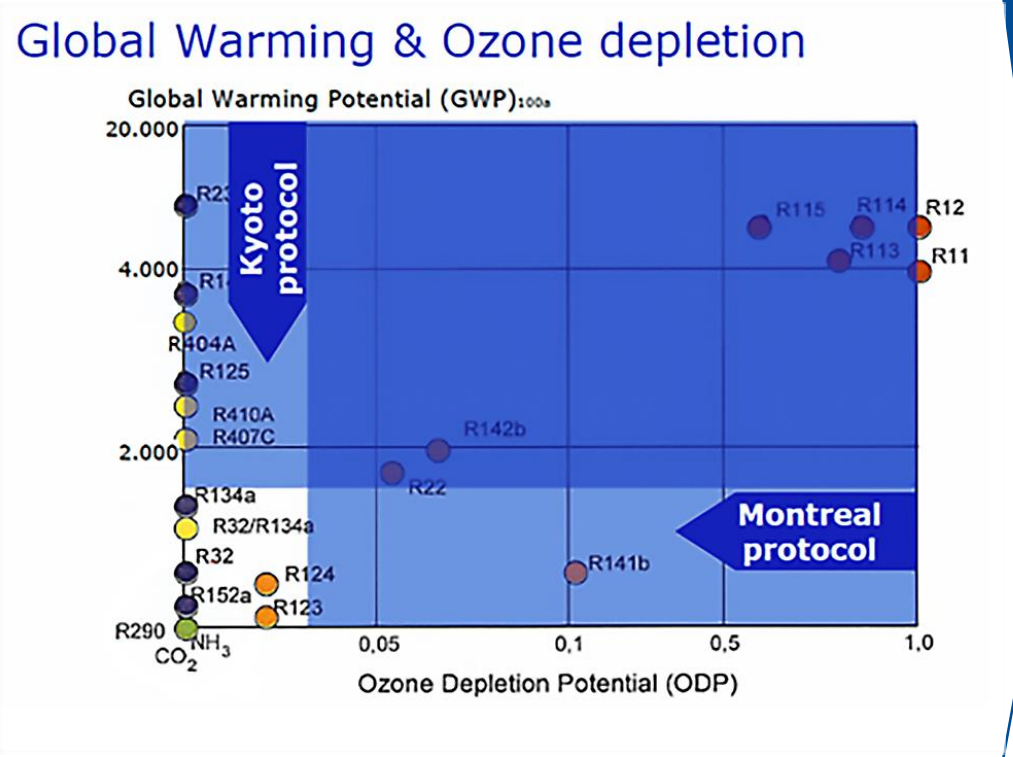
Epta

Advanced Solutions for your Store

CO_2 TRANSCRITICAL SYSTEMS

WHY CO_2 FOR DX REMOTE SYSTEMS

- Environment friendly refrigerant
- ODP = 0
- GWP = 1
- Excellent heat transfer capability
- Colorless and odorless up to 3%
- Not flammable
- Stable substance that does not decompose
- High cooling capacity compared to traditional refrigerants
- Smaller pipe diameters
- Low and stable price



EPTA NATURAL REFRIGERATION SYSTEMS

ECO_2 Small



EPTACLIMA



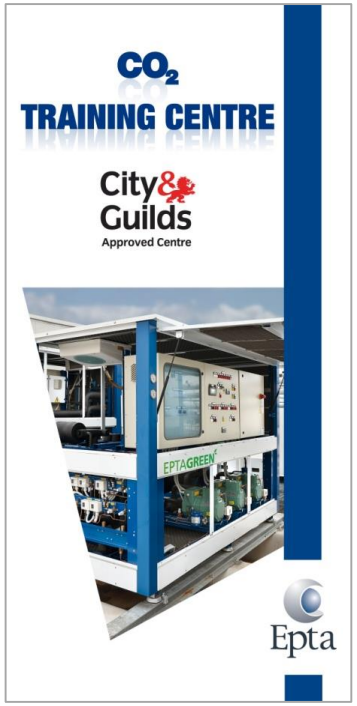
ECO_2 Large



ECO_2 Small COMPACTA



E+E Epta Educational



CO_2 transcritical FTE System

New highly innovative CO_2 transcritical solution that combines low costs, energy saving and reliability in any country, with any external temperature

LIFE-C4R PROJECT

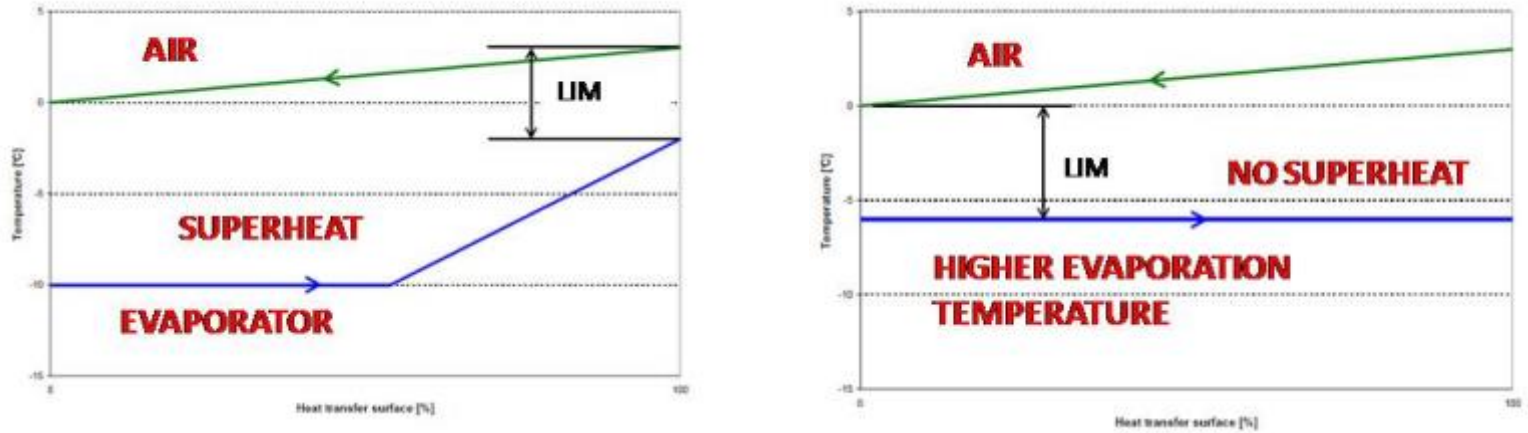
The FTE system is part of the Life-C4R Project (Carbon 4 Retail Refrigeration), aimed at finding new technologies and standards for natural refrigeration in retail sector, highlighting Epta's commitment to research and development.

Carbon
4 Retail
Refrigeration

Natural Technologies
for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

OVERFEEDING OF THE EVAPORATORS



- **What is the superheat?** The amount of heat added to the refrigerant after its complete evaporation. *The superheat is necessary to have only vapor at the evaporator outlet, but it also introduces a significant energy waste and higher compression work.*

- **Superheat and Evaporating Temperature** The maximum evaporating temperature is limited by the approach between the air inlet temperature and the refrigerant temperature at evaporator outlet. *Superheat causes lower evaporation temperature and hence higher energy consumption.*

- **ZERO superheat : overfeeding of evaporators** Superheat is completely eliminated, liquid refrigerant is mostly used at the evaporator, liquid and vapor are present at the MT evaporator outlet

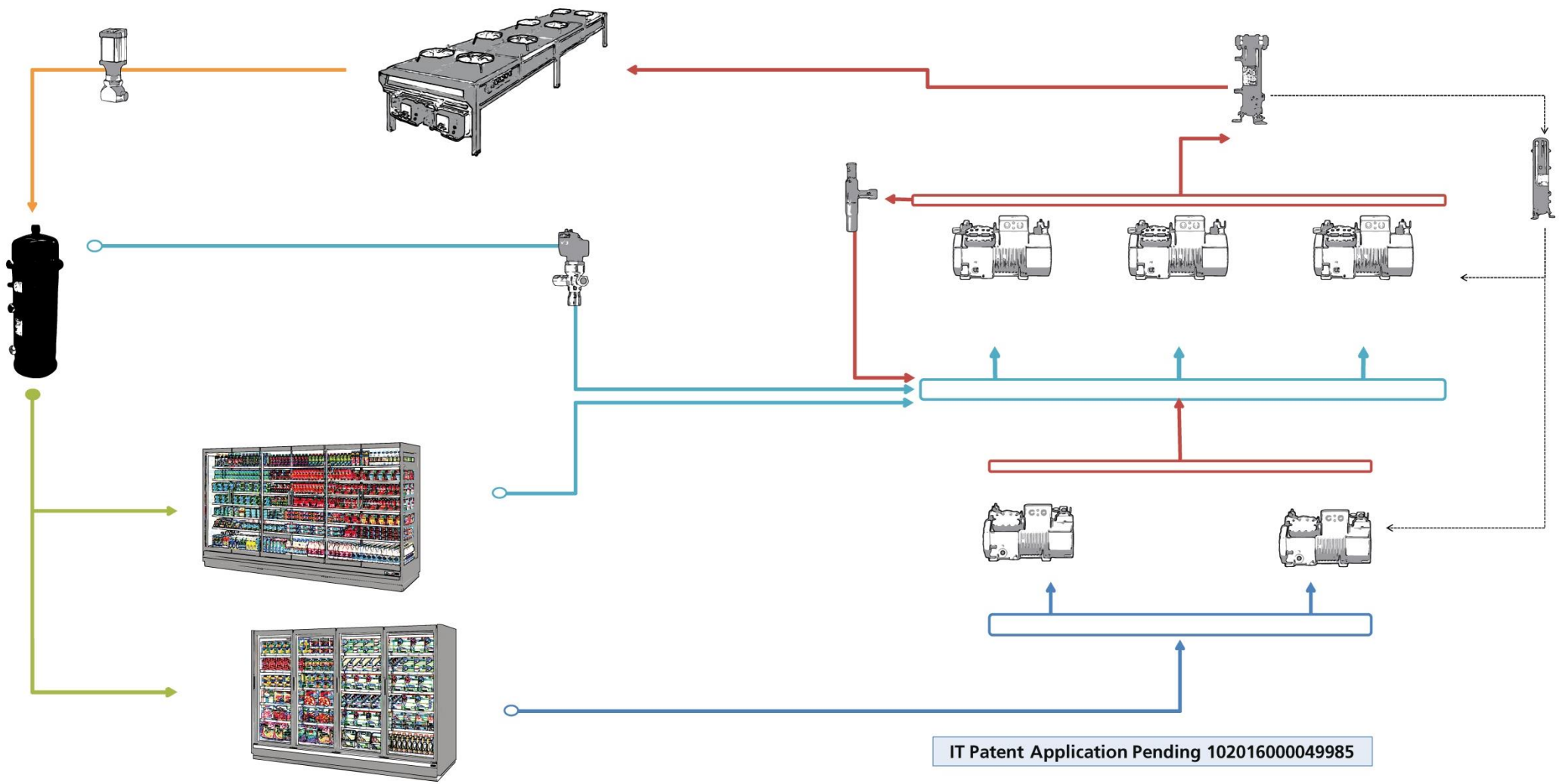
- **Advantages of evaporators overfeeding** Higher evaporation temperature (up to 6K), liquid refrigerant ensures excellent heat transfer

