



solutions for europe
natural refrigerants

19 & 20 April, 2016 – Barcelona



 **ATMO**
sphere
solutions for europe
natural refrigerants

19 & 20 April, 2016 – Barcelona

Tewis

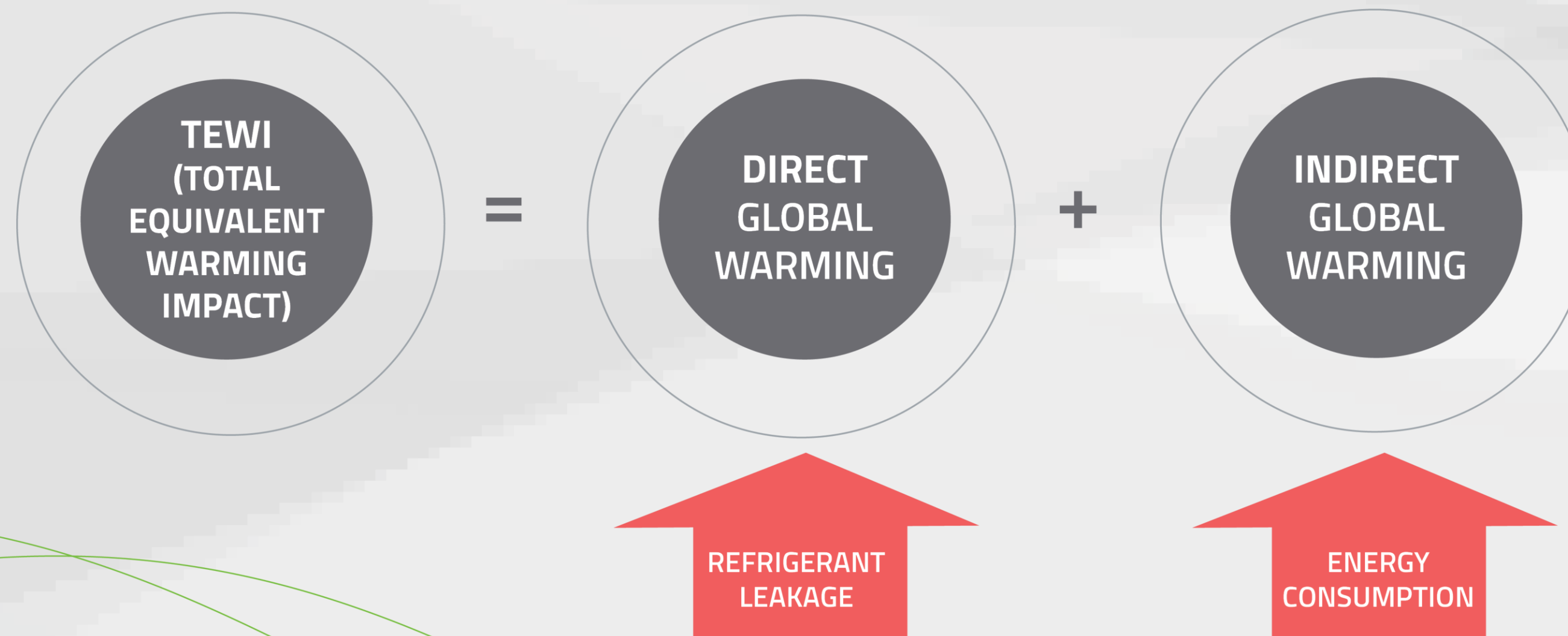
Refrigeration + Air Conditioning integration in Supermarkets.
F-GAS compliance: low GWP & CO₂ refrigerants.

KEY ISSUES

- F-GAS 517/2004 COMPLIANCE
- OPTIMIZED REFRIGERANT
- FLUORINE BASED TAX 16/2013
- EASY INSTALLATION
- LOW ENVIRONMENTAL IMPACT (low TEWI index)
- COST OF THE INSTALLATION INVESTMENT

ENERGY EFFICIENCY TIPS

- FLOATING CONDENSATION
- HEAT RECOVERY
- MT SUB-COOLED LIQUID
- FREE COOLING + AMBIENT CO₂
- ADAPTIVE PERFORMANCE: ACCORDING TO THE REGIMEN
- INTEGRATED CONTROL
- EASY AFTER MARKET: STANDARD COMPONENTS



REFRIGERANT OPTIONS

(MT) R-513A // R-450A
 (LT) R-290

a.

