The background of the slide is a photograph of two large, white industrial heat pump units. The units are tall and rectangular, with various control panels, vents, and pipes visible. The text "Heat pump system references" is overlaid on the right side of the image in a white, sans-serif font.

Heat pump system references

District and local heating networks – Buildings
Wastewater treatment plants – Waste treatment plants – Industry

Heat pump system references



Our industrial heat pumps are used, for example, in the meat and processed food industries, dairy and beverage industries, as well as the process and plastic industries. Our heat pumps produce heat and refrigeration for various processes, office buildings, schools and logistics centers, among others.

These examples give a short introduction to the equipment and system solutions implemented at our customers' sites.

In order for the solutions to be successful and durable, it is important to have accurate knowledge of equipment requirements and site conditions. Please contact us already in the planning phase. We are a Finnish manufacturer with knowledge of the conditions in Finland.

District and local heating networks

Public utilities have successfully tackled environmental goals, as can be seen in these example sites. Industrial heat pumps are a functional solution for both single heat source sites and hybrid applications. We will assist you in monitoring the requirements set for your products and systems, and we are happy to offer our expertise for your site.

Buildings

Heat pumps are close to people in schools, research institutes, and museums. Our examples demonstrate the many ways in which our industrial heat pumps can be used. As experts in heating and refrigeration, we can assist and serve you in all questions you may have from the planning phase onwards.

Wastewater treatment plants

Wastewater is no longer a problem, but an opportunity. A large amount of energy is stored in processed wastewater. With a heat pump, you can turn some of this energy to heat for the needs of the treatment plant, which will decrease the amount of purchased energy needed. With a heat pump, treated wastewater can also be used as the heat source in local applications: large geothermal heat fields can be replaced with a couple of heat exchangers and their auxiliary systems. Our experts will assist you in practical solutions starting from the earliest planning phase.

Waste treatment plants

The use of industrial heat pumps in organic waste treatment is an excellent example of sustainable energy solutions. You can find information on actual heat pump solutions from our example sites. Biomass has become an important energy source, and we are excited to be taking part in implementing environmentally friendly energy solutions for our customers. If you are interested in utilizing biomass, please contact us and we can give you more information about your options.

Industry

High quality products are made in continuous or batch processes according to all requirements. Heat pumps play an important and central role in these processes. Our specialty is harnessing the energy produced in the processes, as well as simultaneously producing cooling and heating. Our experts will be happy to assist you in studying the utilization opportunities in your industrial process.

2010

Heat pump technology used in the development of a city district Pitkämäki local heating network, Fortum, Nokia, Finland

Heat source: Geothermal heat
Heating capacity: 280 kW
Water temperature: 74°C

- One Series S heat pump

A school and business park to be built in the Pitkämäki district will receive around one-third of all the heating energy it needs from the heat pump system. The industrial heat pumps of the heating system, built in a shipping container, get their thermal energy from the sediment at the bottom of nearby Pyhäjärvi lake and deep rock wells.

2014
2016

Cooling and heating under laboratory conditions Kraftingen MAX IV Lab, Lund, Sweden

Heat source: Process cooling
Heating capacity: 5,570 kW
Cooling capacity: 3,900 kW
Water temperature: 80°C

- Eight Series P heat pumps
- Three Series S heat pumps

The heat pumps are used to cool the components of a particle accelerator and produce water at a temperature of +80°C for the district heating network. The MAX-IV laboratory includes a total of eleven heat pumps manufactured by Oilon. The heat produced with the Oilon heat pumps corresponds to the annual consumption of around 2,000 detached houses.

2012

Recovering waste heat from refrigeration of ice rinks Jevnaker municipality, Jevnaker, Norway

Heat source: Heat pump: heat recovery at a refrigeration plant, geothermal heat, and a condenser of the refrigeration plant. The system also includes peat and bio oil.
Heating capacity: 500 kW
Water temperature: 70°C

- One Series P heat pump

Waste heat from the cooling system of the speed skating rink is used to heat the energy plant with an Oilon ChillHeat heat pump. The district heating network distributes heat to a hospital, schools, and homes. An additional heat source is a geothermal heating system under a football field. The refrigeration plant's condensers can be used as an air source heat pump system in the summertime. We designed and implemented both the system and its demanding automation.



