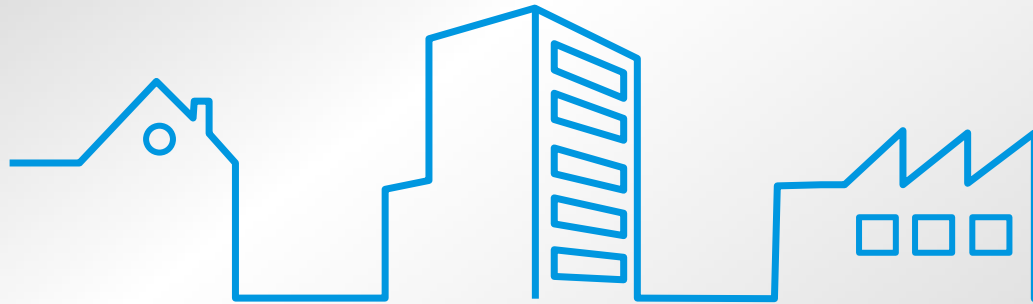


Energy Management with Air-conditioning and IoT technologies for Carbon Neutrality and Well-being in Smart Cities



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Daikin Business at a glance

Our Business: Providing Healthy, Comfortable Lifestyles through Air Conditioning and Fluorochemical Technologies

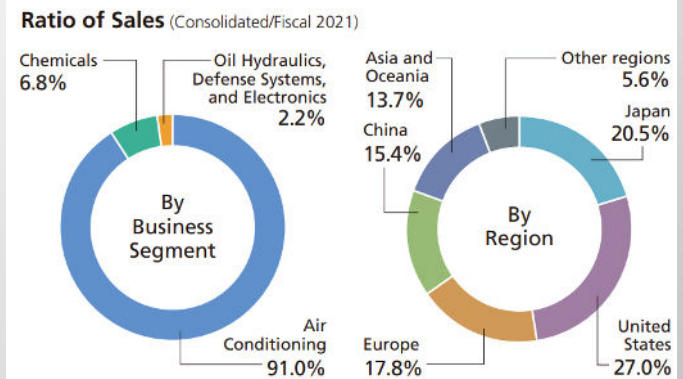
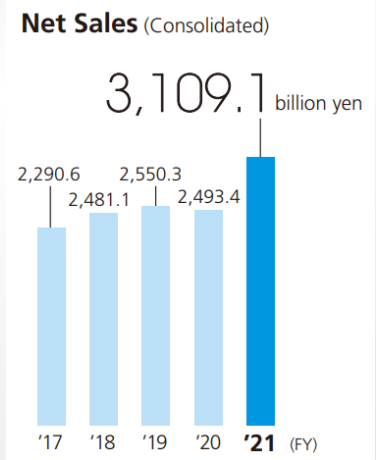
Air Conditioning
Achieving Both Comfort and Environmental Performance to Satisfy All Global Air Conditioning Needs



Chemicals
Utilizing the Characteristics of Fluorochemicals and Contributing to a Wide Range of Fields



Oil Hydraulics, Defense Systems, and Electronics
Proprietary Technologies at Work in a Range of Industries, IT Solutions



Daikin Business at a glance

Business Sphere: Daikin Is Active in Over 170 Countries

Europe

11,147
Employees

77
Subsidiaries



Japan

13,369
Employees

31
Daikin Industries and subsidiaries



United States

20,275
Employees

67
Subsidiaries



China

19,567
Employees

32
Subsidiaries



Asia and Oceania

18,542
Employees

55
Subsidiaries



Other regions
(Latin America, Middle East, Africa, etc.)

