** was decided as the booth theme.
- Inverter technology was promoted since its introduction would have an immediate and effective impact toward doubling energy efficiency.

## Booth Exhibition Results and Observations

- More than 1,000 people from about 50 countries visited our booth. Approximately 60% were government officials (mostly energy-related).
- Visitors to our booth came away with the understanding **that inverters are currently on the market and have immediate effectiveness that can be introduced right away.** They also learned that **inverters have a low penetration market rate in the United States** and that air conditioners play an important role in our lives and health, and expressed their understanding of the need to promote energy-efficient air conditioners.
- Whereas our American competitors also gave lectures at the U.S. pavilion, we were able to **provide in-depth explanations at our booth.** Consequently, we were able give detailed explanations to government officials with whom we would normally have difficulty meeting.

Major companies with booths at the Japan Pavilion besides Daikin included the Asahi Group, AGC, SB Power, Mitsui O.S.K. Lines, Taisei Corporation, Daihatsu, Toshiba, JGC, Panasonic, Hitachi, and Mitsubishi Heavy Industries.



# MOE and METI Co-Sponsor Side Events

- On December 5th, MOE and METI hosted the first ever “Panel Discussion with Major Countries and International Organizations Discussing Energy Savings in Air Conditioners and Refrigerant Recovery, Reclaiming, and Destruction Management” at the Japan Pavilion. Approximately 90 people attended, including online participants.

- Side event attendees included Yutaka Matsuzawa, Vice-Minister for Global Environmental Affairs, Shinichi Kihara, Director-General of International Policy on Carbon Neutrality, along with representatives from the International Energy Agency, the Asian Development Bank, the U.S. Department of Energy, the UAE Ministry of Industry and Advanced Technology, the Viet Nam Ministry of Natural Resources and Environment, and the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC), and Daikin Industries and was facilitated by Makoto Kato, Director of the Overseas Environmental Cooperation Center.
- Daikin Senior Executive Officer Katsuyuki Sawai represented the industry and presented policy cooperation for the promotion of energy-saving inverter air conditioners and initiatives for proper fluorocarbon management.



Public Private Partnership makes better Standards & Labeling Program DAIKIN

**Inverter or Variable drive Air Conditioners make Immediate Impact, Exceptional Outcomes**

Countries and Regions that have Cooperated to Spread Energy Efficient Air Conditioners (From 2010 Onward)

UAE, Saudi Arabia, India, ASEAN, Mexico, Brazil

Comparison of energy consumption by Inverter drive Air Conditioners

100 %	energy savings 50% or more
Non-inverter air conditioner	Inverter air conditioner

*\*Calculated based on Daikin's demonstration testing.*

Facilitate “Doubling Energy Efficiency”!

# Support for the Global Cooling Pledge

- The Global Cooling Pledge began with its declaration at the COP28 and aim for doubling energy efficiency improvements for air conditioning by 2030 and accelerating proper refrigerant management.
- Timed with the announcement for the pledge on December 5th, we issued a press release expressing our support. (Competitors Carrier and Danfoss had already announced their support.) At that time, 63 countries, including the United States and Japan, had signed the agreement.

## Main Points of the Global Cooling Pledge

- Commit to work together with the aim of reducing cooling-related emissions 68% (compared to 2022) worldwide by 2050.
- Support the market adoption of high-efficiency air conditioners and work together to double by 2030 (compared to 2022) the global average energy efficiency level of air conditioners sold.
- Reflect by 2026, the phased reduction plan for HFC refrigerants in GHG reduction targets based on the Paris Agreement.
- Promote efforts for lifecycle refrigerant management through proper recovery of HFC refrigerants and similar initiatives.

## Stance of this Company

- The content stated in the declaration is **consistent with the advocacy policy that we have worked for and promoted for many years and support our activities.**
- Specifically, efforts for "widespread adoption of inverters" and "refrigerant recovery and reclamation" have been set as goals to achieve by countries that signed the "Global Cooling Pledge" and will be used in future advocacy activities in each region.



## Future Initiatives Building On COP 28

- The first global stocktake (GST) decision was adopted at COP28. In response to this, countries are accelerating the setting of GHG reduction targets by 2035 in preparation for COP30, which will be held in Brazil in 2025. A drastic increase in reduction targets is expected to be discussed.
- COP29 is scheduled to be held in Azerbaijan in 2024. We will build momentum by leveraging opportunities such as the G7 and G20 to re-accelerate the conversion to heat pumps.