Image: Perry Nordeng



Kraftringen MAX IV Lab, Lund, Sweden

"The MAX-IV laboratory includes a total of eleven heat pumps manufactured by Oilon. The heat produced with the Oilon heat pumps corresponds to the annual consumption of around 2,000 detached houses."



Helen Oy, Sakarinmäki, Finland

"The heat pump generates 79% of the school center's annual energy consumption of 1,200 MWh."



2014

Geothermal heat as part of a hybrid system Orimattilan lämpö, Artjärvi, Finland

Heat source: Geothermal heat, bio, and oil
Heating capacity: 150 kW
Water temperature: 75°C

- One Series P heat pump

The heating technology renewal project aimed at independence from a single heat source and a single technological solution. The new devices and versatile system also provide more business opportunities in the area. The ChillHeat pump produces the base load power of the hybrid system for the district heating network. The system also includes a bio container and an oil-fired boiler as a backup device.

2013

Heat pumps in a renewable energy hybrid test Helen Oy, Sakarinmäki, Finland

Heat source: Geothermal heat, solar heat, and oil
Heating capacity: 275 kW
Water temperature: 63°C

- One P 300 heat pump

Heating and warm water for the Sakarinmäki school are provided by a hybrid system. The system consists of an industrial Series P ChillHeat pump, 16 solar heat collectors, and two Oilon burners. The heat pump generates 79% of the school center's annual energy consumption of 1,200 MWh. The energy generated by the solar heat collectors goes directly into the heating network, to a heat pump or to a geothermal heating circuit. Oil-fired boilers are also used during the coldest seasons.

2011

Steady heating for an art gallery with industrial heat pumps Tate Modern, London, England

Heat source: Process cooling
Heating capacity: 600 kW
Water temperature: 53°C

- One Series S heat pump

The heating system and humidity of an art gallery are particularly important. At Tate Modern in London, Oilon ChillHeat pumps keep the temperature steady to ensure that the works of Picasso, Dali, and Matisse, among others, are preserved for posterity.

2011

Industrial heat pump heats a school in Oslo **Ljan school, Oslo, Norway**

Heat source: Ground source heat
Heating capacity: 215 kW
Water temperature: 75°C

- One Series P heat pump

The pleasant-looking school building is now heated in an environmentally friendly manner with heat pumps. The Norwegian school system is clearly pleased with the industrial Oilon ChillHeat pumps: pumps have been delivered to several schools in Norway.

2014

Industrial heat pumps can also be used in renovated buildings **Sannäs Manor, Sannainen, Finland**

Heat source: Geothermal heat
Heating capacity: 230 kW
Water temperature: 70°C

- One Series P heat pump

Located in Sannainen of Porvoo, Finland, the historical Sannäs Manor has been renovated into a training and conference center, which is why the technology must meet modern requirements. The manor was built in 1837. It is unlikely that the master at the time, baron Axel Gustaf Mellin, or the servants whose job it was to carry in the wood to heat the manor could have imagined how easily and reliably the manor and the water used by its occupants would be heated with industrial Oilon ChillHeat pumps.

