New Value Creation

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Policy

Sharing Dreams and Ambitions Inside and Outside Daikin to Realize a Healthy, Comfortable Lifestyle through Air

Targets of CSR Action Plan 2020

Air-conditioners bring innovation to work and everyday life in hot regions, contributing to higher quality of life and economic growth. Daikin fuses core technologies accumulated through air conditioning using IoT and AI with advanced technological open innovation to provide new value that makes humans and indoor spaces healthy and comfortable by pursuing the unlimited possibilities of air.

Fiscal 2018 Achievements

Measures the amount invested in value creation and the number of new technologies created.

R&D Expenditure

¥ 65.2 billion

Number of patent applications (FY 2017) (Daikin Industries, Ltd. only)
Patent applications in Japan:

904

Patent applications overseas:

434
Daikin’s Goal for Value Creation
(Making people and indoor spaces healthy and comfortable to provide new value and contribute to the Sustainable Development Goals (SDGs))

Management Structure
(Daikin R&D Centers such as the Technology Innovation Center are located throughout the world.)

Start-Up Arises from Collaborative Innovation
(Introducing initiatives from collaborative innovation to commercialization)

Value creation through collaborative innovation
(We cooperate with industry groups and other companies, and work in industry-academia tie-ups with the aim of creating new value.)

Related information
Key Activities of Fiscal 2018: New Value Creation—Creating Air Environments for Increasing Intellectual Productivity with Air Conditioning Solutions Using IoT and AI (Page 462)
Stakeholder Engagement (Page 369)
TECHNOLOGY AND INNOVATION CENTER (https://www.daikin.com/about/corporate/tic/)
New Value Creation

DAIKIN'S GOAL FOR VALUE CREATION

Our modern world is undergoing constant change that is bringing about problems like poverty, inequality, and climate change. To mount a global effort toward solving these problems, in September 2015 the United Nations adopted "Transforming our world: the 2030 Agenda for Sustainable Development" and established the Sustainable Development Goals (SDGs).

The Daikin Group aims to contribute to the realization of the SDGs by identifying three themes: environment, cities, and people. Our aim is to use our world-class technologies to reduce environmental impact while at the same time providing new value in the form of a healthy, comfortable way of living.

Value Creation for the Earth

Helping mitigate climate change by reducing environmental impact through business activities

With global warming causing increasingly frequent occurrences of abnormal weather, the effects are being felt not just as changes in the natural environment but also as the spread of infectious diseases and other threats to human health. The rise in atmospheric temperature, economic advancement, and population growth around the world are fueling a constantly increasing demand for air conditioners. This is leading to fears that large amounts of electricity consumption and refrigerant leakage will accelerate global warming.

As a global air conditioner manufacturer, the Daikin Group is working to decrease greenhouse gas emissions through the dissemination of inverter air conditioners and low-global-warming-potential refrigerants. In addition, we are utilizing our fluorochemical technologies and developing and providing new materials that contribute to the use and spread of renewable energy.

Initiatives

- Developing and Promoting Products and Services That Reduce Environmental Impact (Page 119)
- Low Environmental Impact Refrigerants (Page 129)
Value Creation for Cities

Contributing to the creation of sustainable cities by solving energy-related issues arising from urbanization

Economic and population growth in emerging countries are causing rapid urbanization. The number of mega-cities with populations exceeding 1 million is on the rise, and these cities will require increasing amounts of energy. And with rising atmospheric temperatures, they will also require air conditioners to provide residents with comfortable living environments.

Meanwhile, in the industrialized countries, where populations continue to drop, workers increasingly require comfortable spaces where they can do their jobs easily and productively.

The Daikin Group provides air conditioners that create environments to meet the needs of people in both emerging and industrialized countries. Furthermore, we are working on realizing zero-energy buildings, which use renewable energy sources in order to effectively achieve zero net energy consumption, and utilizing ICT technologies, which promote energy efficiency through comfortable air conditioner operation throughout an entire town. The goal is to realize livable cities that achieve comfort and energy efficiency through city-wide air conditioner control.