< 800 m² surfaces
 FREE F - GAS REGULATION:
 < 40 kW
 < 2500 GWP

C.

R-513A (MT/HT) + CO₂ (LT)

< 2.000 m² surfaces
 STUDY CASE
 FREE F - GAS REGULATION

b.

R-744 // CO₂ // R-290

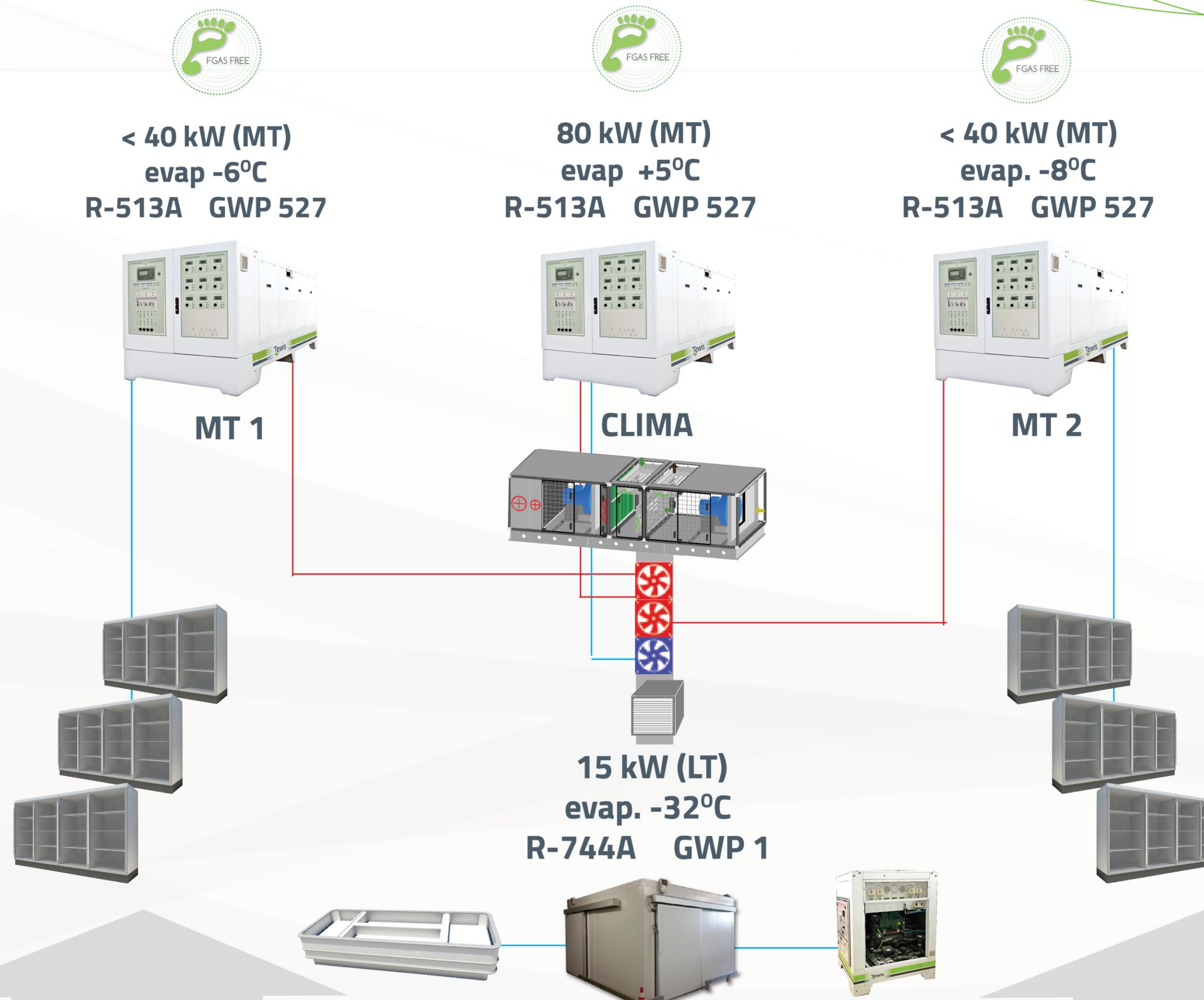
< 10.000 m² surfaces
 FREE F - GAS REGULATION:
 < 150 GWP