2015

Heat for a logistics hall from the ground **Y. Auramaa terminal, Rauma, Finland**

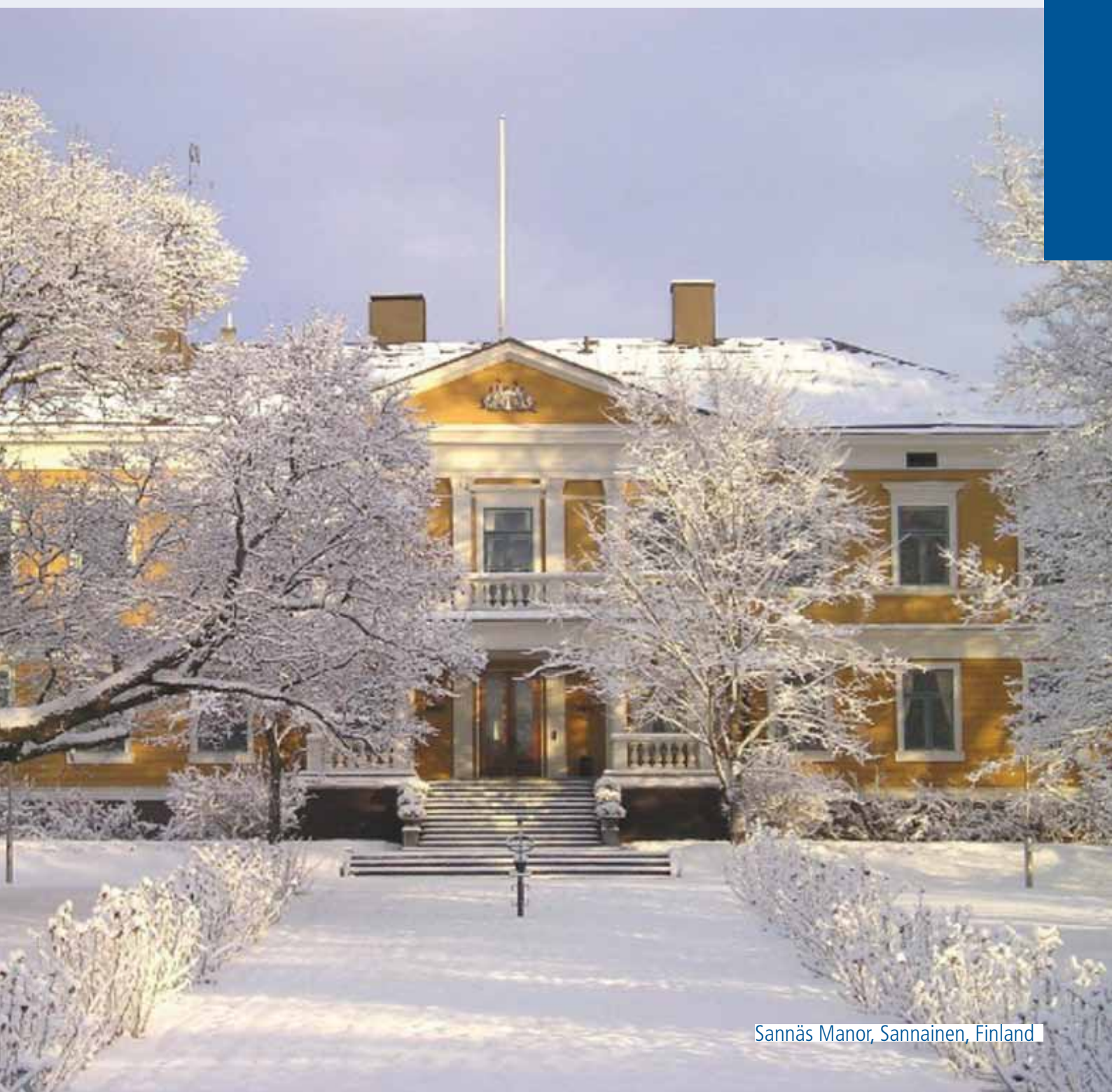
Heat source: Geothermal heat
Heating capacity: 210 kW
Water temperature: 55°C

- One RE 210 SU heat pump

Originally a one-man company, the transport industry family business currently offers versatile logistics services in addition to transport services. The company wanted to heat its logistics hall in an energy efficient manner that is also environmentally friendly. That is why they bought ChillHeat pumps.