Initiatives

➤ Providing Solutions (Page 150)
Value Creation for People

Contributing to healthy and comfortable lifestyles by expanding the possibilities of air

With economic development come rapid industrialization, exploding population growth in cities, and ballooning traffic volume — all of which contribute to more hazardous chemicals in the atmosphere. This gives rise to numerous problems that we must tackle in our living air environment, such as negative effects on our health.

The Daikin Group believes that an effective way to reduce air pollution is to place filters on factories and other facilities that give off emissions containing hazardous chemicals. We also strive to bring the world health and peace of mind indoors as well by giving added value to air, so that it helps people work more productively in offices and get quality sleep at home.

Initiatives

- Value Creation through Collaborative Innovation (Page 230)
<table>
<thead>
<tr>
<th>Sustainable Development Goals: SDGs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. No poverty</strong></td>
</tr>
<tr>
<td>End poverty in all its forms everywhere</td>
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<tr>
<td><strong>2. Zero hunger</strong></td>
</tr>
<tr>
<td>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</td>
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<tr>
<td><strong>3. Good health and well-being</strong></td>
</tr>
<tr>
<td>Ensure healthy lives and promote well-being for all at all age</td>
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<tr>
<td><strong>4. Quality education</strong></td>
</tr>
<tr>
<td>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</td>
</tr>
<tr>
<td><strong>5. Gender equality</strong></td>
</tr>
<tr>
<td>Achieve gender equality and empower all women and girls</td>
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<tr>
<td><strong>6. Clean water and sanitation</strong></td>
</tr>
<tr>
<td>Ensure availability and sustainable management of water and sanitation for all</td>
</tr>
<tr>
<td><strong>7. Affordable and clean energy</strong></td>
</tr>
<tr>
<td>Ensure access to affordable, reliable, sustainable and modern energy for all</td>
</tr>
<tr>
<td><strong>8. Decent work and economic growth</strong></td>
</tr>
<tr>
<td>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td>
</tr>
<tr>
<td><strong>9. Industry, innovation and infrastructure</strong></td>
</tr>
<tr>
<td>Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</td>
</tr>
<tr>
<td><strong>10. Reduced inequalities</strong></td>
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<tr>
<td>Reduce inequality within and among countries</td>
</tr>
<tr>
<td><strong>11. Sustainable cities and communities</strong></td>
</tr>
<tr>
<td>Make cities and human settlements inclusive, safe, resilient and sustainable</td>
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<tr>
<td><strong>12. Responsible consumption and production</strong></td>
</tr>
<tr>
<td>Ensure sustainable consumption and production patterns</td>
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<tr>
<td><strong>13. Climate action</strong></td>
</tr>
<tr>
<td>Take urgent action to combat climate change and its impacts</td>
</tr>
<tr>
<td><strong>14. Life below water</strong></td>
</tr>
<tr>
<td>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</td>
</tr>
<tr>
<td><strong>15. Life on land</strong></td>
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<tr>
<td>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</td>
</tr>
<tr>
<td><strong>16. Peace, justice and strong institutions</strong></td>
</tr>
<tr>
<td>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</td>
</tr>
<tr>
<td><strong>17. Partnerships for the goals</strong></td>
</tr>
<tr>
<td>Strengthen the means of implementation and revitalize the global partnership for sustainable development</td>
</tr>
</tbody>
</table>
New Value Creation

MANAGEMENT STRUCTURE

In order to meet diverse customer needs and create new value that contributes to society, it is important that Daikin first build up its technological superiority by leading further advanced technologies: inverters, heat pumps, and fluorochemicals. It is also important to combine state-of-the-art technologies from around the world—such as information-communication, sensors, materials, processing, medicine, and healthcare—with Daikin technologies to come out with products and services that provide new value to customers.