F-GAS

TEWI= DI + ID

CASE STUDY: ALDI DOS HERMANAS, SEVILLA (INSTALLATION BY FRIEX)

WORK FLOW INTEGRATION REFRIGERATION, CLIMATIZATION & FREEZE



NEXT PROJECT IN 2017 ALL CO₂ SOLUTION

COMPARISON 2 ALDI SUPERMARKETS WITH SIMILAR CONDITIONS

2 SOLUTIONS COLD/CLIMATIZATION/FREEZE

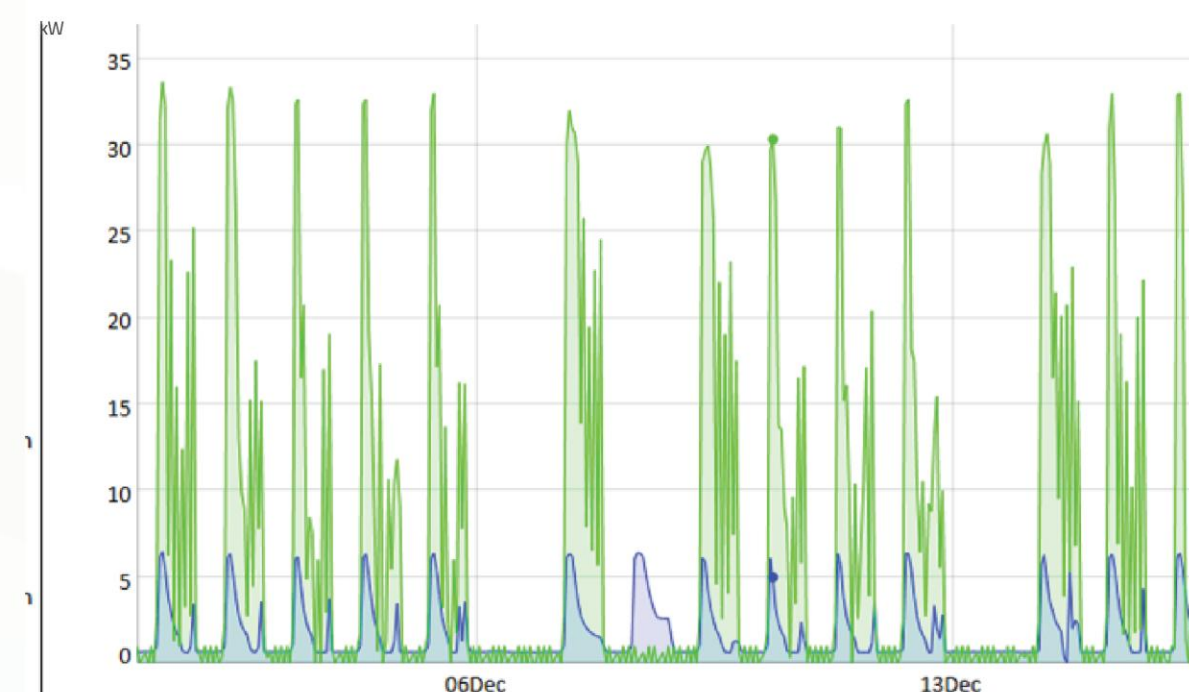
The Tewis company's market research and analysis show this modernization trend in refrigeration plants, the suitability of the refrigerant (low GWP and CO2) as well as integrated refrigeration and air conditioning systems to achieve the objectives of efficiency, energy savings and optimal management. The latest supermarket for the Aldi chain in Dos Hermanas, Seville, is a benchmark example of this trend.