Image: Sannäs manor



Sannäs Manor, Sannainen, Finland

"Located in Sannainen of Porvoo, Finland, the historical Sannäs Manor has been renovated into a training and conference center, which is why the technology must meet modern requirements."



Montevideo Airport, Uruguay

"The heat pumps are used to cool and heat the airport. The heat source is the outdoor air. During hot summer days, the system is used to cool the facilities."

2015

Efficient industrial heat pumps improve comfort at the Montevideo Airport

Montevideo Airport, Uruguay

Heat source: Outdoor air

Heating capacity: 590 kW

Water temperature: 65°C

- Two P 380 heat pumps

Industrial Oilon ChillHeat pumps keep the indoor premises of Carrasco/General Cesáreo L. Berisso International Airport in Montevideo, Uruguay pleasantly consistent. The heat pumps are used to cool and heat the airport. The heat source is the outdoor air. During hot summer days, the system is used to cool the facilities.

2012

Vaasan Vesi water utility has automated its operations

Vaasan Vesi, Vaasa, Finland

Heat source: Treated municipal wastewater

Heating capacity: 600 kW

Water temperature: 65°C

- Two Series S heat pumps

Pått water treatment plant in Palosaari, Vaasa treats all of the wastewater from the town of Vaasa and some of the wastewater from the neighboring municipalities. The biological treatment process is fully automated. So is the heating system that uses treated wastewater. The heating automation system was designed and implemented by Oilon Scancool. The heat is generated with an industrial ChillHeat pump.

2013

Water utility invests in energy efficiency with industrial heat pumps

Joensuun Vesi, Joensuu, Finland

Heat source: Treated wastewater

Heating capacity: 800 kW

Water temperature: 60°C

- Two Series S heat pumps

Built in 1975, Kuhasalo wastewater treatment plant has been expanded and renovated several times. The latest renovation took place in 2014. Special attention was paid to energy economy in the latest renovation. A decision was made to start utilizing the waste heat from treated wastewater. Oilon's industrial ChillHeat pumps were chosen for the task. The water cools by around four degrees Celsius in the process. To even out the production and consumption of heat, the heat is stored in an accumulator tank.

2014

Industrial heat pumps taken into use in connection with water treatment plant renovation

Oulun Vesilaitos water utility, Oulu, Finland

Heat source: Treated municipal wastewater

Heating capacity: 260 kW

Water temperature: 60°C

- One Series RE heat pump

Taskila water treatment plant of Oulun Vesi water utility is the largest municipal wastewater treatment plant in Northern Finland. The renovation and expansion of the Taskila plant was completed in 2014. Industrial ChillHeat pumps were installed in connection with the renovation. With the heat pumps, the heat from the wastewater is utilized to heat the building.

2014

Treatment plant property heated with the water of Lake Päijänne

HSY Pitkääkoski, Helsinki, Finland

Heat source: Treated drinking water

Heating capacity: 520 kW

Water temperature: 50°C

- Two S 280 heat pumps

Pitkääkoski water treatment plant of the Helsinki Region Environmental Services Authority HSY processes raw water from Lake Päijänne to be used by households in Helsinki. Before the raw water enters the treatment plant, it is used in a heat recovery system. The waste heat from the wastewater is used to heat the treatment plant facility with industrial ChillHeat pumps.

2016

Heat recovery from wastewater

Huittisten JVP, Huittinen, Finland

Heat source: Treated wastewater

Heating capacity: 310 kW

Water temperature: 55°C

- One P 220 SU VFD heat pump

Heat is recovered from the treated wastewater and used to heat the treatment plant.





HSY Pitkääkoski, Helsinki, Finland

"The waste heat from the wastewater is used to heat the treatment plant facility with industrial ChillHeat pumps. "



Jeppo Biogas, Jepua, Finland

"Energy efficiency of the biogas plant has been improved with Oilon's industrial ChillHeat pumps and direct heat recovery. The process is cooled and heated with the heat pumps to minimize the need to use primary energy."