Today's world of unprecedented and rapid technological change requires the creation of new value, which is only possible through collaborative innovation that fuses a wide range of knowledge and technologies and takes us beyond current boundaries. To this end, Daikin established the Technology and Innovation Center in November 2015 with the aim of promoting collaboration with external partners in order to contribute to society through the creation of new value. We also have R&D centers at 25 sites around the world at which we develop products in order to promptly and accurately respond to the needs of regional customers.

| Daikin's Worldwide R&D Centers |

- **Mother R&D Centers**: Over 90 locations
- **R&D Centers**: 25 locations
- **Mother R&D Centers**: 5 of the 25 locations (as of March 31, 2019)
Collaborative innovation with internal and external partners to create new value

In November 2015, Daikin established the Technology and Innovation Center (TIC). As a core base of technological development, the TIC brings together approximately 700 technicians in a range of fields. Amassing the strength of Daikin Group technicians, and strengthening cooperation and ties among companies, universities, and research institutes possessing unique technologies in differing industries and fields, the TIC is aimed at combining the strengths of people, information, and technologies from inside and outside Daikin in order to come up with innovation through collaboration.

To maximize this collaboration between Daikin and its partners, the TIC has gathering rooms, which can be used for anything from technician meetings to exchange unbridled opinions, to gatherings of opinion leaders from universities and industries around the world to use as they wish in spreading their ideas. These rooms have been used extensively: Eiichi Negishi, winner of the Nobel Prize in Chemistry and Distinguished Professor at Purdue University, has used them to provide technological guidance; and they act as satellite offices of industry-academia collaboration projects between Daikin and Kyoto University, Osaka University, and other universities.

Related information

TIC (https://www.daikin.com/about/corporate/tic/)
Boosting Development Functions around the World

Responding to the needs that arise from differing cultures and values in countries and regions of the world

Daikin has over 90 production bases around the world and does business in over 150 countries, and more than 75% of its sales come from outside Japan. To create the new value demanded by customers and their societies, we must develop products that match the cultures and values of each worldwide region. Daikin has R&D centers around the world, including in China, Europe, and North America, where efforts are made to create new value that matches various regional needs.

In today’s era of lightning-fast change, conventional core technologies no longer meet the world’s diverse needs. That’s why in May 2017 we have established the Daikin Open Innovation Lab Silicon Valley (DSV) as a sub-office of the TIC, a place where we come up with distinctly new products through the fusion of state-of-the-art technologies in artificial intelligence (AI) and the Internet of Things (IoT). At the DSV in North America, a society of rapid technological change, we are striving to both absorb current state-of-the-art technologies and strengthen IoT and AI technologies.

On December 5, 2017, we opened the Daikin Information and Communications Technology College in the TIC with the goal of fostering human resources who develop technologies and new businesses utilizing AI. The aim is to create new innovation through basic research in areas such as AI and IoT, the creation of systems for things like smart factories, the passing on of expert production-line techniques to the next generation, and the fostering of human resources who can advance the utilization of AI.
Spurring the Creation of Intellectual Property

Two Systems Stimulate Creation of Intellectual Property

Daikin Industries, Ltd. has two systems for stimulating employees' motivation to invent and for spurring the creation of intellectual property.

The first is the Compensation System for Employee Inventions, a system in which Daikin pays employees for inventions created on the job that result in patent applications as well as successful uses of the patent. In fiscal 2018, in addition to paying compensation for patent applications, Daikin compensated employees for 520 successful uses of patents.

The second is the Incentive System for Valuable Patents, which gives employees incentive bonuses for valuable patents. In fiscal 2018, we awarded incentive bonuses to the creators of 91 patents.

While these systems are aimed at stepping up Daikin’s intellectual creativity, they also represent an effort to promptly tackle pressing issues, such as increasing the quality and quantity of patents in competitive fields, and increasing the number of patents in our key technological fields, in particular in emerging countries. In fiscal 2017, we applied for 904 patents in Japan and 434 patents overseas.