Epta

C4R Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

Life

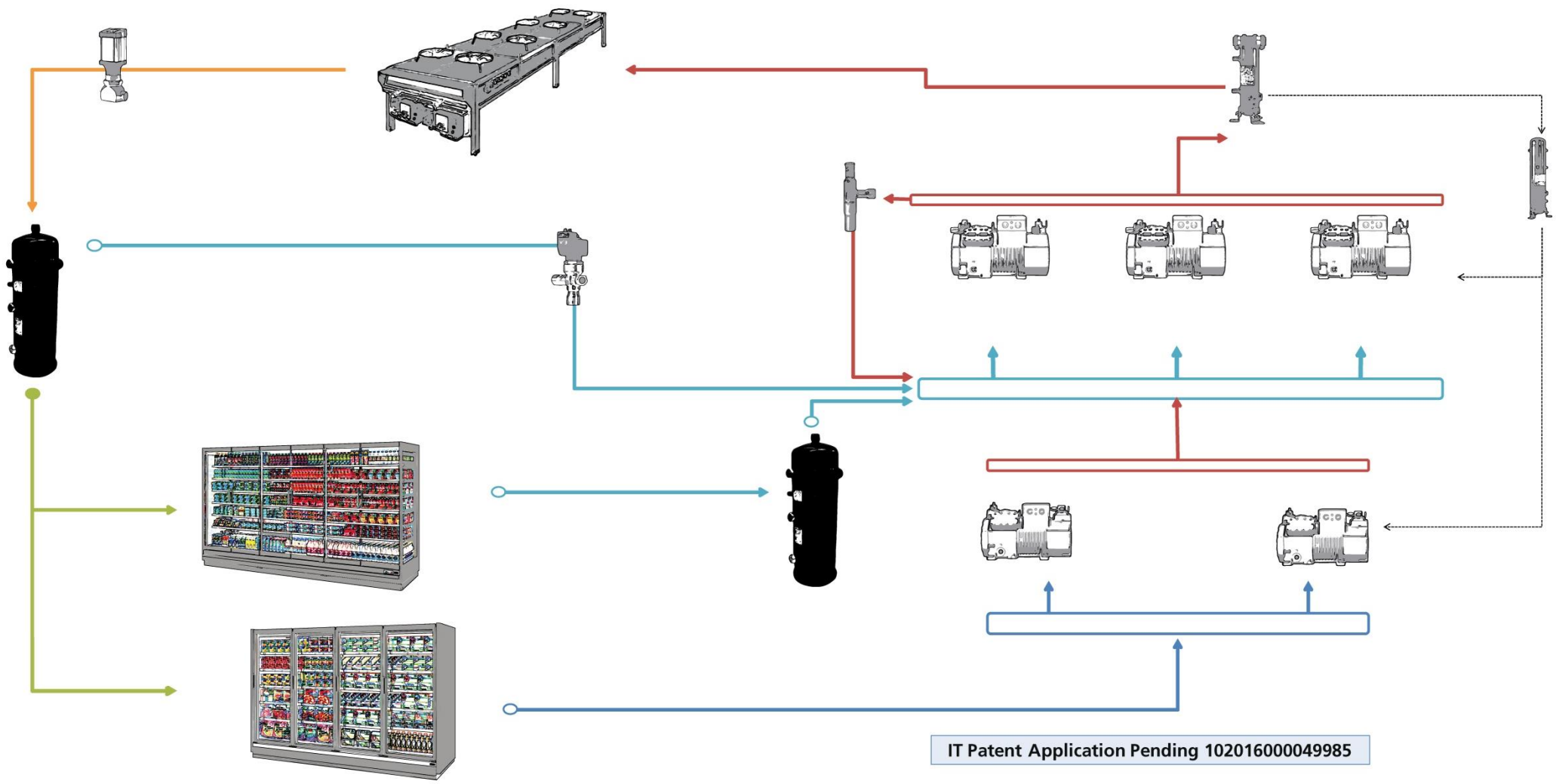
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

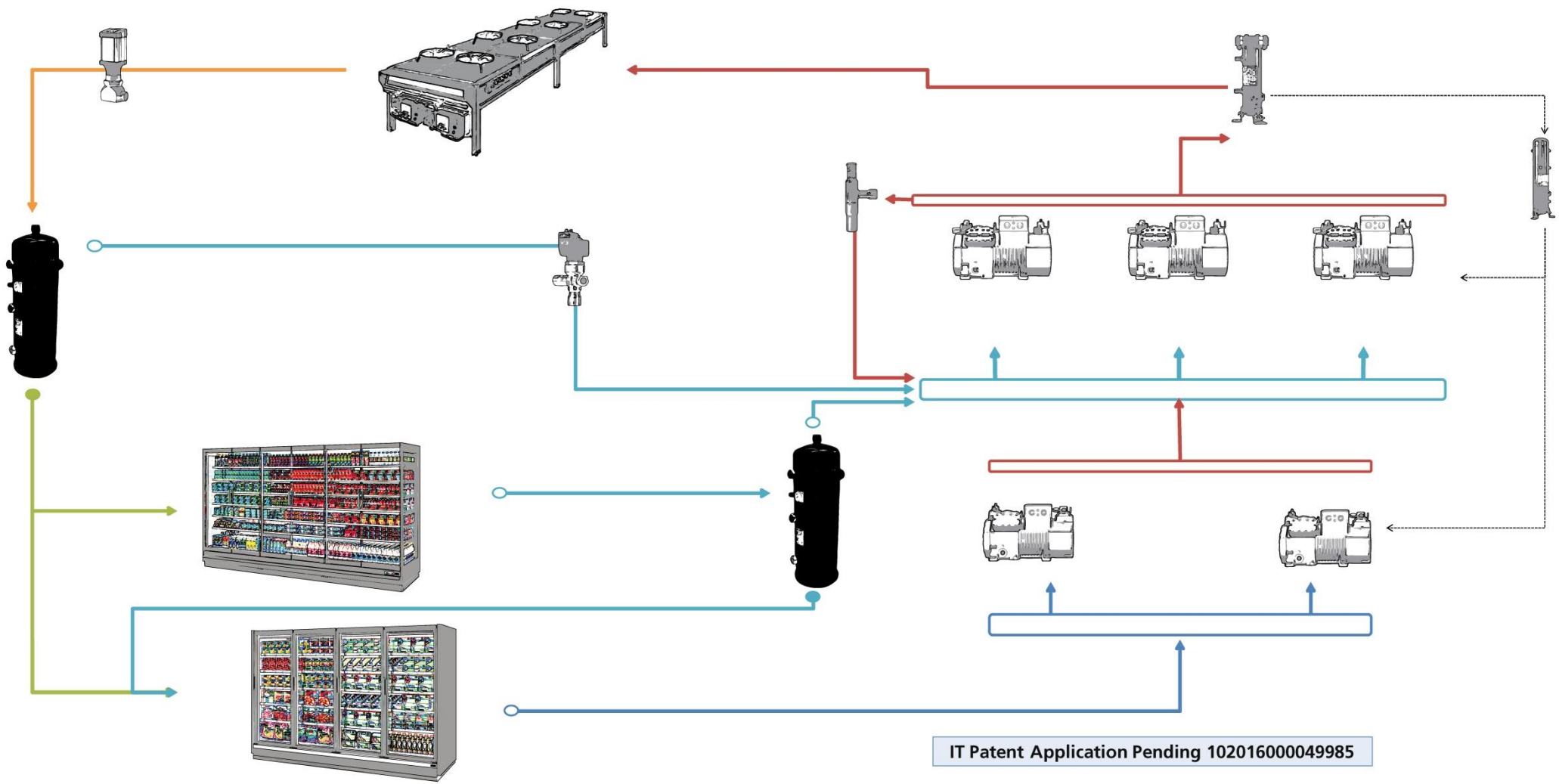
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