2016

Heat recovery from water treatment process condensate heat Rauma wastewater treatment plant, Rauma, Finland

Heat source: Treated municipal wastewater and process wastewater
Heating capacity: 120 kW
Water temperature: 70°C

- One Series P heat pump

The heat recovered from the process of Maanpäänniemi water treatment plant in Rauma is used to heat the facilities.

2013

Industrial heat pumps boost biogas process Jeppo Biogas, Jepua, Finland

Heat source: Waste treatment process
Heating capacity: 750 kW
Water temperature: 80°C

- Two Series P heat pumps

Jepuan Biokaasu Oy focuses on the recycling of nutrients and renewable energy. The biogas raw material is organic waste. The biogas process starts when microbes start to digest the mass at a temperature of around 39°C. Methane is generated during this process. The methane gas is used in electricity and heat generation, for example. The energy efficiency of the biogas plant has been improved with Oilon's industrial ChillHeat pumps and direct heat recovery. The process is cooled and heated with the heat pumps to minimize the need to use primary energy.

2013

Recovering waste heat from waste treatment process Labio Oy, Lahti, Finland

Heat source: Biogas production process
Heating capacity: 760 kW
Water temperature: 75°C

- One Series P heat pump

The biogas generation and processing plant, the largest of its kind in Finland, produces renewable biogas from waste. When waste is utilized, the environmental disadvantages of a landfill are reduced. The process consumes less energy than before now that a heat pump has been added to the waste treatment process. With the heat pump, the waste heat from the waste treatment process can be recycled in a biogasification process, for instance, to clearly increase the amount of total energy obtained from the waste.

2013

Waste heat from refrigeration process efficiently utilized **Arla Ingman, Sipoo, Finland**

Heat source: Ammonia condensate
Heating capacity: 750 kW
Water temperature: 80°C

- One Series P heat pump

The heat pump system at the Sipoo Dairy recovers waste heat from the refrigeration process and uses it to heat water, the facility, and the feedwater of a steam boiler. The waste heat is recovered directly from the refrigeration facility. This cost-efficient solution also has an excellent coefficient of efficiency. "The delivery is also important for us, as we strive to reach the energy and environmental goals laid down in our environmental strategy. We will carefully monitor the efficiency of the system to make further plans," says Vesa Hostikka, PTD Manager at Arla Ingman.

2006-
2013

Heat recovery, cooling, and heating generate savings in the food industry **Snellman, Pietarsaari, Finland**

Heat source: Ammonia condensate
Heating capacity: 1.4 MW
Water temperature: 75°C

- Three Series S heat pumps

Oilon has delivered Snellman equipment and automation solutions in several stages, for various applications, and for different process stages. Snellman's meat processing unit uses only renewable energy in heating and steam generation. "In the past seven years, Snellman has reduced its energy consumption by 29%, while the floor area of the production facilities has increased by 240%. This is mostly due to the heat pumps," explains Markus Snellman. The industrial ChillHeat pumps handle both the cooling and the heating of Snellman's production facilities.

2010
2012

Industrial heat pumps save energy and the environment at all production facilities of a food industry conglomerate **Valio production plants: Riihimäki, Joensuu, Vantaa, Seinäjoki, and Lapinlahti, Finland**

Heat source: Ammonia condensate, process cooling
Heating capacity: 1,1–3.2 MW
Water temperature: 63–70°C

- Series S heat pumps

The Finnish food industry giant Valio is committed to Finland's national goal of reducing the energy consumption of industrial production by 9% between 2005 and 2016. Oilon's energy efficient heat pump solutions assist Valio in reaching this goal. The applications recover heat from the production processes and generate cooling to be used by the production plants.





Snellman, Pietarsaari, Finland

"In the past seven years, Snellman has reduced its energy consumption by 29%, while the floor area of the production facilities has increased by 240%. This is mostly due to the heat pumps."