### **Effects of Global Stocktake** (Excluding those relating to the Global Cooling Pledge)

- **Emissions reduction targeting all gases and all sectors...** All refrigerant gases that have a greenhouse effect, including HCFCs, HFCs, HFOs, and natural refrigerants, are being added in the framework of the Paris Agreement, and efforts will be made for reductions.
- **Transition to a sustainable lifestyle...** In addition to energy savings for individual devices, we also incorporate emissions reductions through energy savings in operational aspects, such as increasing the set temperature while maintaining an appropriate temperature.
- **Resource circulation approach...** Efforts are consistent with the Circular Economy and Resource Efficiency Principles (CEREP) and the Global Circulation Protocol (GCP) approved at the G7 Hiroshima Summit.

### **Responding to Changes in Trends**

- In the air conditioning field, the regular meetings of the Montreal Protocol (under UNEP) are the international main stage, and our company actively participates in each one.
- However, as energy conservation and refrigerant measures were taken up at COP28, the U.S. and Indian refrigeration and air conditioning industry associations, International Institute of Refrigeration, as well as competitors such as Trane, Johnson Controls, Carrier, and Danfoss participated. Many machinery manufactures also participated.
- Through our participation in COP28, we recognized that measures in the air conditioning field may become a more central theme in future COPs, and we plan to analyze and respond to both the discussions at the upcoming Montreal Protocol meeting and the COP's movements.

### III . Daikin Efforts in the Indian Market

– Promoting both sustainable business growth and environmental consciousness–



1. Introduction to the Indian Market and Daikin Air Conditioning India Pvt. Ltd. (DAIPL)
2. Initiatives for Sustainable Business Expansion
3. Summary

## 1. Introduction to the Indian Market and Daikin India



- a. Economic Trends in India
- b. Indian Residential AC Market
- c. Overview of Daikin Airconditioning India Pvt. Ltd.



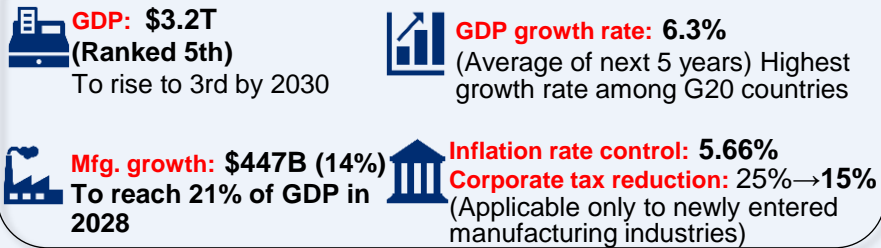
## 1-a Economic Trends in India

# Economic Trends in India

- According to the UN, **India's population reached 1.4286 billion people in 2023, surpassing China as the world's largest population.**
- With its remarkable economic development, personal consumption is expected to be around \$6 trillion dollars by 2030, **making it the world's largest consumer market.**
- The Indian government **actively works to attract foreign investment.** To **accelerate domestic production**, the number of items subject to standards requiring mandatory certification is increasing.
- The **Make in India policy** is steadily being implemented, and private companies are encouraged to "Make in India & Make for the World."

## Huge and Attractive Domestic Market

### Secure Economic Foundation

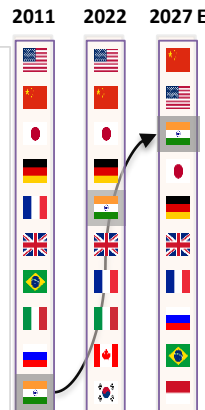
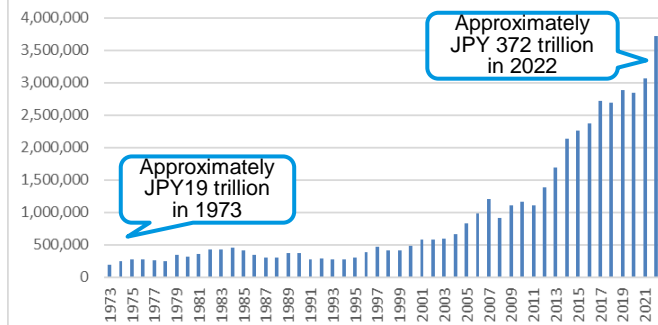


### Huge Population with Underlying Growth Potential



## Transforming into the world's 3rd largest economic power in 2027

Unit = ¥ 100M Trends in India's nominal GDP (1973-2022)



## India aims to be the world's leading manufacturing and exporting country by leveraging its "potential domestic market scale" and "sizable, low-cost labor."