In fiscal 2018, in the air conditioning divisions, the number of patent applications increased; this covered everything from development of new products that we intend to release, to near-future products that make use of AI and IoT technologies. In the chemicals divisions, we increased the number of patent applications by clarifying and implementing strategies in each product and technology area.

We will also continue to conduct thorough advance patent surveys so that we can deal with problem patents early on and thus ensure that we eliminate patents that could hinder our development. We will also step up patent efforts worldwide.

Awarding incentive bonuses to inventor group representatives
Number of Patent Applications (Daikin Industries, Ltd. only)

Year | Japanese Applications | Overseas Applications
-----|-----------------------|----------------------
2013 | 1,136                 | 344                  
2014 | 948                   | 344                  
2015 | 787                   | 329                  
2016 | 780                   | 352                  
2017 | 904                   | 434                  

(FY)
From Collaborative Innovation to Market

The new value that arises from collaborative innovation won't benefit people around the world unless it comes in the form of an available product. Products must be made into business models that benefit a company, its customers, and society; otherwise, it's just an empty proposition. In the field of energy, in 2017 Daikin established a new company that makes micro-hydroelectric power generation systems. This company, DK-Power, Ltd., is the first start-up to come out of the Technology and Innovation Center (TIC); the first case of an R&D theme at TIC leading all the way to market participation.
Local production and local consumption of energy: helping solve environmental problems

There has been increasing focus on micro-hydroelectric power, which taps energy from the water flow of rivers, water supply and sewage systems, and other waterways. Although they provide only a fraction of the power of conventional large-scale power plants, they can be set up in a large number of locations where there is a water canal or other flow of water—not just in the mountains but in many other places close to towns and cities. These "water wheels of the future" can be used almost anywhere. However, this method of power generation has not spread significantly, due to the high cost per amount of power generated and the large size of the equipment.

Daikin has utilized its technologies in air conditioning and hydraulic machinery to develop a compact, low-cost micro-hydroelectric power generation system, equipped with vertical inline pump reverse turbine, for water channels. Through technology for making electricity from waterflow using the motor inverter technologies that Daikin has built up, it is now possible to create natural energy instead of discharging CO₂ in the power generation process. The "small energy" created by micro-hydroelectric power generation systems is also green energy.

In 2013, Daikin's micro-hydroelectric power generation system was adopted under the Low Carbon Technology, Research, Development and Demonstration Program of Japan's Ministry of the Environment (MOE). It underwent demonstration testing over a three-year period in Nanto City, Toyama Prefecture, and Soma City, Fukushima Prefecture, which resulted in practical product application.

In June 2017, we established DK-Power, Ltd., a subsidiary whose business is generating power through micro-hydroelectric power generation systems. The company installs these systems on waterworks facilities owned by local governments, and manages, operates, and sells the electricity that is generated. We will collaborate with numerous partners—such as municipal waterworks contractors, regional construction companies, and energy transmission and distribution contractors—as we pursue the business of generating and providing renewable energy.

By using micro-hydroelectric power generation systems and the clean energy they provide, cities, towns, and neighborhoods in Japan and around the world get independently produced and sustainable electricity and thus contribute to a sustainable society.
Business Model Based on Use of DK-Power's Micro-hydroelectric Power Generation Systems

DK-Power's business model is based on the use of their micro-hydroelectric power generation systems. The model involves technology provision by DK-Power, which leads to the rental of water flow and location by the local government waterworks contractor. This contractor then operates the energy transmission and distribution contractor, which is contracted by the local residents. The construction outsourcing is done by the regional construction company. The result of this model is improved service, such as cheaper water rates, clean energy provision, and local job creation, economic stimulation.

Micro-hydroelectric Power Generation System

The micro-hydroelectric power generation system involves a purification plant that produces electricity. The electricity is generated by a generator and transmitted through a control panel. The energy transmission and distribution contractor distributes the electricity to local residents.