5,798
Employees

61
Subsidiaries

88,698
Employees

322
Subsidiaries

Daikin Europe N.V. at a glance

12,439
Employees

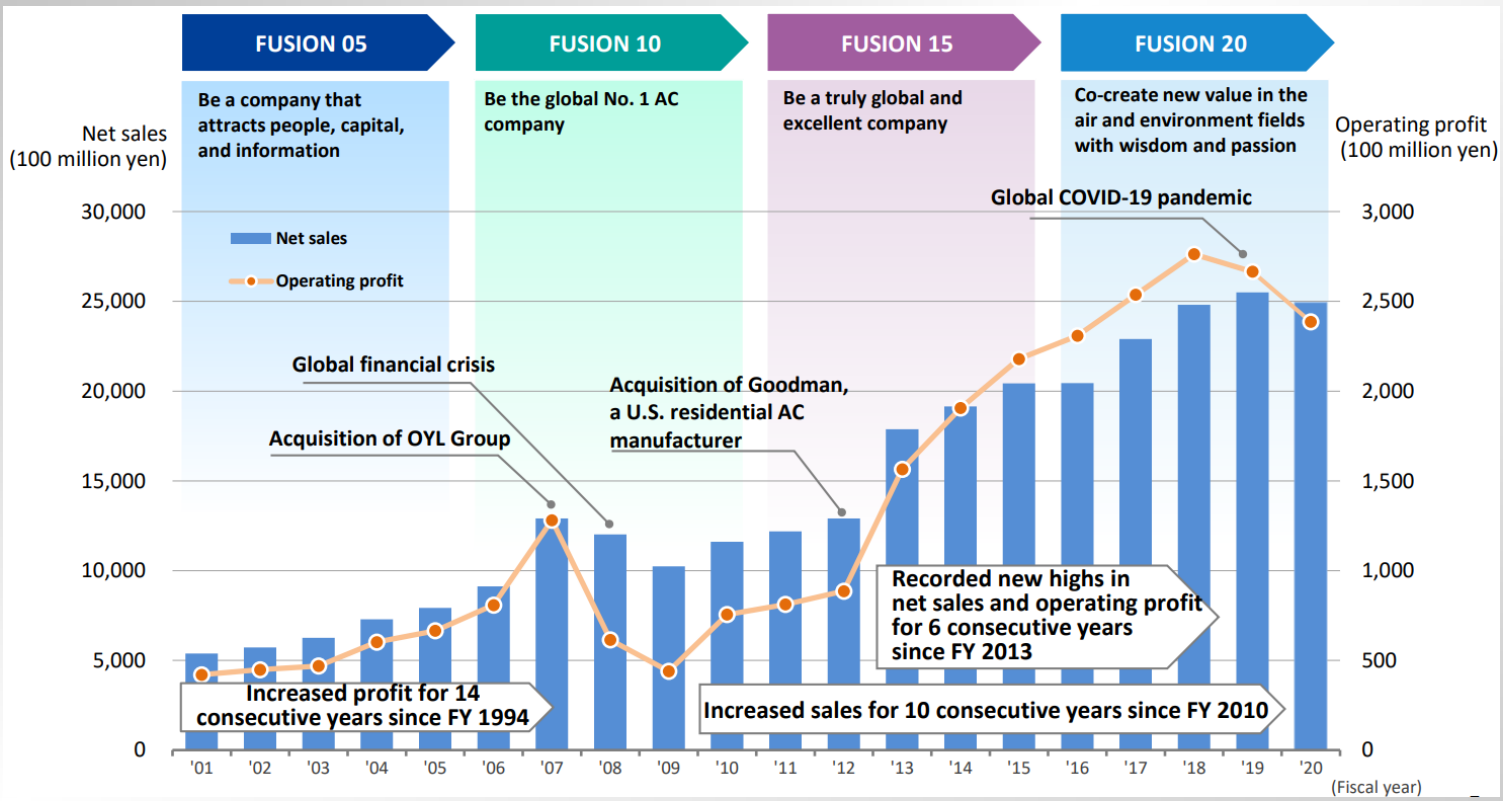
4,342 million
€ Cons. turnover
FY2021

518,4 million
€ Cons. operating profit
FY2021



Strategic Management Plan “FUSION”