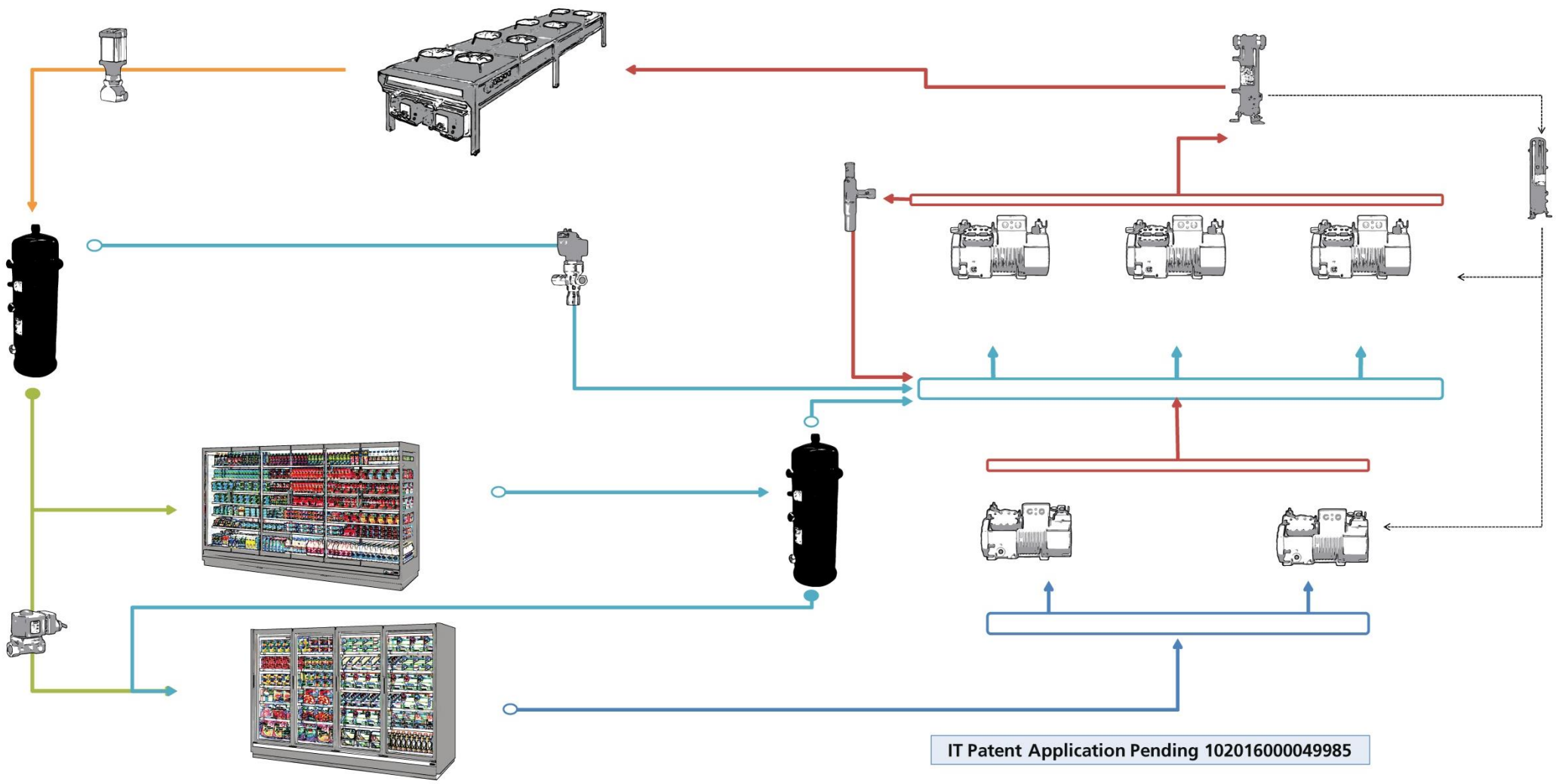
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

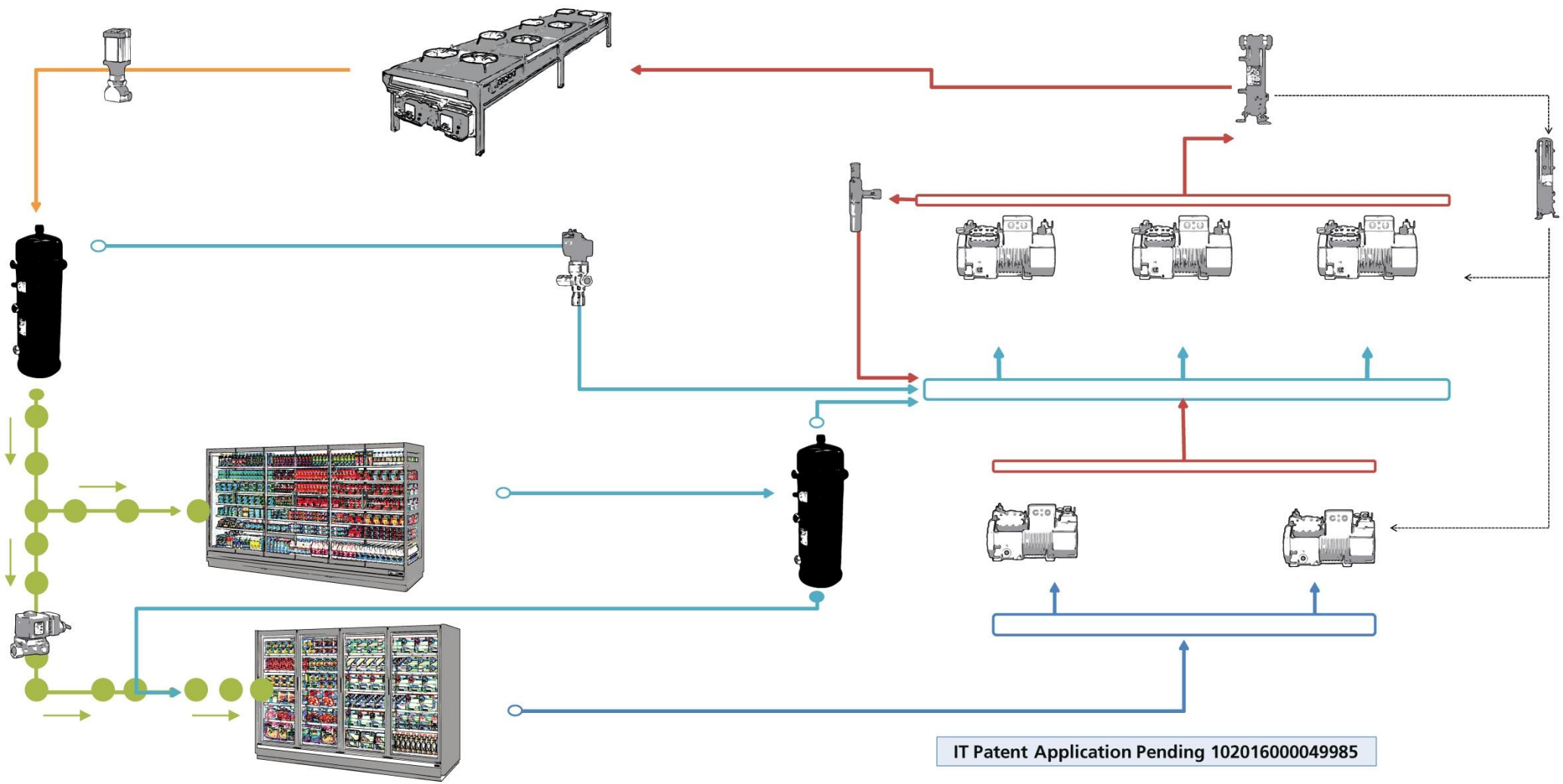
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

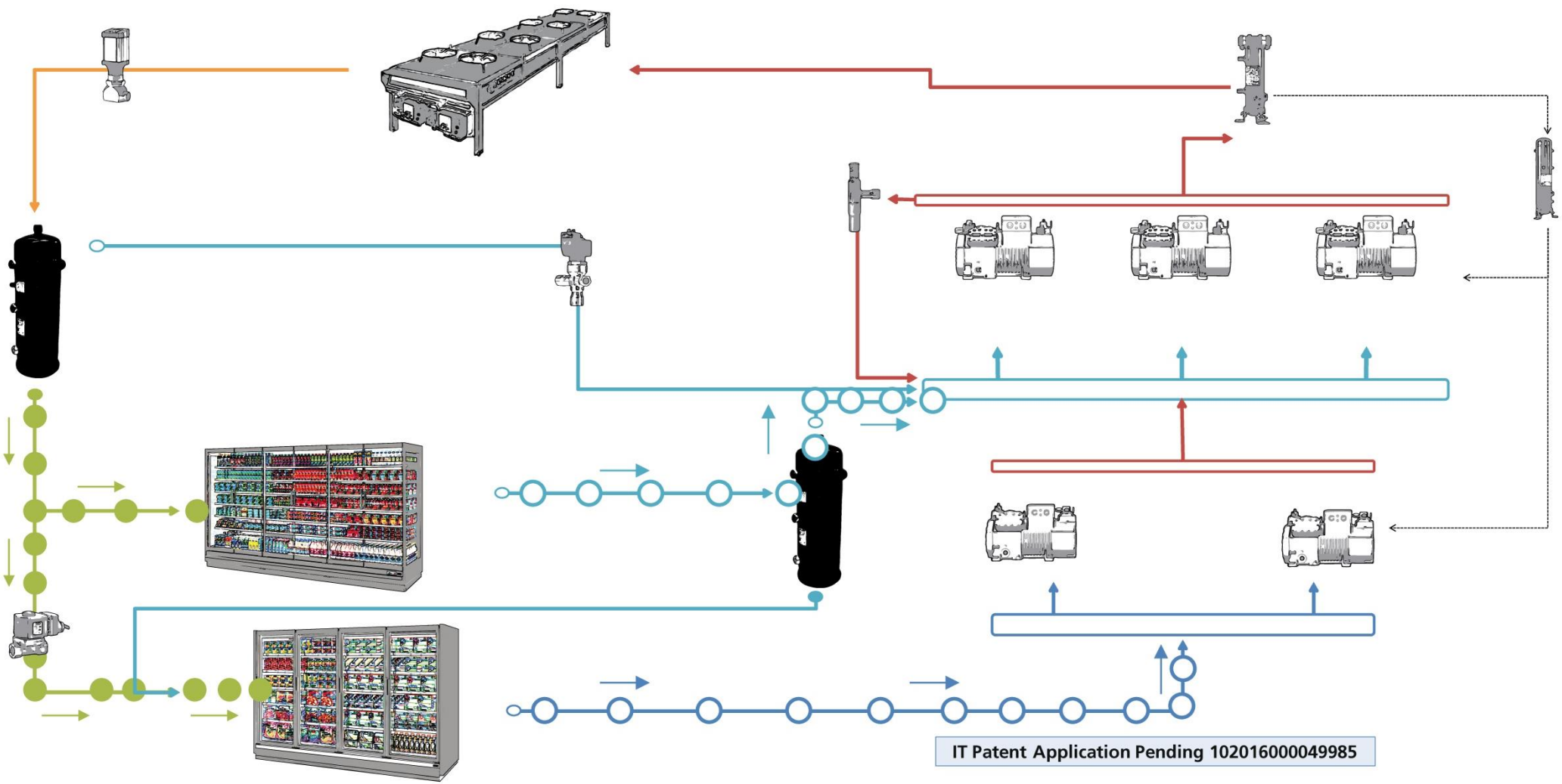
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