Related information

DK-Power, Ltd. (http://www.dk-power.co.jp/)
New Value Creation

VALUE CREATION THROUGH COLLABORATIVE INNOVATION

With problems such as climate change and air pollution increasing on a global scale, Daikin is aiming to reduce environmental burden while providing new value that brings health and comfort to people and spaces.
To this end, we are advancing the state of our core technologies of inverters, heat pumps, and fluorochemicals, and stepping up joint research with companies, organizations, and other external parties in order to come up with innovations that contribute to solving society’s problems.

Open Innovation through Collaboration with Other Companies

Establishing a Collaborative Platform Utilizing Data on Air and Space
Daikin has established a collaborative platform called CRESNECT under which it works with a number of partner companies to utilize data gathered from air conditioners in order to come up with new value and services encompassing air and space. Using data that can be gathered from air conditioners, Daikin and the partner companies study how to improve office productivity and maintain worker health and come up with new value and services.

As the first project under CRESNECT, in July 2019 Daikin and partner companies launched demonstration testing aimed at realizing the office of the future at point 0 marunouchi, a membership-based co-working space in the Marunouchi district of Tokyo. In this trial, members of point 0 marunouchi experience spatial content that is conducive to more efficient and healthy working and that is made possible by pooling state-of-the-art technologies, data, and know-how possessed by the CRESNECT partner companies. The aim is to test out how to build a healthy, comfortable office environment and contribute to the creation of new products and services.
Daikin, Sangetsu Corporation, Shionogi & Co., Ltd., and Teijin Frontier Co., Ltd. launched the Mite Allergy Countermeasures Society, a symposium with the goal of raising awareness of perennial allergic rhinitis and educating people about how to combat it.

In 2004, as part of creating an indoor air environment that is healthy and comfortable, we developed our own Streamer technology to decompose allergens such as mites, fungi, and pollen, and suppress bacteria and viruses. While looking into possible further uses of Streamer technology and leveraging the knowledge and knowhow of companies across different industries, the Mite Allergy Countermeasures Society is striving to provide society with a comfortable and healthy lifestyle through the joint creation of new value in air and space.
Daikin and Hitachi Begin Collaboration to Create Next-Generation Production Model Using IoT

Daikin and Hitachi, Ltd. embarked on a collaborative project to create the next-generation production model using IoT to support skills transfer from expert workers as of October 2017.

The two companies are proceeding with a joint demonstration of the viability of a new production model. Combining Daikin's brazing process, which is part of the manufacturing of air conditioners, and Hitachi's advanced image analysis technology, the solution core of the company's Lumada IoT platform, the demonstration project will digitalize the skills of expert workers and trainees so that these can be compared and analyzed in verifying a production model system.

In fiscal 2018, a support system for training in brazing techniques was incorporated and began operation at three bases: the Sakai Plant, Shiga Plant, and Daikin Ales Aoya Global Training Center. Toward incorporation of this system at all worldwide bases, in addition to using it for actual skills training, we are improving the system for better ease of use by, for example, standardizing teaching processes using the system, improving display methods, and making it multi-lingual. We intend to have it in use at overseas bases starting in fiscal 2019.

As a new effort utilizing image analysis, we have begun R&D into technology for automatically measuring actual working time and work details of production line workers using images taken with cameras installed on the lines.

Expert worker and trainee (photo courtesy of Hitachi, Ltd.)
Teaming Up with NEC Corporation in Utilizing AI and IoT to Create Air and Space that Boosts Intellectual Productivity

In October 2016, Daikin Industries, Ltd. and NEC Corporation began joint research utilizing AI and IoT aimed at realizing air and space that raises people's intellectual productivity. By fusing Daikin Industries, Ltd.’s technologies related to air conditioning and its knowledge in biometrics with NEC’s AI and IoT technologies in facial recognition and crowd behavior analysis, the parties aim to be able to create comfortable, focused spaces that are not just determined by factors such as climate and room environment, but that are geared to respond to the physical and mental feelings of the people in that space.