Hartwall, Karijoki, Finland

"Hartwall continuously strives to reduce the energy consumption of its production plants, and Hartwall favors renewable energy sources. We took yet another step towards our goal by introducing the industrial ChillHeat pumps."



2014

Heat recovery from water treatment process condensate heat Graham Packaging Company, Ryttylä, Finland

Heat source: Cooling water from casting molds
Heating capacity: 520 kW
Water temperature: 62°C
Cooling capacity: 355 kW
Water temperature: 8°C

- One RE 420 heat pump

Manufacturer of blow molded plastic storage containers, Graham Packaging Company has clearly stated its environmental mission: "to minimize environmental load". The mission has been realized at the company's Ryttylä factory in Finland by introducing industrial ChillHeat pumps. The heat pumps are used to cool the casting molds in the plastic manufacturing process. The heat from the process is recovered and utilized in the heating of the facility.

2015

Heat recovery from spring water promotes beverage factory's environmental goals Hartwall Ab, Karijoki, Finland

Heat source: Spring water
Heating capacity: 150 kW
Water temperature: 70°C

- One P 150 heat pump

A large Finnish beverage industry company, Hartwall's spring water bottling plant is in Karijoki in the Finnish province of South Ostrobothnia. Hartwall continuously strives to reduce the energy consumption of its production plants, and Hartwall favors renewable energy sources. The company took yet another step towards its goal by introducing the industrial ChillHeat pumps. The heat recovered from the spring water is used in the manufacturing process and to heat the facility.

2015

Industrial heat pumps as part of a scouring process Lavadero Blengio, Uruguay

Heat source: Outdoor air
Heating capacity: 255 kW
Water temperature: 50°C

- One S 180 heat pump

Blengio wool scouring plant in Libertad, Uruguay processes huge volumes of lamb's wool. The processed wool is exported to Southern Europe and the United States. Plenty of warm water is needed to scour the wool, on average 10,000 liters per hour. The water used to be heated with wood, but the current system that includes industrial heat pumps is easier and more environmentally friendly.

2014

Industrial heat pump saves energy in dairy production plant **Satamaito, Pori, Finland**

Heat source: Ammonia condensate

Heating capacity: 450 kW

Water temperature: 80°C

- One Series P heat pump

The condensate heat from the dairy process heating system is recovered with a ChillHeat pump.

2014

Geothermal heat pump ensures energy efficient cooling and heating of a factory **Oilon, Wuxi, Jiangsu province, China**

Heat source: Geothermal heat

Heating capacity: 500 kW

Temperatures (cooling/heating): 7/40°C

- One RE 420 SU heat pump

Six kilometers of geothermal heating pipes have been installed in the surroundings of Oilon's factory in Wuxi to heat the facilities in the winter and provide waste heat in the summer. Due to the high temperature of the ground in the area, water can be used as the fluid in the geothermal heating circuit. Combined with the layered ventilation system of the factory, the geothermal heating system keeps the production plant pleasant and efficient throughout the year.

2014

More cooling capacity and warm water **Tricolor, Nanyang, Henan province, China**

Heat source: Process cooling circulation

Heating capacity: 370/490 kW

Temperatures (cooling/heating): 5/55°C

- One RE 420 SU heat pump

The largest dairy plant in the western part of the Henan province, Tricolor installed the heat pump primarily to increase its much needed cooling capacity. The heat pump can also generate warm water when necessary.





Oilon, Wuxi, China

"Combined with the layered ventilation system of the factory, the geothermal heating system keeps the production plant pleasant and efficient throughout the year."



Yili, Weifang, China

"At the factory of China's largest dairy company Yili in Weifang, a heat pump has been integrated into the precooling and preheating system to improve energy efficiency."