- Not only domestic demand, but scale of overseas exports is expanding.

### Bilateral trade agreements:

- (1) FTA has been concluded with Australia and the UAE.
- (2) Discussions are underway with the UK and the EU.

Countries	Labour Wages USD/month	Power cost USD/KWh	Water cost Usd/m <sup>3</sup>
China	550-600	0.15-0.16	55-60
India	160-180	0.10-0.12	16-20
Bangladesh	110-120	0.09-0.12	20-22
Vietnam	190-200	0.08-0.10	50-80
Ethiopia	80-90	0.03-0.04	30-40

BCG Analysis

## Improving Mfg. Competitiveness and Promoting Overseas Exports





## 1-b Indian Residential AC Market

# Indian Residential AC Market

## Amazing Growth in Domestic Residential AC Market

- Many regions in India face high temperatures and humidity and there are deaths from heat waves, but the **penetration rate of air conditioners in general households remains at around 7%** (representing roughly 20 million households owning an air conditioner out of 290 million).
- With an expanding middle class, air conditioners are the fastest growing home appliance in India, and AC demand will clearly continue to rapidly grow in the future. **More than 1 billion air conditioning units, or 40 times the number of units in 2016, are expected to be used in 2050.**










## Market Size Trends

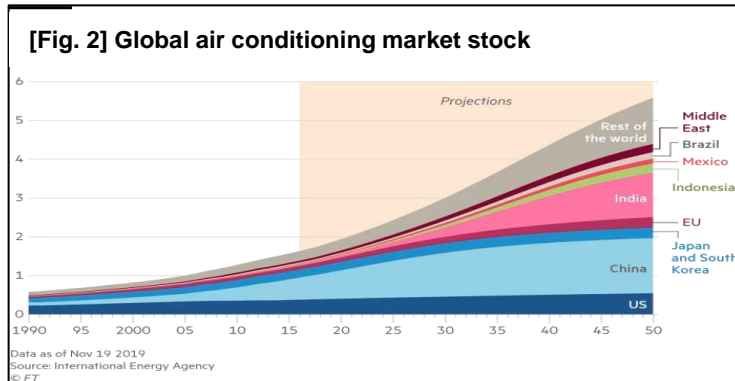
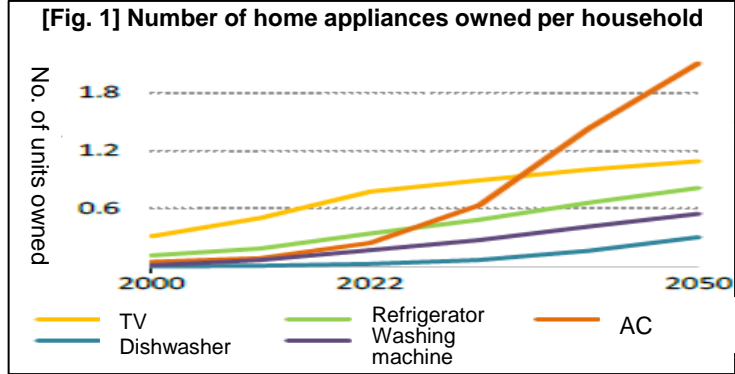
- Even though a temporary decline was seen in 2020 due to the impact of COVID-19, the market volume of residential air conditioners has been on the rise since 2015.
- Market size in 2022 was about 6 million units (Daikin estimate)
- The market is expected to reach 10 million units in 2025.

## Competitive Situation in India

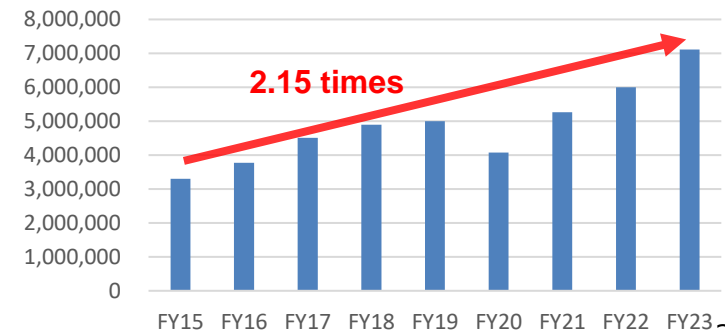
- In addition to India's ample, low-cost labor force and growth potential, the Indian government's "Make in India" policy to promote local production has been a boost, and manufacturers from various countries are actively investing in India.