**ENERGY
SAVINGS**

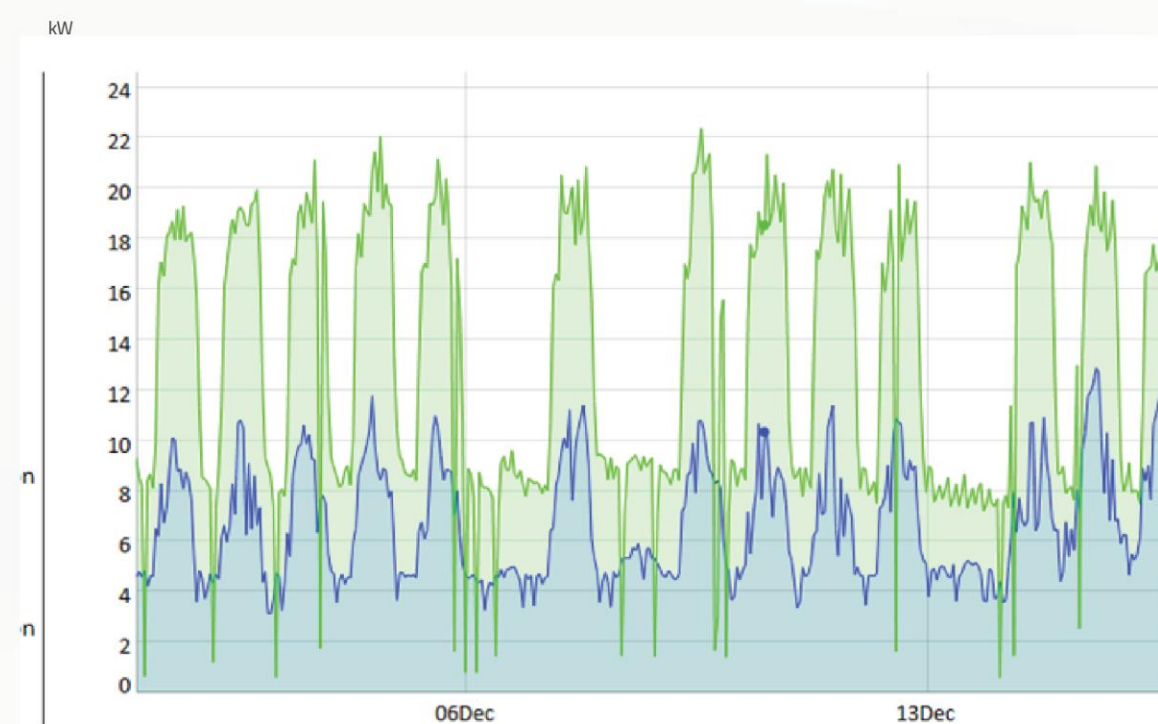
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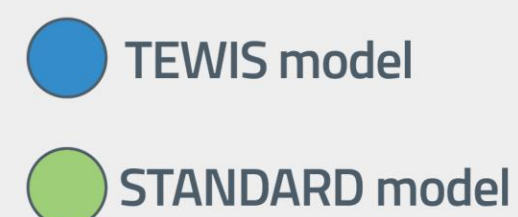
CLIMATIZATION CONSUMPTION