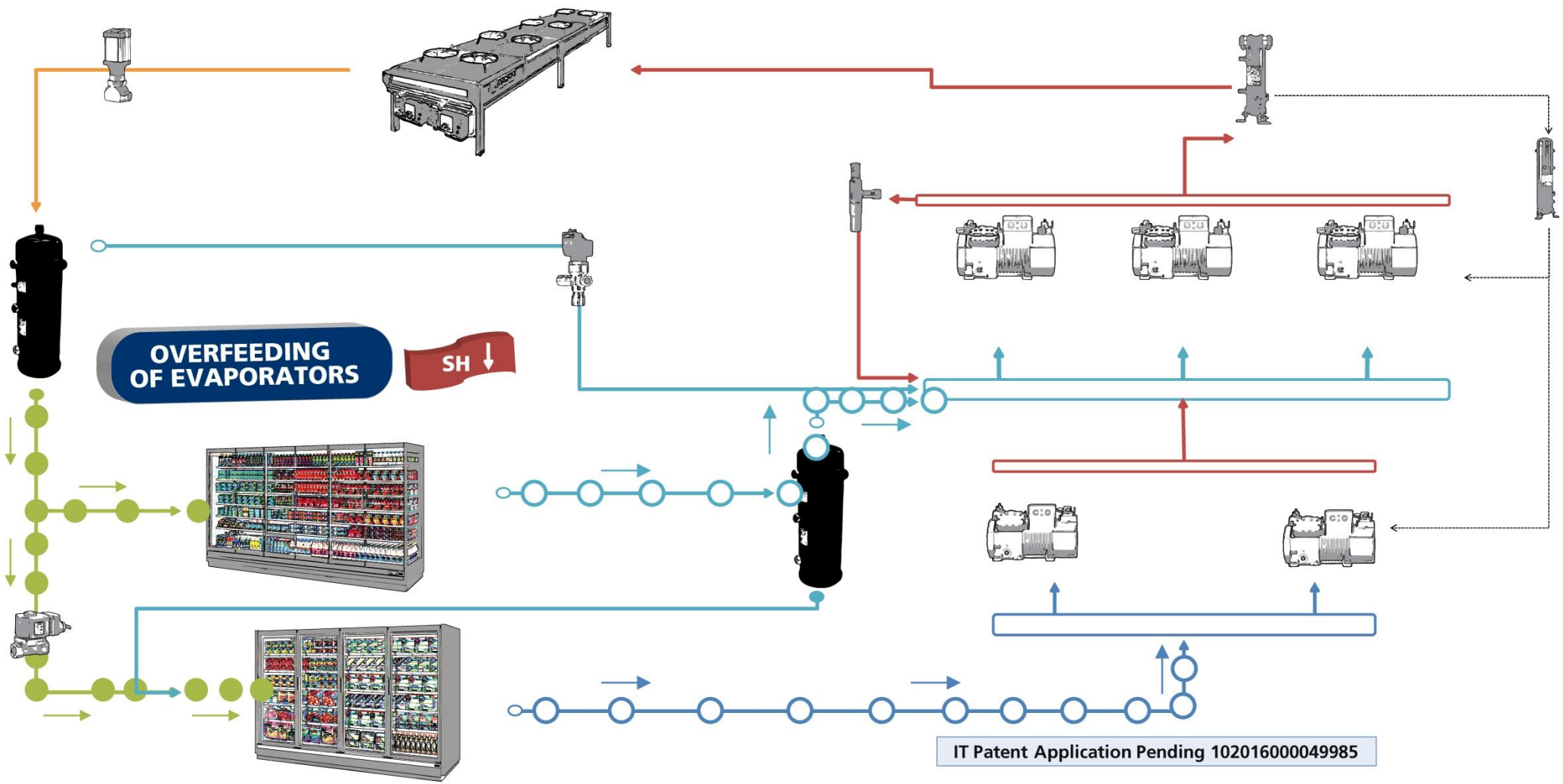
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

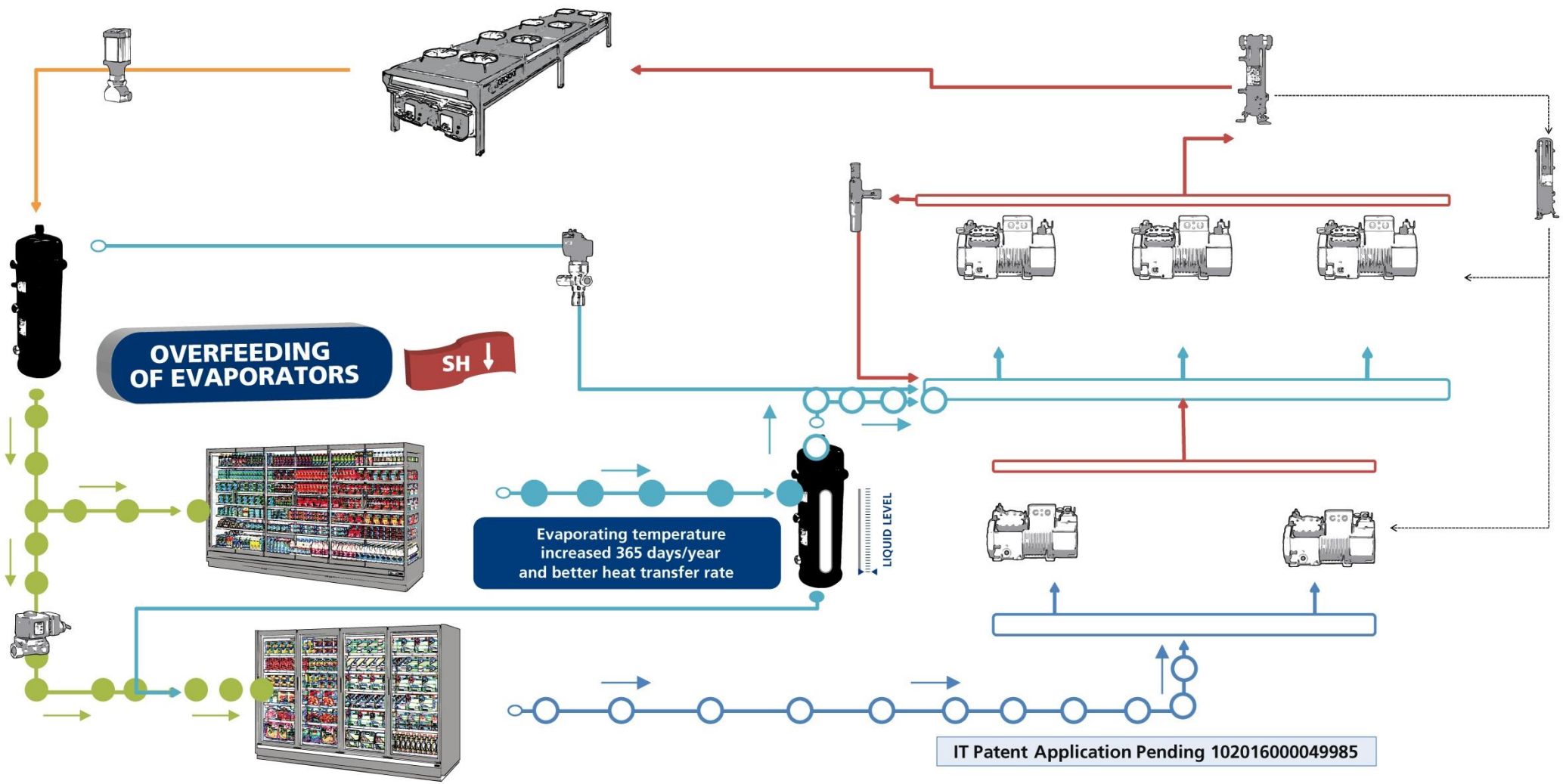
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