[Fig. 4] Market share trends

	FY15		FY19		FY22	
1st	Voltas 	16.4%	Voltas 	19.0%	Daikin 	18.4%
2nd	LG 	15.9%	Daikin 	17.3%	Voltas 	17.0%
3rd	Daikin 	13.4%	LG 	11.4%	LG 	13.3%



[Fig. 3] Residential AC market volume





## 1-c Overview of Daikin Airconditioning India Pvt. Ltd.

# Overview of Daikin Airconditioning India Pvt. Ltd. (DAIPL)

## Developing Community-Base Business for No. 1 AC Brand

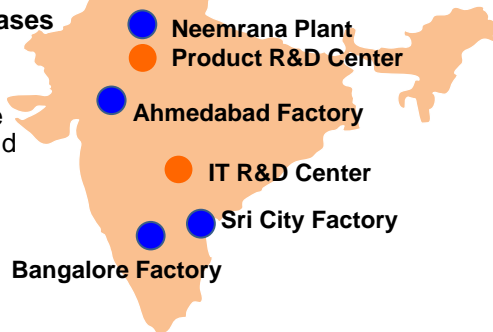
- Localization of Production Development**  
 A production base was established in 2009 with an expanded production lineup in 2012 and localized development in 2016.
- Localization of Senior Management**  
 Instead of assigning a Japanese national, an Indian national was selected as company managing director. Because of this, the managing director has extensive knowledge of local needs and has established a system to respond to demand in a timely manner.
- As a Local Company**  
 In 2020, MD Jawa became president of the Indian Refrigeration and Air-Conditioning Manufacturers Association (RAMA) and leads the public-private collaboration in the Indian market by exploring energy-saving performance and making recommendations for the development of standards and regulations.

<b>Company Name</b>	DAIKIN AIRCONDITIONING INDIA PVT. LTD. (DAIPL)
<b>Established</b>	April 2000 (Established as Daikin Shriram Airconditioning Pvt. Ltd.)
<b>Location</b>	Headquarters: Gurgaon, Haryana Factories: Neemrana Plant 1st Factory (est. 2009) Neemrana Plant 2nd Factory (est. 2017) Sri City Plant (launched from July 2023)
<b>Capital</b>	8.029 billion rupees (approx. 13.2 billion yen)
<b>Sales</b>	67.8 billion rupees (approx. 108.5 billion yen) (FY2022)
<b>Shareholders</b>	Wholly-owned subsidiary of Daikin Industries since December 2004
<b>Employees</b>	Approximately 6,000 employees (including 4,900 employees at factories) (30 dispatched Japanese people)
<b>Areas of Business</b>	Manufacture and sale of air conditioners and chillers along with related after sales services

[Fig. 1] F25 DAIPL Production Bases

4 production bases,  
2 R&D bases

- 1st and 2nd Factories at the Neemrana Plant (in 2009 and 2017, respectively)
- Ahmedabad Factory
- Bangalore Factory
- New Sri City Factory (2023)
- R&D Center (2016)
- IT R&D Center (2020)

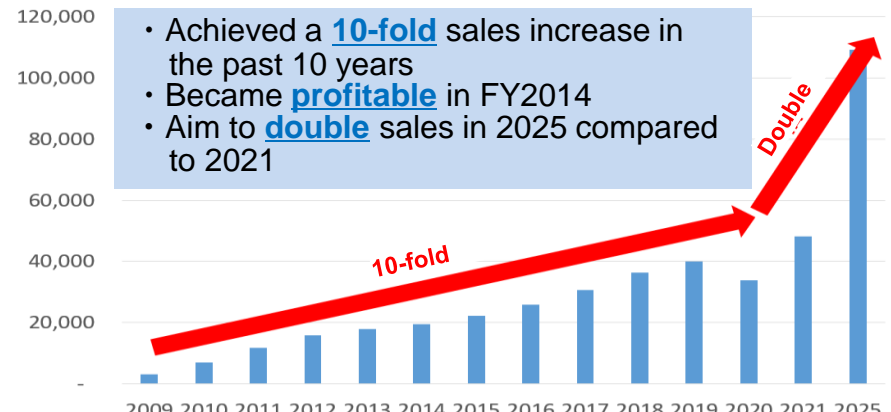


### Sri City Factory (started operations in July 2023)

- Provides products to southern and eastern Indian markets with shorter lead times.
- Avoids custom duties with Make In India.
- Lays groundwork to expand exports to South America and the Middle East.