Daikin Industries, Ltd. and NEC Corporation have so far conducted research in areas such as precise control of air conditioning and lighting and measurement of comfort level. However, more analysis needs to be done since there is still much to be learned regarding the cause-effect relationship between people and the air and space around them. As the base of research for this joint effort, the Technology and Innovation Center (TIC) is carrying out demonstration testing in office environments.

In fiscal 2018, we demonstrated that temperature stimulation from air conditioning is particularly effective at raising intellectual productivity in an office. Testing also showed that applying this stimulation as soon as a person shows signs of drowsiness is effective in maintaining the arousal level. To further perfect the ideal conditions, we are conducting field testing.

Linking Sensing (NEC) and Control (Daikin/NEC)
Open Innovation through Industry-Academia Collaboration

Concludes "University Corporate Relations Agreement" with the University of Tokyo
Jointly Creating New Businesses that Solve Society's Problems

With the aim of creating new business that contributes to solving social issues around the world, Daikin is focusing on tie-ups with universities in Japan and other countries. In fiscal 2018, we signed a "University Corporate Relations Agreement" with the University of Tokyo for a 10-year partnership with investment of approximately 10 billion yen.

This agreement comprises three shared creation projects: tie-ups with business ventures with the aim of early market application; shared creation future vision leading to SDGs and Society 5.0*; and creation of futuristic technologies centered on advancing core technologies and creating new value. For example, for shared creation future vision, we will predict needs that will arise for making air more valuable in the future, and come up with the technologies and businesses needed to create this value, in the process allowing both the University of Tokyo and Daikin to clarify the tasks they need to take on.

The main feature of this agreement is the full-fledged exchange of human resources between the two parties. The University of Tokyo instructors and students, entrepreneurs, and Daikin employees can go freely between the organizations of the agreement parties with the aim of sharing knowledge, conducting joint research, and building career paths. Another aim is speed up the realization of successes from this shared creation by focusing on training human resources through internships at Daikin worldwide sales, production, and R&D bases.

* IoT: Internet of Things. People and objects connect to share knowledge and information via AI. Japan aims to realize a future in which IoT and AI advance the economy and solve societies problems.
**DK Innovation Program with Kyoto University**

June 2013, Daikin Industries, Ltd. and Kyoto University concluded a comprehensive collaboration agreement with the goal of creating and researching new themes focusing on social values toward future-oriented solutions in the fields of air quality, environment, and energy.

Under this program, researchers from the arts and sciences have come up unique science-arts collaborations such as the 100 Person World Café, under which 800 key words are the basis for exit strategies in the design process. In coming up with exit strategy images, this collaboration creates a road map that clarifies social issues, the market, the seeds of Kyoto University’s research that can be used, and Daikin’s core technologies.

In addition, while continuing to build visions based on air and space, the collaboration studies the kinds of efforts that can be carried out within new frameworks that will allow expansion into different fields and technologies such as energy and materials.

**Future Joint Research Laboratories Established with Nara Institute of Science and Technology**

In October 2012, Daikin Industries, Ltd. and the Nara Institute of Science and Technology (NAIST) established the Future Joint Research Laboratories. In conventional agreements between industry and academia, the corporation generally names the project content and the university carries out the necessary project research. But this collaboration between Daikin and NAIST begins with a quest for pressing social issues, followed by discussions on how to solve them and then the start of research toward this goal.

**Collaboration with Kansai University**

In November 2012, Daikin signed an agreement with Kansai University to collaborate fully on ways to contribute to communities in education, research, and human resource development. Through this collaboration, we are offering free lectures on fluorine and helping accelerate joint research.

In September 2016, we established a base in the Organization for Research and Development of Innovative Science and Technology of Kansai University in order to accelerate joint research with the university’s science and technology departments in areas such as battery materials.