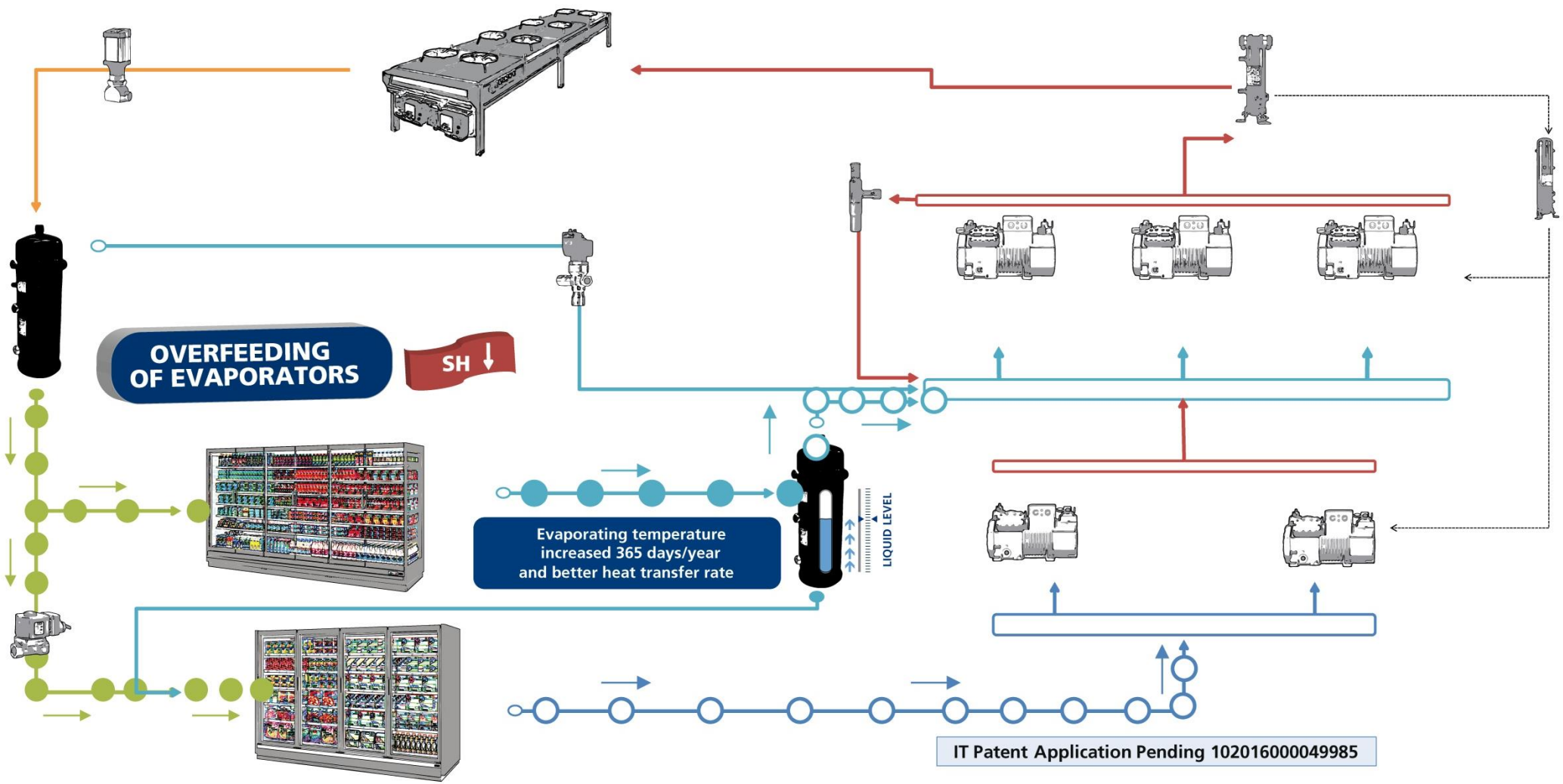
Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



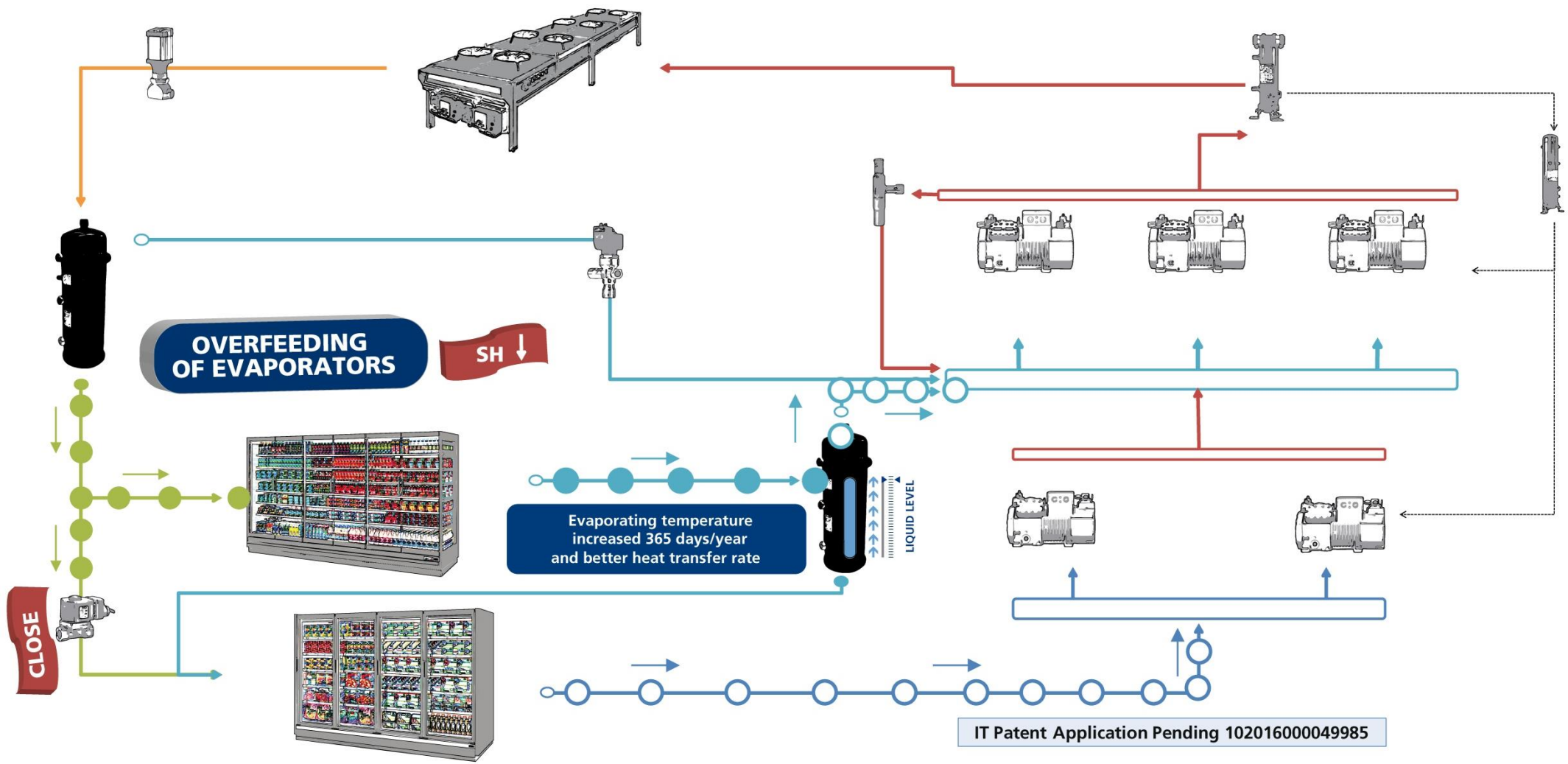
Carbon
4 Retail
Refrigeration
Natural Technologies
for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



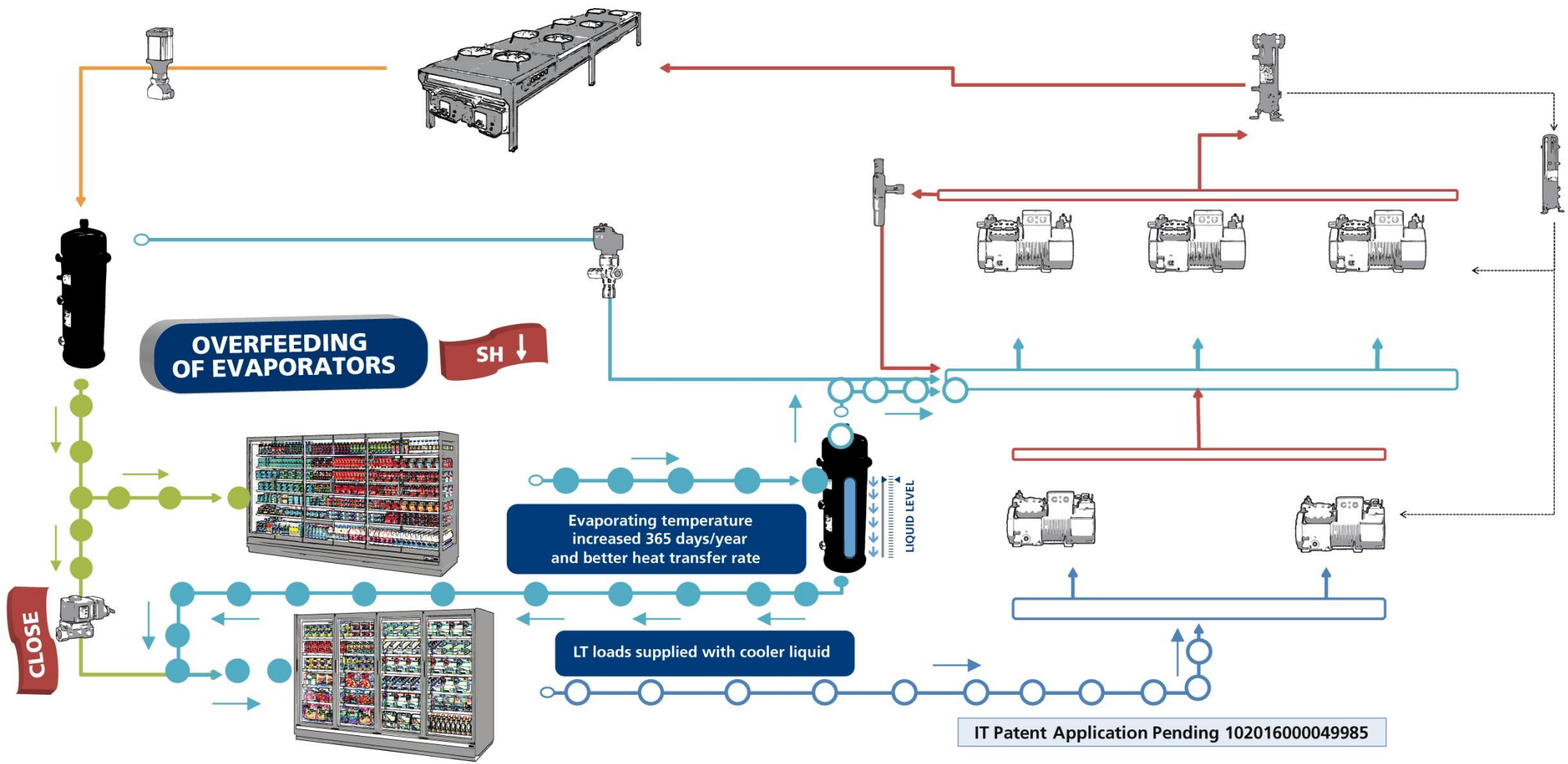
Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon
4 Retail
Refrigeration
Natural Technologies
for Sustainable Retail