[Fig. 2] Sales Trends

(Million rupees)



# History of DA IPL

Localized production has been accelerated and business scale expanded since the 2010s



**2000**  
Daikin Shriram  
Airconditioning Pvt. Ltd.  
established in New Delhi

**2009**  
Commercial AC  
production base  
established in  
Neemrana

**2012**  
Production  
starts for  
residential AC

**2016**  
R&D Center  
established

**2020**  
Hyderabad IT  
R&D Center  
established

**2000**

**2005**

**2010**

**2015**

**2020**

**2002**  
Daikin first  
enters  
commercial  
AC market  
in India

**2004**  
DAIPL becomes  
wholly-owned  
Daikin subsidiary

**2009**  
Kanwal  
Jeet Jawa  
becomes  
managing director



**2012**  
R32 refrigerant  
is adopted next  
after Japan

**2015**  
Export  
business  
starts

**2017**  
Japanese-style  
manufacturing  
school opened

**2023**  
New factory  
established  
in Sri City

**2007**  
Head office  
moves to  
Gurgaon



## 2. Initiatives for Sustainable Business Expansion



- a. Product Initiatives
  - 1. Creating an Inverter Market
  - 2. Promoting the Adoption of Low GWP R32
  - 3. Developing Region-Specific Products
- b. HR Development Initiatives
  - 1. Skill Improvement at Industry-Academia Collaborative Training Institutions (COE)
  - 2. HR Development through the Japan-India Institute for Manufacturing (DJIME)

## Indian Market Characteristics

Greater Environmental Burden from Economic Expansion

Harsh Climate That Varies by Region

Lack of Skilled Labor

“Make in India” Policy



## Response

Introduction of Environmental Regulations

Regionalized Product Development and Production

Training, HR Development

Localized Production Strategy

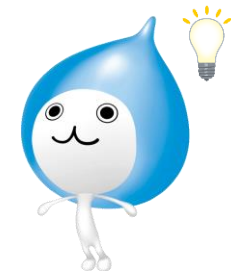
## Daikin Initiatives

Promotion of Inverters and R32 Refrigerant

Localization of Product Development

Establishment of COE and DJIME

Establishment of Factories and Use of Local Companies and HR





## 2-a Product Initiatives

1. Creating an Inverter Market
2. Promoting the Adoption of Low GWP R32
3. Developing Region-Specific Products



# Creating an Inverter Market

- We aim to promote the use of highly energy-efficient inverter air conditioners **to reduce CO<sub>2</sub> emissions from electricity consumption when using air conditioners.**
- To promote inverter adoption, we lobbied the Bureau of Energy Efficiency (BEE, India) for **introduction of energy-saving labels and enactment of stricter energy-saving regulations** in leading the industry in promoting inverters.
- The increased cost of regulatory compliance also affects our company and creates difficult conditions for us, but as a leading company, we intend to **continue lobbying government agencies to respond to social issues in India.**

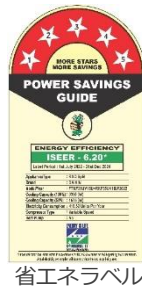
Up to 2015  
Working to introduce energy-saving labels in India

2018  
Mandatory energy-saving labels (for residential use)

2022  
Higher energy-saving regulation values

2015                      2018                      2020                      2022                      2023                      2024                      2025 and beyond

2015  
Voluntary introduction of energy-saving labels (for residential use)



省エネラベル

2020  
MD Jawa appointed as RAMA (\*) president

\*Indian Refrigeration and Air-Conditioning Manufacturers Association

2023  
Mandatory energy-saving labels (for commercial use)

Fig. 1: Market for Inverter-Type AC and Daikin Targets

	2015	2018	2020	2022	2025
Market	13%	28%	35%	70%	90% and above
Daikin	22%	43%	50%	70%	90% and above

Fig. 2: Changes in Energy-Saving Regulation Values (Indian Energy-Saving Label)

2018 to 2021 end			2022 to present (up to 2024 end)			2025 (planned)		
Rating	Maximum	Minimum	Rating	Maximum	Minimum	Rating	Maximum	Minimum
5★		4.50	5★		5.00	5★		5.30
4★	4.49	4.00	4★	4.49	4.40	4★	5.29	4.70
3★	3.99	3.50	3★	4.39	3.80	3★	4.69	4.10
2★	3.49	3.30	2★	3.79	3.50	2★	4.09	3.80
1★	3.29	3.10	1★	3.49	3.30	1★	3.79	3.50

※Numbers represent seasonal energy efficiency ratio (SEER) values in India.