2016

Minimizing the need for steam in a food manufacturing plant **Want Want, Neijiang, Sichuan province, China**

Heat source: Process cooling circulation
Cooling/heating: 600/850 kW
Temperatures (cooling/heating): 22/80°

- Two P220 SU heat pumps

At the Neijiang plant of large Chinese food industry company Want Want, heat pumps are used to reduce the amount of steam needed to heat the processes. The Neijiang plant manufactures popsicles and cookies, for example. The heat pumps use the waste heat from the cooling systems of nine production lines and make the cooling system more energy efficient. The water generated by the heat pumps, at 80°C, can be used to cover most of the plant's steam demand.

2015

Combined cooling and heating in China's largest dairy company **Yili, Weifang, Shandong province, China**

Heat source: Process cooling circulation
Heating capacity: 180/290 kW
Temperatures (cooling/heating): 10/70°C

- One P 300 SU heat pump

At the factory of China's largest dairy company, Yili in Weifang, a heat pump has been integrated into the process precooling and preheating system to improve energy efficiency. There are separate cooling and heating accumulators to benefit the processes that require cooling or heating.

2016

Energy efficient top-class office environment **Yingte, Changzhou, Jiangsu province, China**

Heat source: Geothermal heat
Heating capacity: 400/260 kW
Temperatures (cooling/heating): 7 & 16/35°C

- Two RE330 SU heat pumps

Jointly developed by Oilon, Halton, and Chinese construction company Ying-Te, the geothermal heat/ventilation system ensures that the office environment remains pleasant even during the hot and humid days of summer, but in an energy efficient manner. Heat pumps provide cooling and heating for the ventilation beam system that has two temperature levels to suit the current temperature and capacity demand. The energy consumption level is kept optimal under the varying conditions by optimizing the heat pumps' temperature levels based on the load in the different parts of the office building.

20xx

Efficient food production process with ChillHeat pumps **Oles Fast Food, Pietarsaari, Finland**

Cooling capacity: 400 kW
Heating capacity: 600 kW
Water temperature (cooling/heating): -6/70°C

- Two P300 heat pumps

Designed and implemented by Oilon Scancool, the heat pump solution reduces the need for primary energy in the food manufacturing process. The heat pumps cool and heat the process, and heat the property.

2016

Cooling for a hospital and energy for district heating **Fortum, Jorvi Hospital, Espoo, Finland**

Heat source: Hospital water cooling circuit
Cooling capacity: 900 kW Heating capacity: 1,380 kW
Water temperature (cooling/heating): 10/70°C

- One S600 heat pump
- One P300 heat pump

The renovated Jorvi Hospital in Espoo will be cooled in a centralized manner with two ChillHeat pumps. Managed by Fortum, the system's waste heat will be fed into the local district heating system to optimally utilize it. This will reduce the district heating emissions in the area.

2016

Car parts in an energy efficient manner **KB Components, Wuxi, Jiangsu province, China**

Heat source: Process cooling circulation
Heating capacity: 200/80 kW
Temperatures (cooling/heating): 7/45°C

- One RE210 SU heat pump

At the Wuxi factory of car part manufacturer KB Components, a heat pump provides the cooling needed by the process all year around. The heat pump also cools the factory offices in the summertime. In the winter, the waste heat from the process cooling system is utilized to heat the offices with a heat pump.





Jorvi Hospital, Espoo, Finland

"Managed by Fortum, the system's waste heat will be fed into the local district heating system to optimally utilize it. This will reduce the district heating emissions in the area."



Jevnaker community, Jevnaker

Ljan school, Oslo

Kraftringen MAX IV, Lund

Tate Modern, London

Lavadero Blengio, Libertad

Montevideo airport

Oulun vesilaitos

Snellman, Pietarsaari

Jeppo Biogas, Jepua

Vaasan vesi

Valio, Seinäjoki

Oy Hartwall Ab, Karijoki

Fortum, Nokia

Huittisten jätevedenpuhdistus

Satamaito, Pori

Rauman jätevedenpuhdistus

Y. Auramaa terminal, Raur

Helen Oy, Sakarimäki

HSY Pitkäkoski, Helsinki