We will continue to seek ways to create new value, not just in the sciences but in the arts as well.
Comprehensive Collaboration with Osaka University

In 2006, Daikin Industries, Ltd. launched the Daikin (Fluorine Chemistry) Joint Research Chair at Osaka University, under which our fluorochemical technologies and the university's advanced research capabilities are combined in order to come up with innovative fundamental technologies.

In 2016, a 10-year collaboration called the Daikin Collaboration Research Institute, which covers air conditioning related technologies, was launched and is conducting R&D in new materials, new processes, and processing technologies.

This collaboration comes up with themes on revolutionary technologies and major themes with far-reaching implications, making use of Osaka University's state-of-the-art analysis equipment and technologies, such as the world-renowned Joining and Welding Research Institute, to tackle problems from a medium-to-long-term perspective and with a view to application across numerous fields.

With regards to information-based tie-ups, the Daikin Information Science Research Unit (Di-CHiLD) was established. Work at Di-CHiLD includes developing technologies for controlling sleep and study environments with the goal of expanding solutions for air and space; and developing engineering workload reduction technologies, such as air conditioner automatic selection technology and position sensing technology, which are aimed at expanding business from air conditioner sales to the design of air conditioning and spaces. Technologies have already been successfully developed through joint research themes and many are in the patent application process.

In fiscal 2019, Di-CHiLD is searching for and executing major research themes that will lead to new business.

This facility will continue acquiring and advancing core technologies in chemistry and air conditioning by expanding its organization to include areas such as machinery, construction, information, and medicine.

Tie-up with Tsinghua University

In 2003, the Tsinghua University-Daikin R&D Center was established at Tsinghua University in Beijing, one of China's top universities. Since then, Daikin and the university have worked together to jointly develop air conditioner technologies.

In fiscal 2016, the parties began collaborating in the chemical field as well. The center will expand into environmental fields such as air and water quality and energy, as it carries out research with top-level scientists aimed at solving environmental problems.

In fiscal 2018, through participation in the University Industry Collaboration Committee (UICC), we built a strong network with Tsinghua University professors. We will utilize this network and our collaboration with the university as we carry out efforts to advance our R&D bases in China, including our base in Shenzhen.
Daikin Industries Ltd. and RIKEN Start Wellness Life Collaboration Program

In October 2016, Daikin Industries Ltd. teamed up with RIKEN, Japan’s only comprehensive research institution dedicated to the natural sciences, to launch the RIKEN-DAIKIN Wellness Life Collaboration Program. Under the theme of comfortable, healthy spaces, the program aims to provide society with new value.

In June 2017, the partners established the Riken BDR-Daikin Collaboration Center for joint research into creating spaces that prevent fatigue. In November 2017, test facilities were established at Riken’s Integrated Innovation Building (IIB) in Kobe for clinical research investigating matters such as how differing levels of temperature and humidity affect levels of fatigue. Data on the differing levels of fatigue that men and women experience in air environments was presented in May 2018 at a meeting of the Japanese Society of Fatigue Science.

In fiscal 2018, data gathered during the summer was used to create a relational model on heat stress and its effect on people.

We plan to come up with solutions to fatigue. We are also making use of Riken’s knowledge in areas other than air environments to come up with challenges in creating new value for our customers.

### Related information

- Key Activities of Fiscal 2018: New Value Creation (Page 462)

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Cooperation with Influential Figures and Industry Groups

**Participation in the World Green Building Council Worldwide**

Daikin Industries, Ltd. strives to contribute to lower power consumption through energy-efficient air conditioners and buildings.

In order to achieve even more environmentally conscious buildings through the provision of products and services, we have joined green building organizations around the world and our bases and sales regions are helping form regulations that will make it easier to provide products and services that help realize green buildings and ZEBs.

* ZEB: A zero-energy building is one that effectively consumes zero energy thanks to the energy efficiency of the building and equipment, as well as the use of renewable energy sources on-site to power the building.