# Promoting the Adoption of Low GWP R32

- To lead the industry in environmental protection activities, **Daikin developed R32, which is a low GWP refrigerant, and led other companies to create market interest in refrigerants with low environmental impact.**
- R32 complies to high efficiency and energy-saving regulations and to various environmental protection regulations.
- Currently, all manufacturers use R32 refrigerant in residential air conditioners.



2017 Daikin India receives National Energy Conservation Award

2019 Daikin declares non-assertion of R32 rights

2020 MD Jawa appointed as RAMA(\*) president

\*Indian Refrigeration and Air-Conditioning Manufacturers Association

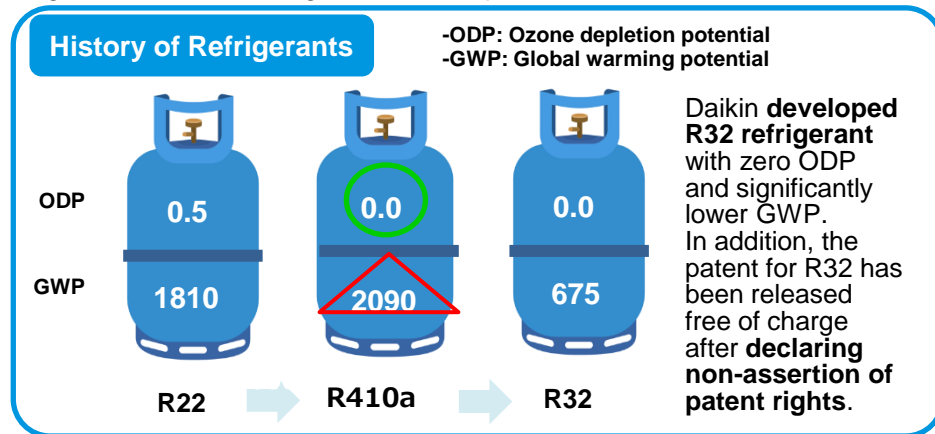
Fig. 1: Kigali Revised Schedule

	Developed Countries	Developed Countries Group 1	Developed Countries Group 2
Baseline Years	2011 to 2013	2020 to 2022	2024 to 2026
Standard value (HFC + HCFC)	Average HFC production and consumption for each year +HCFC standard value X 15%	Average HFC production and consumption for each year +HCFC standard value X 65%	Average HFC production and consumption for each year +HCFC standard value X 65%
Moratorium	None	2024	2028
Reduction Schedule	2019: -10% 2024: -40% 2029: -70% 2034: -80% 2036: -85%	2029: -10% 2035: -30% 2040: -50% 2045: -80%	2032: -10% 2037: -20% 2042: -30% 2047: -85%

India is in the second group of developing countries

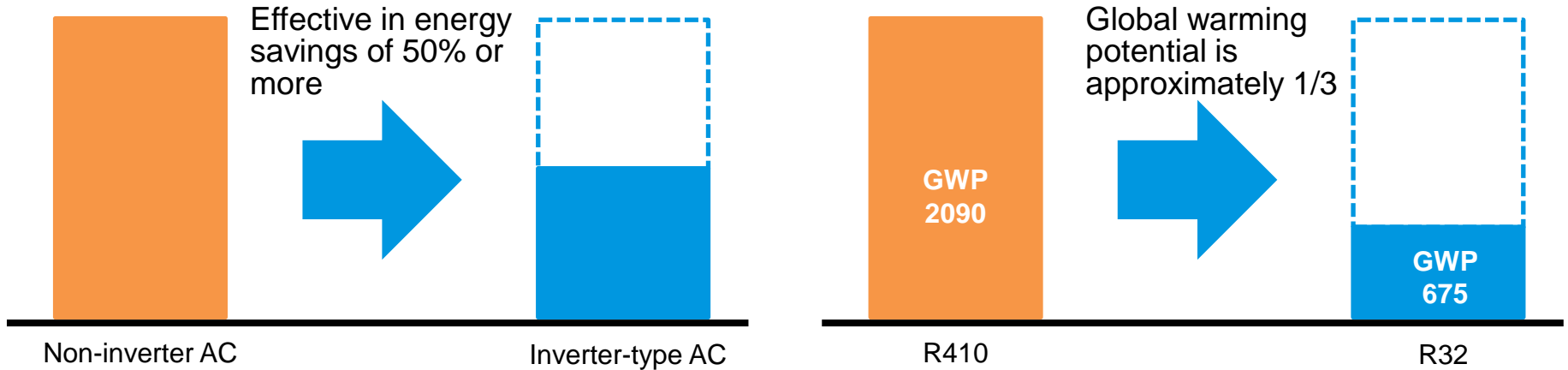


Fig. 2: Proactive Refrigerant Development



## Reference: Impact of Switching to Inverters/R32

- Air conditioners equipped with inverters can reduce the amount of electric power consumed by 50% or more compared to non-inverter air conditioners.
- Also, the refrigerant R32 has nearly one-third the GWP compared to the conventional refrigerant R410.
- Promoting the adoption of inverter-type air conditioners equipped with R32 contributes to achieving carbon neutrality in the Indian market.