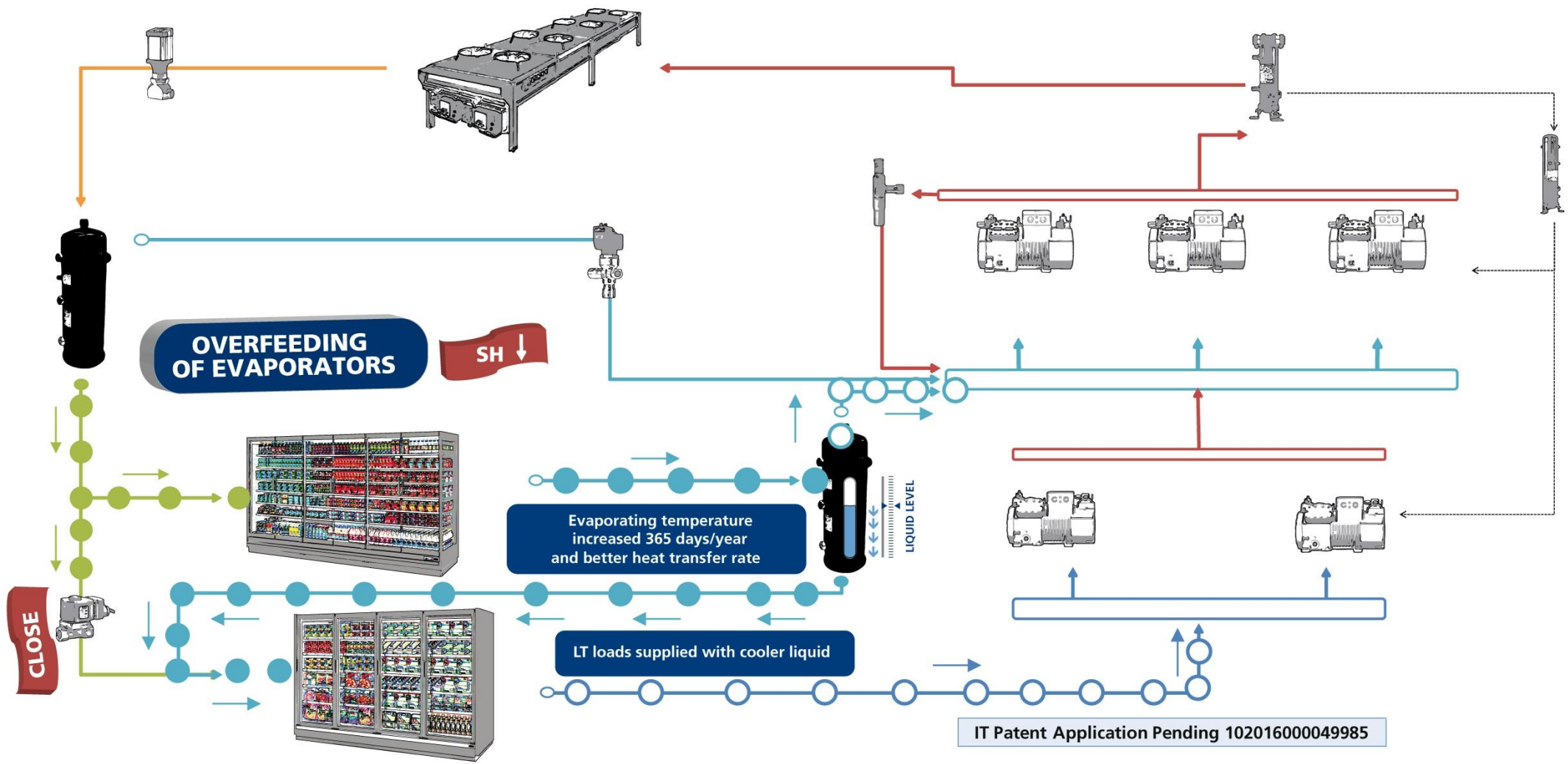
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

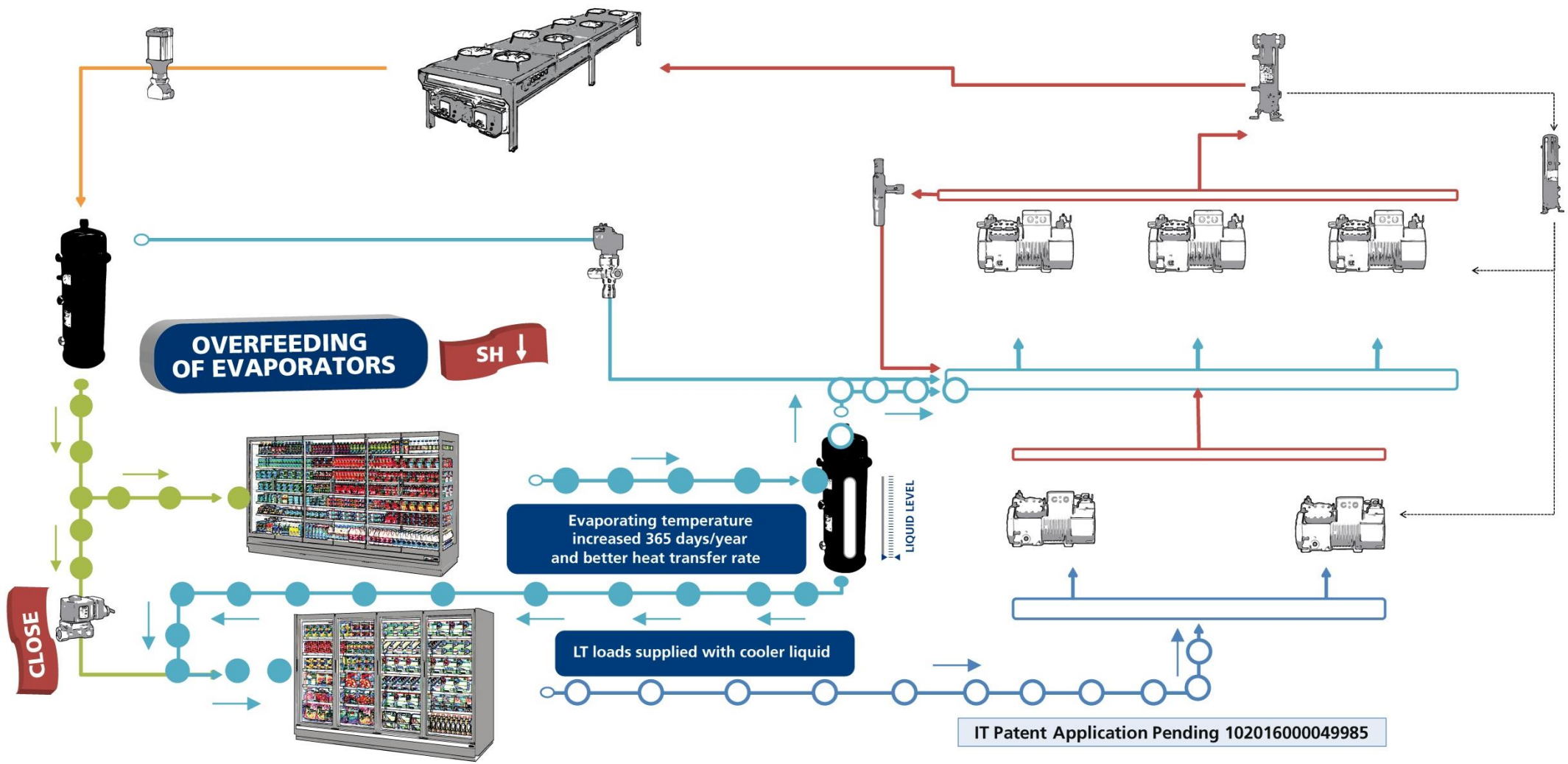
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

