DAIKIN

CORPORATE NEWS

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Daikin and Nikken Sekkei Selected as a Grand Finalist of The Global Cooling Prize

Daikin Airconditioning India Pvt. Ltd., and Daikin Industries, Ltd. applied together with Nikken Sekkei Ltd.[i] to The Global Cooling Prize[ii] (GCP) which was held in India. Today, we are pleased to be selected as the GCP Grand Finalist.

The GCP is an international competition endorsed by the Indian government, Mission Innovation[iii] and the Rocky Mountain Institute[iv] to explore technologies that can significantly reduce the climate impact of room air conditioners compared to equipment currently on the market[v]. Applications began in 2018 and were narrowed down to 8 finalists on November 15, 2019. After testing the prototype for performance for two months, the prototype developed and proposed by Daikin under the advisory of Nikken Sekkei was selected as the winner of the Grand Prize.

This new concept employs a technology which can achieve comfort and energy savings at the same time by adequately controlling two indoor units in one room. Another new concept is that it utilizes the vaporization heat of water to further increase the energy efficiency of the equipment. Daikin adopted an *out of the box* approach such as choosing the refrigerant HFO-1234ze(E) which has a single digit Global Warming Potential (GWP). Thus, our innovative proposal based on unconventional ideas and solid technology was highly evaluated and won the Grand Prize. According to the Prize Secretariat, the results will be presented at the 26th United Nations Climate Change conference, known as COP26 in Glasgow, UK, in November of this year.

Daikin set its "Environmental Vision 2050" to aim to reduce greenhouse gas emissions to net zero by 2050 and is in a continuous search to reduce energy consumption and environmental impact of refrigerants used in HVACR equipment. In this Vision, Daikin's overall refrigerant policy is to support a *diversity of refrigerants*.

Daikin believes that HFC-32 (R32) is the most balanced refrigerant for many applications in terms of safety, energy efficiency, economy and the environment. Daikin and other manufacturers around the world have successfully commercialized R32 in a variety of applications and the spread of R32 is accelerating. Daikin has spent years conducting research that will enable the selection of refrigerant that is ideal for each application, balancing many criteria such as environmental impact, safety, energy efficiency and cost-effectiveness. Our challenge in the GCP is a part of that effort to examine the possibility of using low-GWP refrigerants to reduce environmental impact.

The proposed prototype was evaluated in terms of the technology innovations, although there are issues that will have to be resolved for its practical application. We will continue to pursue further advancements of air conditioners to address problems related to air and the environment.

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[i] Nikken Sekkei is one of the topmost design (architecture and engineering) companies based in Tokyo, Japan

[ii] http://globalcoolingprize.org/

[iii] Mission Innovation is a global initiative on environment of 24 countries and the European Commission.

[iv] Rocky Mountain Institute is a US non-profit organization related to environment.

[v] The baseline is a fixed-speed mini-split room air conditioner of 5.3 kW (1.5 TR), with an EER of 3.5 W/W at 35°C and an annual energy consumption of 2,969kWh/year, using R22 refrigerant with a GWP of 1760 (based on IPCC AR5 report).

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