# Developing Region-Specific Products

- Issues and product needs vary by region.
- **Product development was localized in 2016** to develop products that meet the needs of each customer in India.

## 1. Unstable Power Supply

Air conditioner that withstands unstable power supply and doesn't break down  
Air conditioner that can operate at low voltage without need of an AC stabilizer



## 3. Household Effluent/ Air Pollution

Air conditioner that resists corrosion even in a nitric acid environment



## 2. Product Damage from Underdeveloped Infrastructure and Transportation

Air conditioner that survives intact even when dropped from 1m

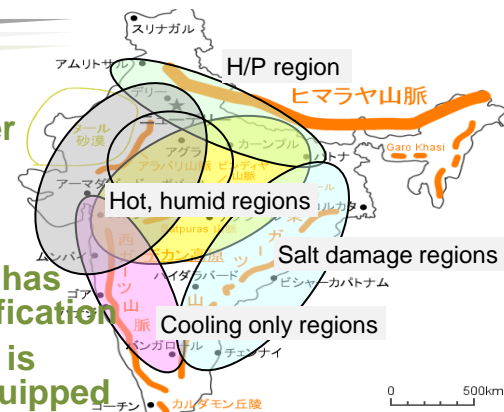


## 4. Harsh Climate

Air conditioner that operates even under high outdoor temperatures

Air conditioner that is cooling only and has powerful dehumidification

Air conditioner that is inexpensive and equipped with H/P





## 2-b HR Development Initiatives

1. Skill Improvement at Industry-Academia Collaborative Training Institutions (COE)
2. HR Development through the Japan-India Institute for Manufacturing (DJIME)

# Backstory of Daikin India's HR Development: Social Issues

## [Major HR Challenges in India]

- Job creation to give opportunities to a growing population
- Skilled worker shortage
- Promotion of gender diversity
- Income inequality

## 《Current Conditions》

In India, there is a population of 1.428 billion with a labor force participation ratio of 36%

### Scale and ratio of skilled engineers

Japan – 80% | U.S. – 68%  
China – 24% | India – 4.7%

**Estimates for the air conditioning industry alone suggest that approximately 200,000 skilled engineers will be needed over the next five years.**

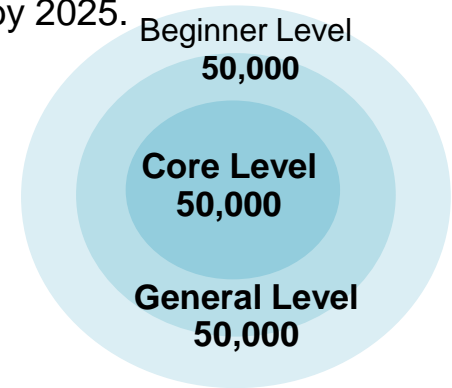
Source : World Bank 2022, other sources

## [Daikin Initiatives]

- Aiming to be an industry leader in HR development, we will continue to collaborate with academic institutions and the governments of both Japan and India.
- Through various HR development initiatives such as the Centre of Excellence (COE) and the Daikin Japan Institute of Manufacturing Excellence (DJIME), we are leveraging the collaboration of industry, government, and academia to train 150,000 engineers by 2025.

Towards 2025

**150,000 people**



	Technical training/ Trainer training	Technical training for service engineers	AC technology course COE	Japanese-style Mfg. school DJIME
Target	Core Level		General Level	Beginner Level
	DAIPL employees		Technology-related students	Youth with technical aspirations
Content	Based on production technology and theory starting with general explanation	Support for techniques related to AC installation/ maintenance, etc.	Support for course instructors, free provision of air conditioners, etc.	Support for basic AC knowledge, techniques, etc.
Sponsor	DAIPL	DAIPL	DAIPL Local vocational schools	DAIPL Japanese/Indian governments

# Skill Improvement at Industry-Academia Collaborative Training Institutions

- In **collaboration with educational institutions** such as universities, we have been continuously training air conditioning engineers since 2016. From 2021 to 2025, the company aims to become a **base for training 150,000 personnel across India**.
- This is intended for not only engineers at partner dealers but is also applied for student training in regions where training center operate. We will work to supplement the skilled labor force by employing at dealers, etc., the young human talent who study there.
- In addition to expansion in India, we are expanding to Sri Lanka and East African countries.