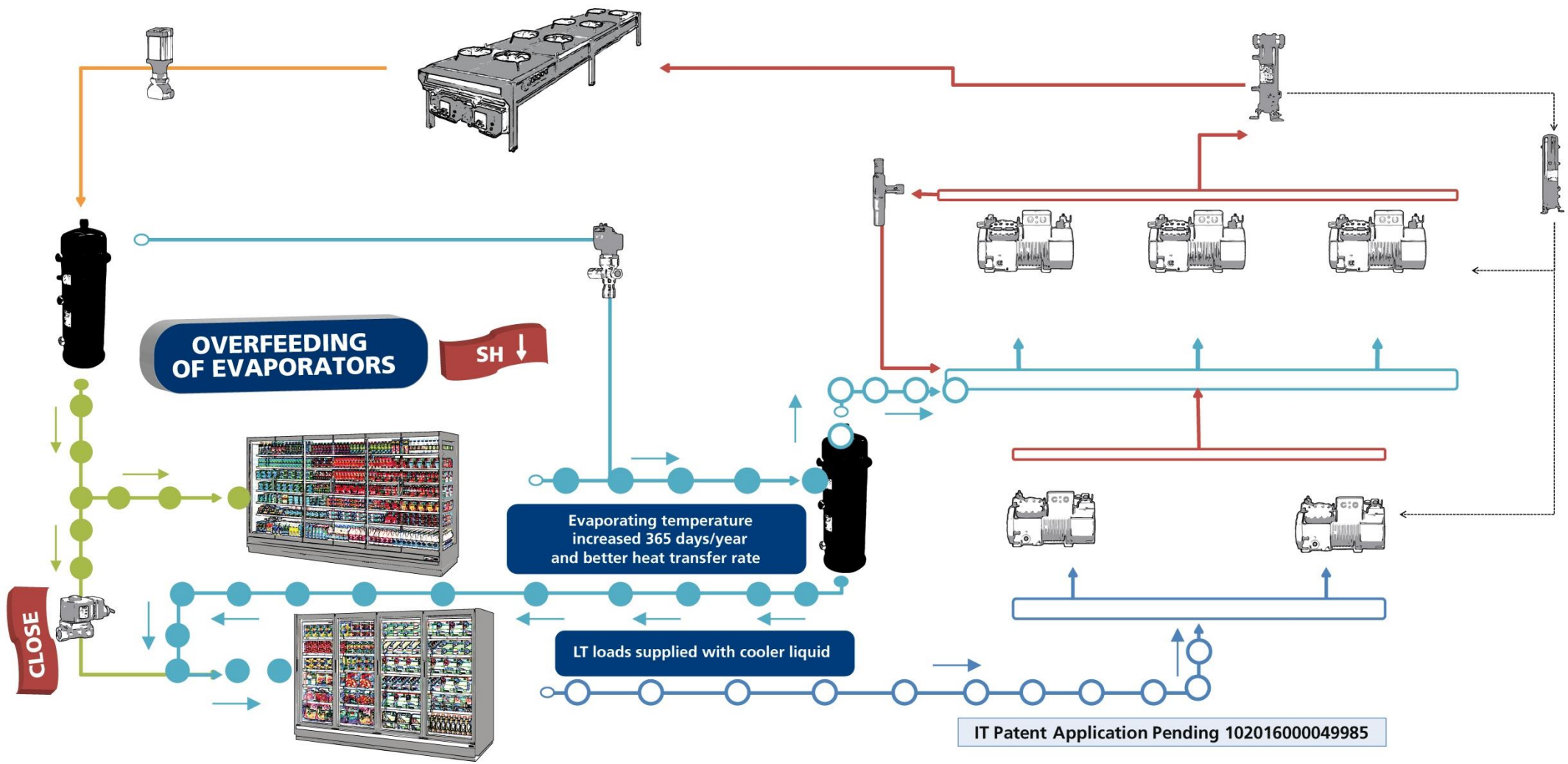
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

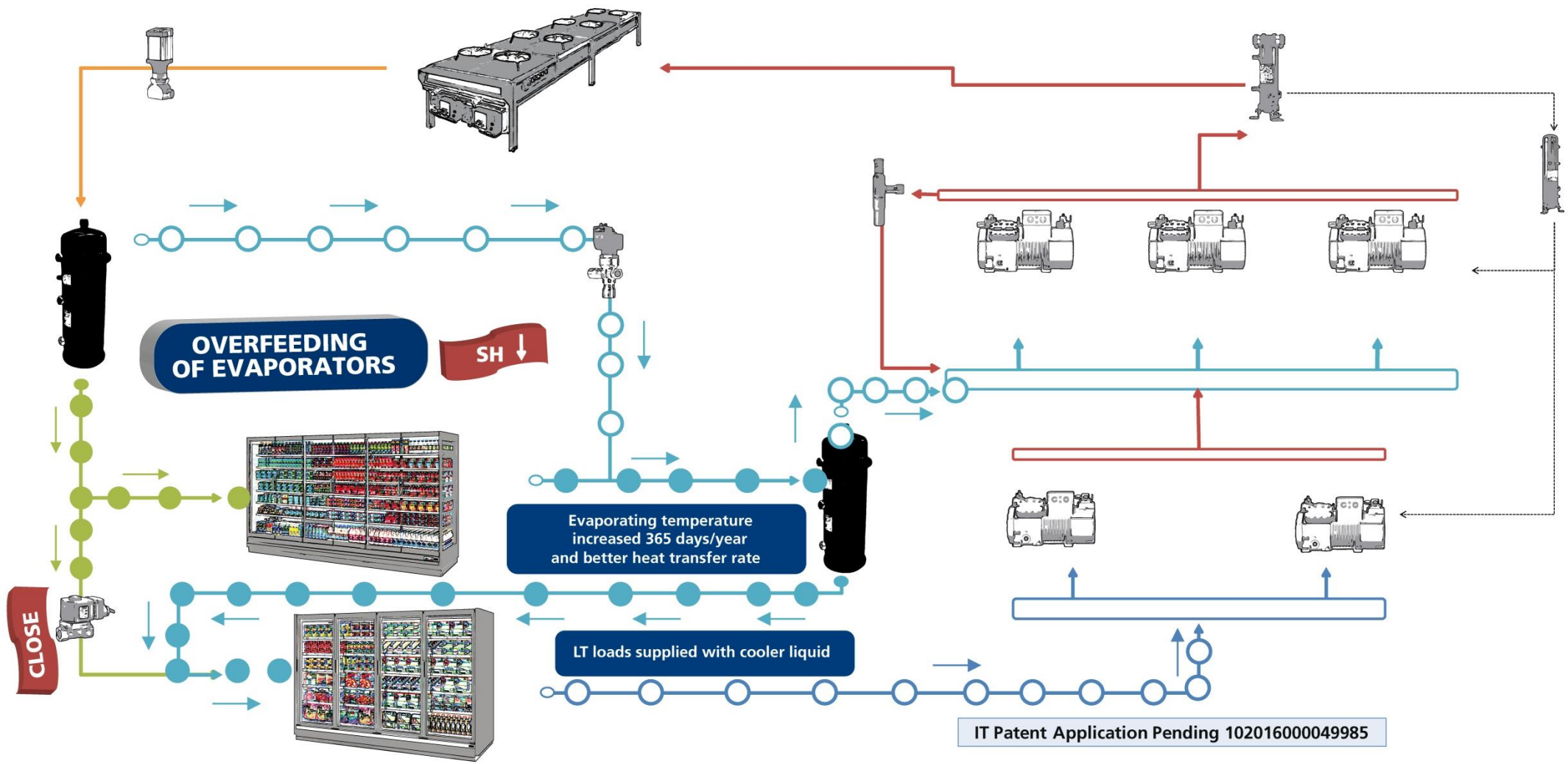
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

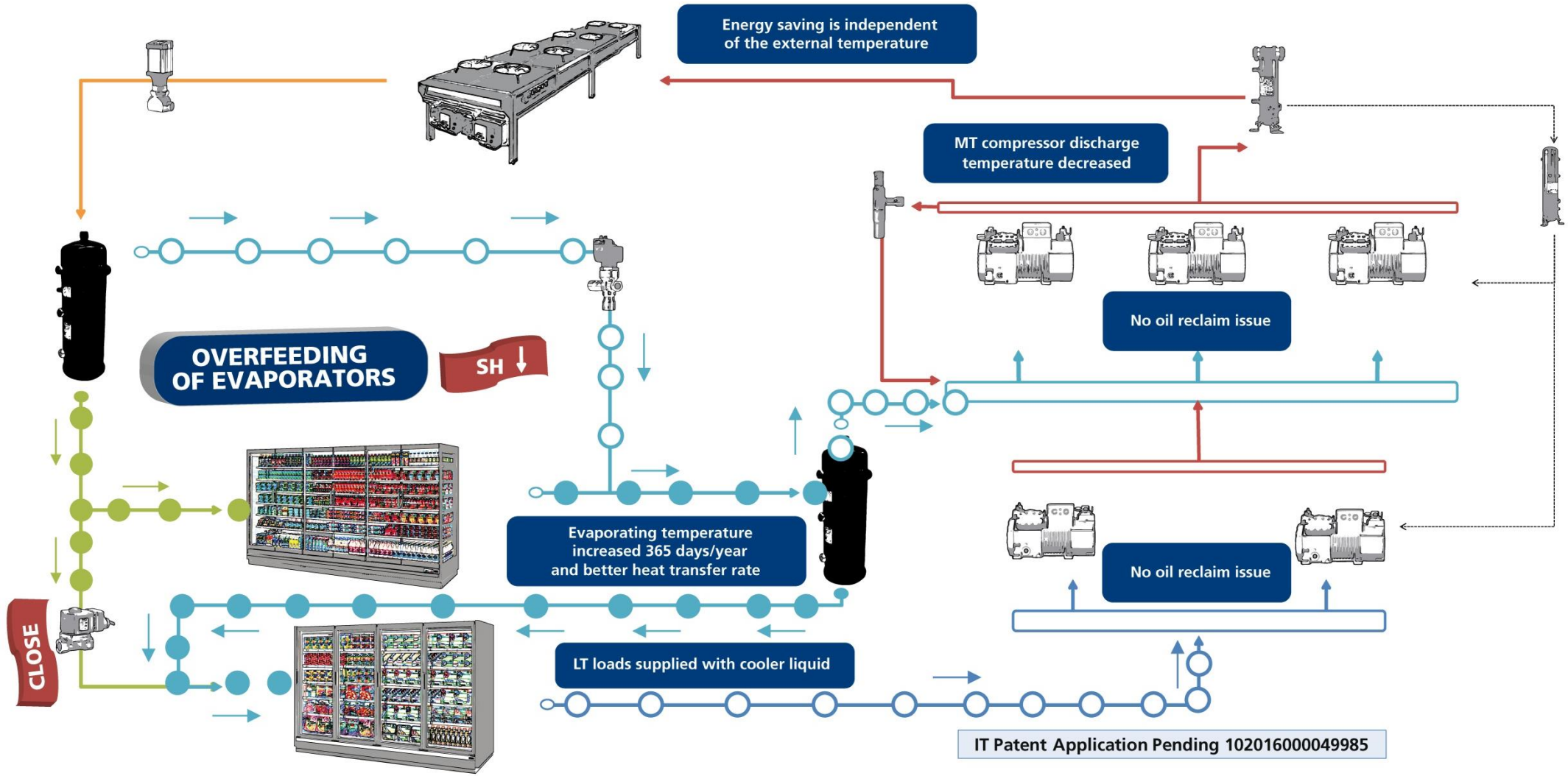
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120



Carbon 4 Retail Refrigeration

Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

FTE ADVANTAGES

1. **Evaporating temperature increased 365day/year**

   The efficiency of the CO_2 FTE SYSTEM is given by the MT cabinets operating with flooded (overfeeding) evaporators without superheat

   Evaporation temperature is increased up to 6K (2.5-3% energy saving per K)

2. **Energy saving is independent of the external temperature**

   Unlike ejector technology, the FTE system works in energy saving mode with flooded evaporators all year long

3. **Optimal performance at EVERY temperature**

   The absence of superheat decreases the discharge temperature of the compressors considerably, making it the ideal system for every climate.