Change in Performance



FUSION 25

9 Key Strategy Themes in "FUSION 25"



1.
Challenge to achieve
carbon neutrality



2.
Promotion of Solutions
business connected
with customers



3.
Creating value
with air



4.
Air Conditioning
business in North America



6.
Establishing a robust
supply chain



5.
Strengthening technology
Development capabilities



7.
Promoting digital
transformation for innovation



8.
Creating market value
/enhancing advocacy activities



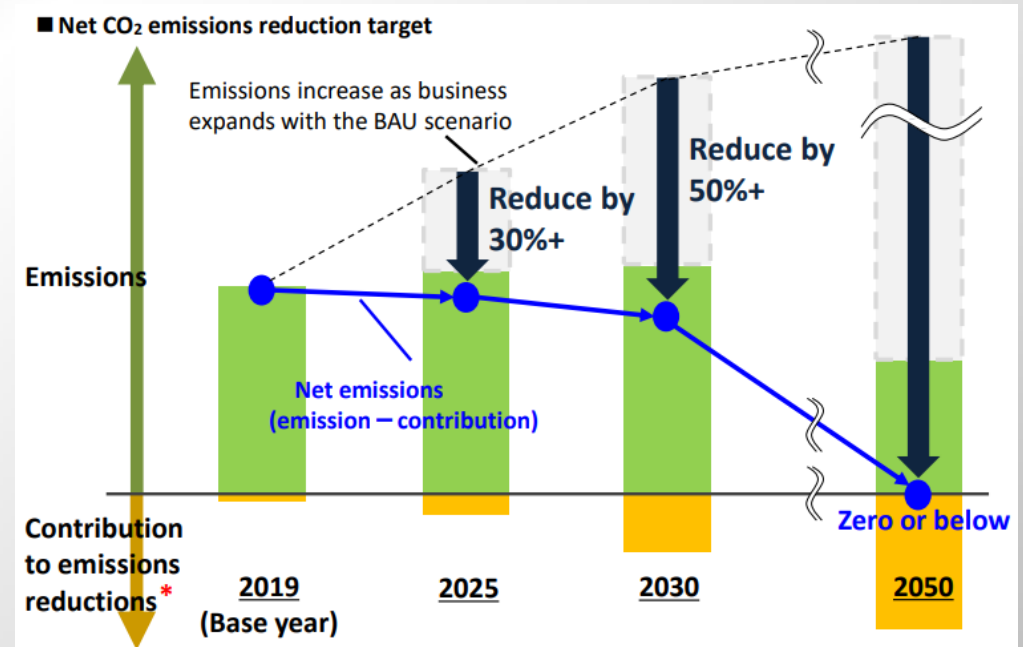
9.
Improving HR capabilities through
advanced diversity management

Challenge to Achieve Carbon Neutrality

Reducing greenhouse gas emissions throughout the product lifecycle to achieve carbon neutrality in 2050

Targets: With the base year set at 2019, reduce net CO₂ emissions by **30% or more in 2025** and **50% or more in 2030**, compared with emissions without measures (business as usual (BAU))

Fulfilling our social responsibility while leading the industry by expanding sales of **heat pump space and water heaters and inverter units**, proposing **energy-saving solutions**, and implementing other environmental initiatives



Challenge to Achieve Carbon Neutrality

1) CO2 reductions during manufacturing (development/production processes)

Reduce emissions of energy-induced CO2 and HFCs/PFCs in development and production processes

2) Power consumption reductions during product use

Global acceleration of conversion to inverter units to lead other companies with environmental products (energy-saving equipment)

3) Heat Pump Space and Water Heating business

Positioning Europe and North America as the priority regions to accelerate conversion of combustion heaters to heat pump space and water heaters

4) Refrigerant initiatives supporting the AC business

Various measures connecting to refrigerant-induced CO2 emissions reductions to lead the environmentally conscious society and industry