## Industry-Academia Collaborative Training Institutes: Centre of Excellence (COE)

- In August 2016, we opened our first COE at a YMCA school in Faridabad, Haryana, and currently have 18 COEs in operation in India, along with one in Sri Lanka, and two in East Africa.
- In fiscal 2023, we have planned to provide training to approximately 3,000 participants in total.

## Training for Dealer Engineers

- Training centers are widely used as a place for practical training, especially in product installation, troubleshooting, commercial air conditioning services, etc.

## Refrigerant and AC Technology Training for Local Students

- A community college is opened within the YMCA, and lectures are given by Daikin instructors.
- The curriculum changes according to the specialty of the school with practical training held in the 2nd to 4th semesters.
- Students attending this course often express the desire to work at a Daikin dealer after graduation.

# HR Development through the Japan-India Institute for Manufacturing (DJIME)

- In cooperation with the Japanese and Indian governments, we have been training young Indian people in Japanese manufacturing since 2017 as we aim to raise the level of skilled human resources in India.
- The first initiative was **directed specifically toward women** and involved training female skilled engineers to promote gender diversity.
- Educational opportunities are provided to women and young people in rural areas to eliminate the income inequality between rich and poor.



## Daikin Japanese Institute of Manufacturing Excellence (DJIME)

- In 2017, the Japan-India Government Manufacturing Skills Transfer Promotion Program was developed in collaboration with the Ministry of Economy, Trade and Industry of Japan and the Ministry of Skill Development and Entrepreneurship of India. Daikin participated and opened DJIME as a Japanese-style manufacturing school.
- The one-year course includes lectures on air conditioning and Japanese manufacturing, as well as practical training in brazing, welding, and assembly. (Only the first fiscal year was a 2-year course.)
- Currently, two types of short-term, three-month courses are offered to further develop human resources.
- Thus far, more than 300 students have graduated to become employees of DA IPL, Daikin dealers, or other Daikin-related entities, and are currently engaged in Daikin business.
- Main training programs:
  - Discipline, Manners, and 5S
  - KAIZEN
  - Basic knowledge related to air conditioning technology (assembly, mathematics, drawings, etc.)
  - English



### Changes in the ratio of female workers at Daikin India (Neemrana Plant)

**FY2015**  
**10 people**  
**(less than 1%)**



**FY2023**  
**500 people**  
**(14%)**

Female employees  
increased about 50  
times more than in  
2015



# 3. Summary



# Summary of Initiatives for Sustainable Business Expansion

- Introduction of inverter-type air conditioners and development of the R32 refrigerant
- Advocacy activities for raising energy-saving regulations
  - ⇒ Aim to higher regulatory values through advocacy activities to improve the market inverter ratio
  - ⇒ Expand sales of high energy-saving products among inverter ACs

- Development of air conditioning engineers through intergovernmental and academic cooperation
- Provision of opportunities for people lacking the opportunity to acquire specialized knowledge
  - ⇒ Increase the number of schools and ensure that it leads to more opportunities
  - ⇒ Accelerate collaborations and ensure that they lead to business expansion



## Promotion of Inverters and R32 Refrigerant

## Establishment of COE and DJIME



## Localization of Product Development

## Establishment of Factories and Use of Local Companies and HR



- Localization of product development since 2016
- Development of inexpensive products compatible with India's unique environments
  - ⇒ Respond to local usage environment
  - ⇒ Strengthen costs control capabilities to ensure affordable pricing

- Establishment of a new factory in Southern India
- Investigation of local company collaborations
  - ⇒ Build sales and direct sales store networks
  - ⇒ Promote shared services that utilize India's abundant human resources



### Notes on forecast

This data is compiled for informational purposes and is not to be construed as a solicitation of any action. This data (includes management plan) was compiled by Daikin Industries., Ltd. (the Company) based on reliable information available at the time of compilation. It may include some risks and uncertainties. The Company is not responsible for its accuracy or completeness. The Company asks for your own discretion in using this data. The Company accepts no liability for any loss or damage of any kind arising out of judgment for investment made solely relying on the business forecast or target figures described in the data.