4. **LT loads supplied with cooler liquid**

   Liquid to the LT freezers is subcooled after MT cabinets

5. **No oil return issues**

   Perfect lubrication is ensured as the oil circuit is uninterrupted

Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

FTE KEY FEATURES

FTE combines simplicity with outstanding performance:

- **Energy Saving: 10%**
  on an annual basis, independent of the latitude and the climate

- **Installation and maintenance cost savings: UP TO 20%**
  as it requires no ejector or parallel compression and is intrinsically very reliable

Simply available everywhere…NOW!

Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

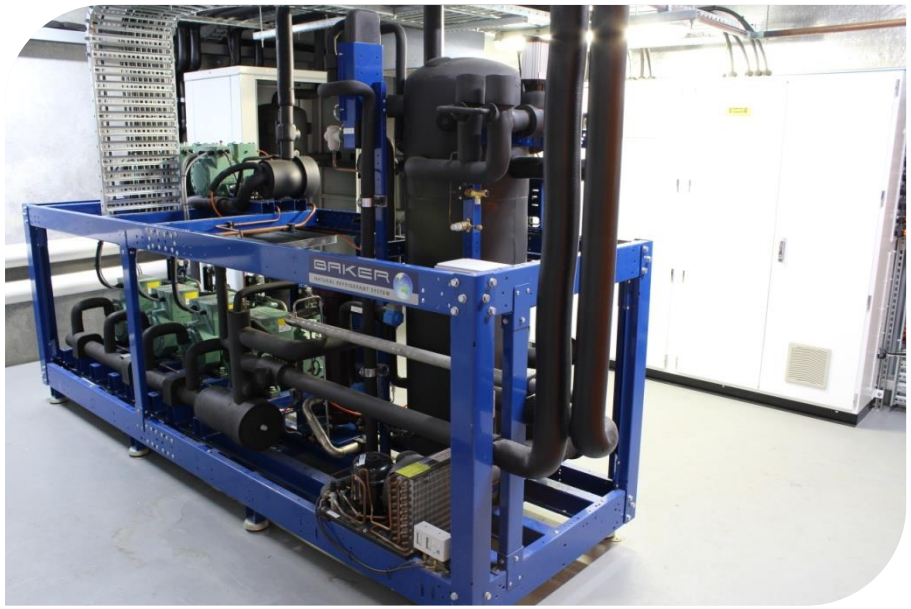
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

Epta

SIMPLE

because it does not need ejectors or sophisticated components, it is as simple as a standard basic CO_2 booster system

Mechanically the FTE system operates with the same components as the basic CO_2 transcritical system, plus the FTE multilevel liquid receiver.



C4R Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

Life

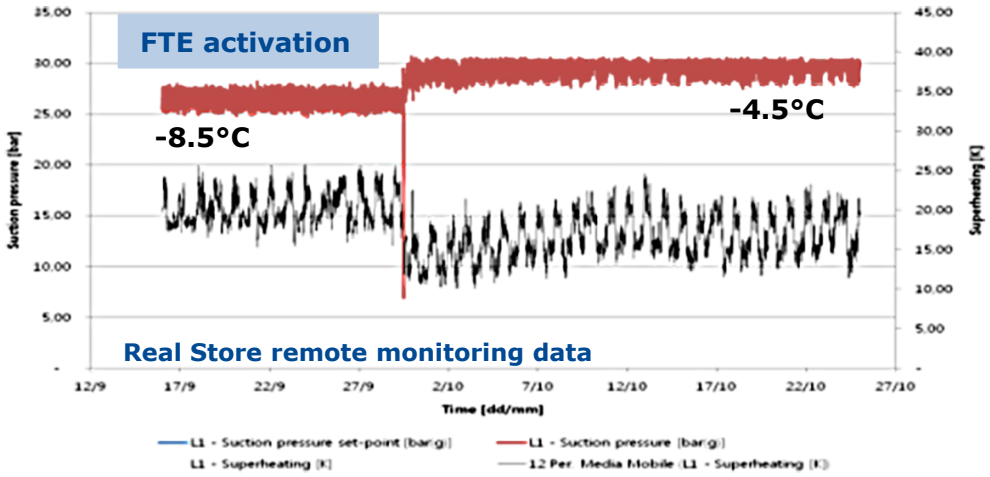
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

GLOBAL

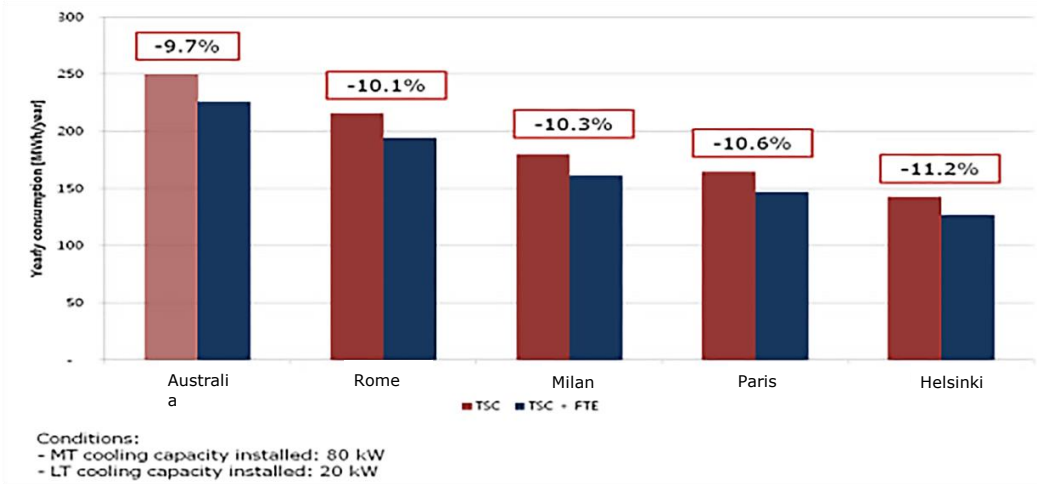
as it works perfectly in hot climates but offers the advantage of a dramatic reduction in consumption all year in any location

One solution for all markets, sustainable and efficient everywhere, and does not require any special expertise.

Evaporating temperature increased



Energy saving independent of the external temperature



The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

FTE KEY FEATURES

RELIABLE

as it is a modular solution based on standard components produced on a large scale: the MT and LT systems use standard CO_2 cabinets and freezers, the power pack is a standard basic CO_2 booster system, whereas the heart of the system is the FTE module, an intelligent standard multi-level liquid receiver.

Epta

C4R
Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

Life

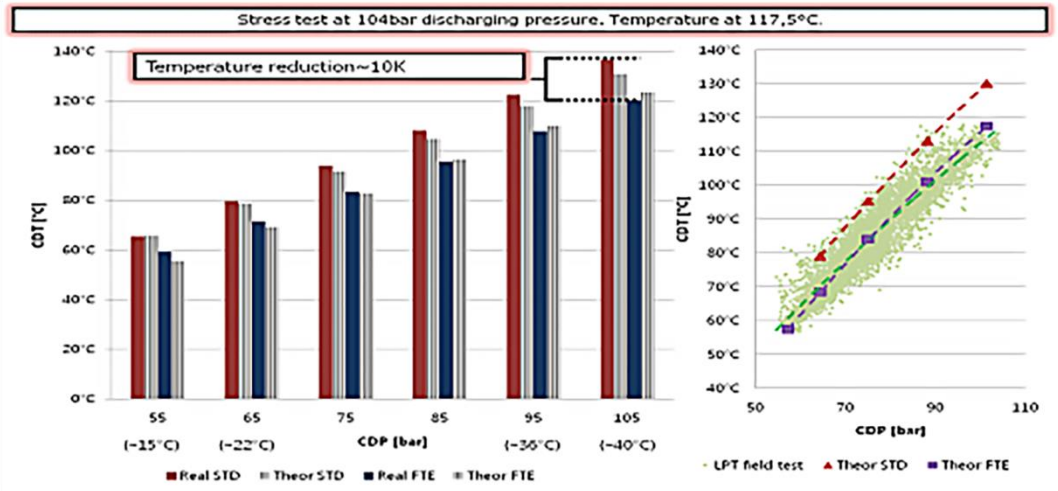
The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

FTE KEY FEATURES

RELIABLE

finally a CO_2 booster system solution more safe and robust than ever, because the FTE system reduces the compressor discharge temperature and allows perfect oil circulation providing better lubrication.

MT compressor discharge temperature decreased



Epta

C4R
Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

Life

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

FTE is a new business model :

- **INDUSTRIALIZE**
- **RELIABLE**
- **EFFICIENCY**

The future of natural refrigeration depends on systems that combine **cost, energy saving and reliability** in a simple design.

With CO_2 FTE SYSTEM the **cost, performance and reliability** gaps can finally be seen to be bridged.

FTE gives a significant contribution to **break down the barriers** to a natural future in refrigeration.

Carbon 4 Retail Refrigeration
Natural Technologies for Sustainable Retail

The Life-C4R project has received funding from the European Union under grant agreement n° LIFE 17 CCM/IT/000120

Epta

Thank you!

Follow us on: by Epta

www.eptarefrigeration.com