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Use of natural refrigerants in industrial refrigeration and heat pump applications

Many of the natural disastrous phenomena in recent years are attributed to climate change. Global warming due to greenhouse gas emissions is supposed to be one of the factors which bring about climate change. In the refrigeration industry, therefore, in addition to reducing greenhouse gas emissions, environmental friendliness and energy saving are also required. In other words, it is necessary to contribute to climate change countermeasures by constructing highly efficient refrigeration and heat pump systems that use environmentally friendly natural refrigerants. F-gas regulations and the Kigali amendment have brought about price increase in existing HFC refrigerants and accelerated development alternative refrigerants with low global warming potentials. However, there is concern in the refrigeration industry regarding steady supply and prices of these alternative refrigerants for a period of more than 10 years. This presentation introduces development cases of refrigeration and heat pump systems using natural refrigerants for industrial applications.