5) Challenge to create new environment-related business

Initiatives toward market expansion and CO2 reduction contributions

➤ Smart cities: Participate in projects around the world

6) Technology development to realize a carbon neutral society

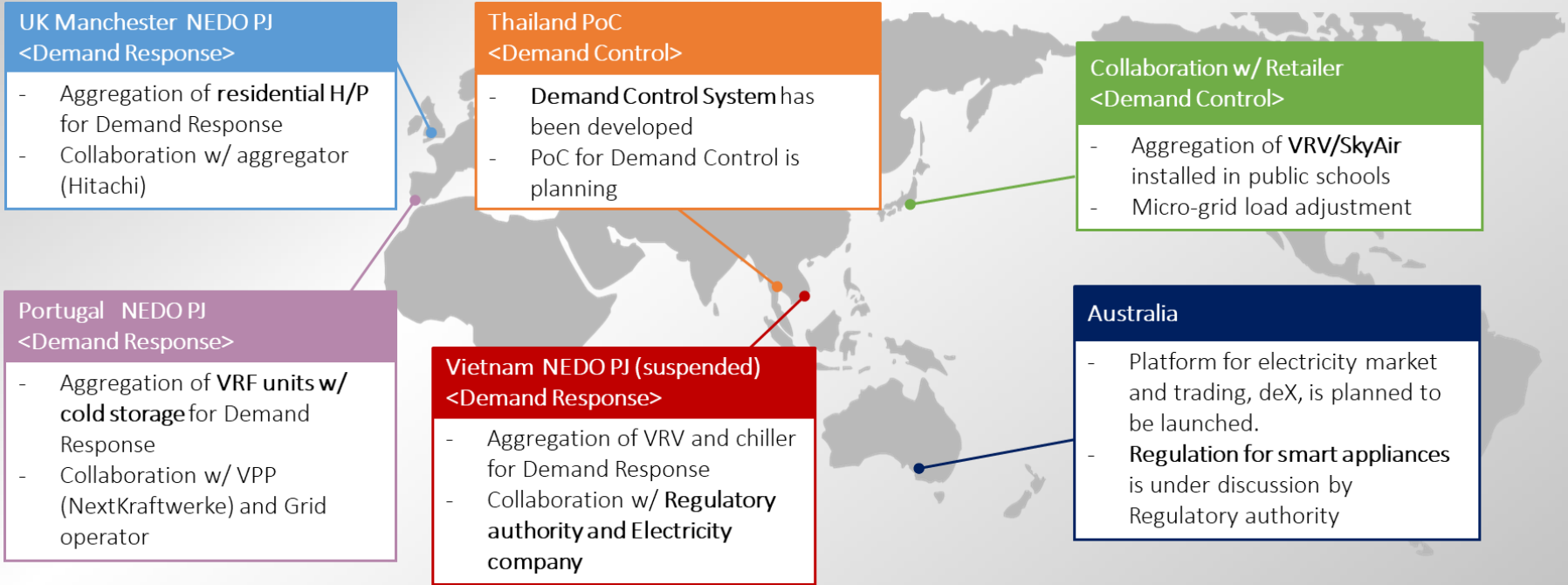
Research on leading-edge technologies on CO2 decomposition, recovery, and reuse
Specific measures to obtain those technologies

Smart city project in Singapore



Energy Management on Smart Grid/ Smart cities

- Within the **Energy Service Solutions Business** scope, one possible service is the aggregation of Air Conditioning units to provide Demand Response / Demand Control
- Daikin has established partnerships w/ the energy sector and implemented several projects

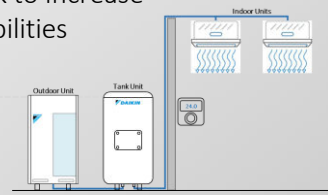


Demonstration Projects

Pursuing Energy Service Solutions, Daikin has sought partnerships with distinct stakeholders, particularly on the energy sector;

- Several demonstration projects in Europe and Japan, mostly focused on the aggregation of Air Conditioning units to provide flexibilities
- Customer-side solutions designed to help electric grid cope with large-scale dissemination of Distributed Energy Resources and its inherent intermittency.
- Creation of value towards sustainable communities based on smart grid technologies

	I. Flexible Local Grid (2016-2018)	II. NEDO Manchester (2016-2018)	III. NEDO Portugal (2016-2020)
Objective	<ul style="list-style-type: none"> • Installation of AC units in public schools. • Installation of PV panels and batteries storage to cope with sharp increase of load • Demand adjustment within a local grid 	<ul style="list-style-type: none"> • Replacement of gas boilers by HPs, in an effort to reduce carbon emissions • Assess effectiveness of demand control based on aggregation of heating equipment 	<ul style="list-style-type: none"> • Provide demand flexibility based on AC electricity load to VPP operators • Evaluation of cooling tank to increase power adjustment capabilities
Technology	<ul style="list-style-type: none"> • AC units @40 elementary and junior high schools • Peak shaving (demand control) of AC units and electricity flexibility 	<ul style="list-style-type: none"> • Aggregation of 550 H/P DHW • On-Off control in response to grid-side requirements 	<ul style="list-style-type: none"> • VRV + Cold storage • 4 mid-size offices • Load following in response to electricity market forecasts
Partnership	<p>Electricity Retailer: Implementation of electricity pricing schemes</p> <p>Municipality: Provision of demonstration sites and co-implementation of project</p>	<p>Hitachi: Evaluate H/P power adjustment capabilities based on requirements as a power aggregator.</p> <p>GMCA (Manchester City): Provided public housing for heat pump replacement</p>	<p>Retailer / VPP: Demand response requests and access to electricity markets</p> <p>Municipality: Provided demonstration buildings and co-implementation of project; evaluation of national energy policy</p>





VIDEO



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