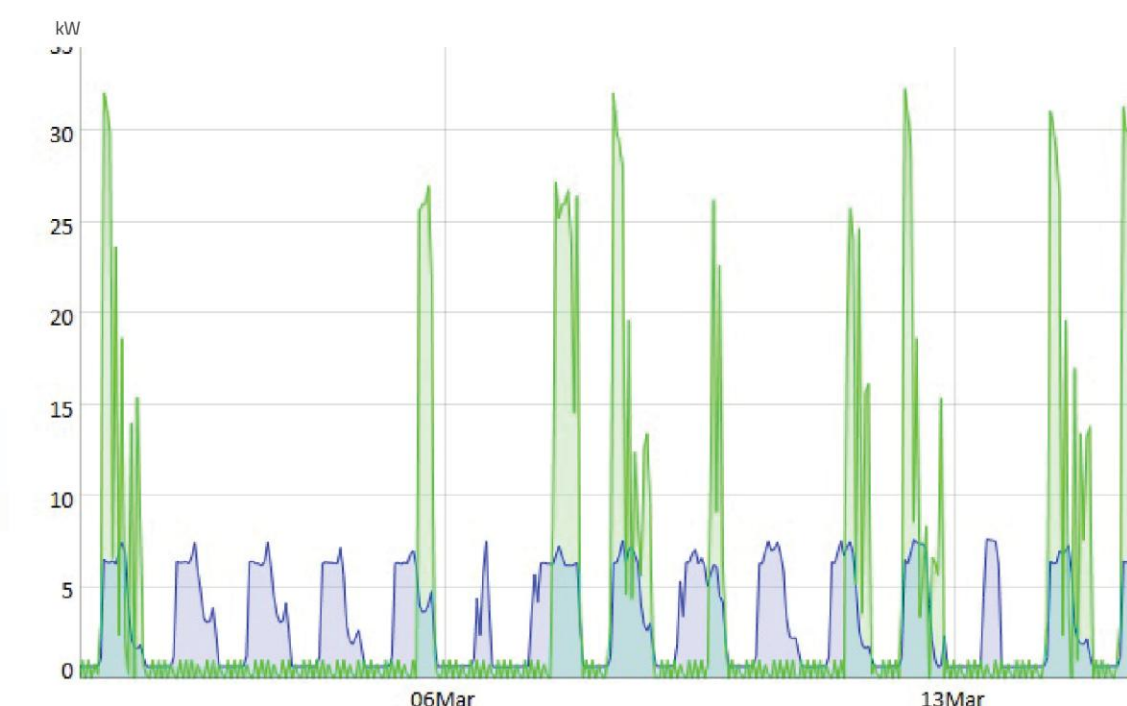
COOLING CONSUMPTION



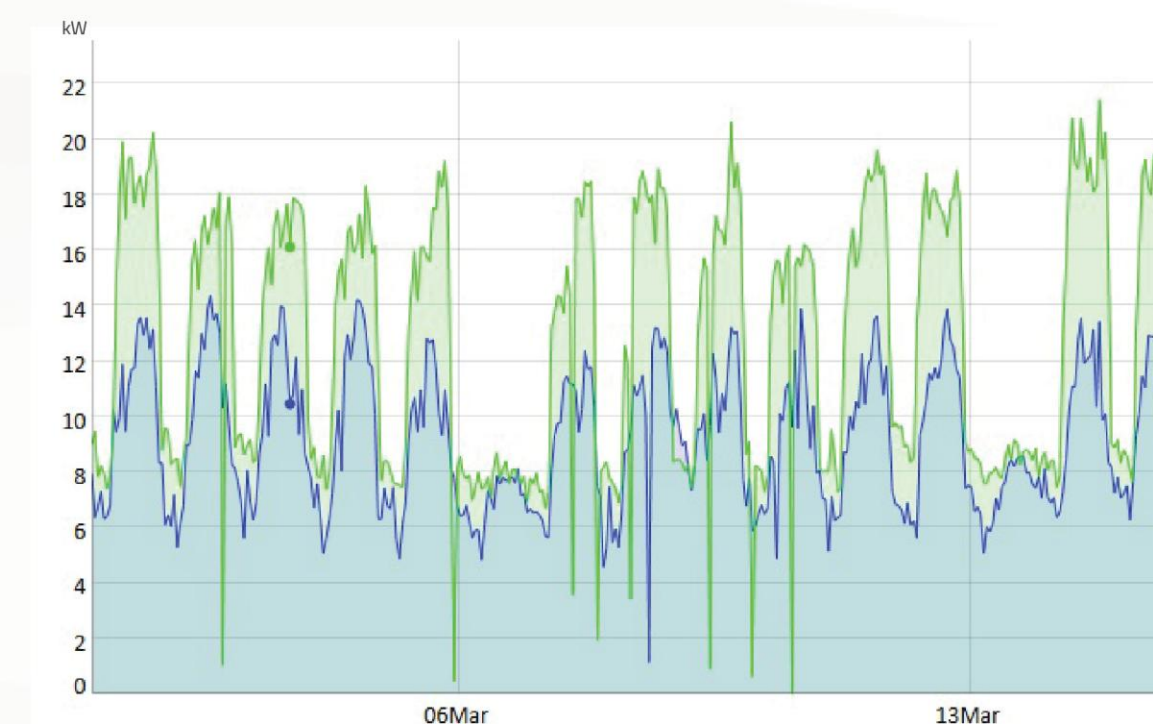
Time frame: 1-16 dec. 2015



CLIMATIZATION CONSUMPTION




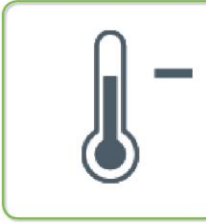












COOLING CONSUMPTION



Time frame: 1-16 march 2016

CENTRALIZED CONTROL AND REGULATION OF FACILITIES

APPS

 Positive cooling rack	 Negative cooling rack	 Compact rack	 Domotics
 Clime	 AHUs	 Monitorization	 Web access
 Maintenance	 F-GAS	 Energy	 Temperature area control
 Clime area control	 Cold-Clime	<p>Accessed directly to the facility applications using this custom control dashboard. It includes whole services of refrigeration, air conditioning and control.</p>	

A COMPLETE SUPERMARKET CONTROL, ONE DASHBOARD



Tewis
 CUSTOMIZED TO YOUR INSTALLATION

CARRIED OUT PROJECTS

COLD/ CLIMATIZATION

+700

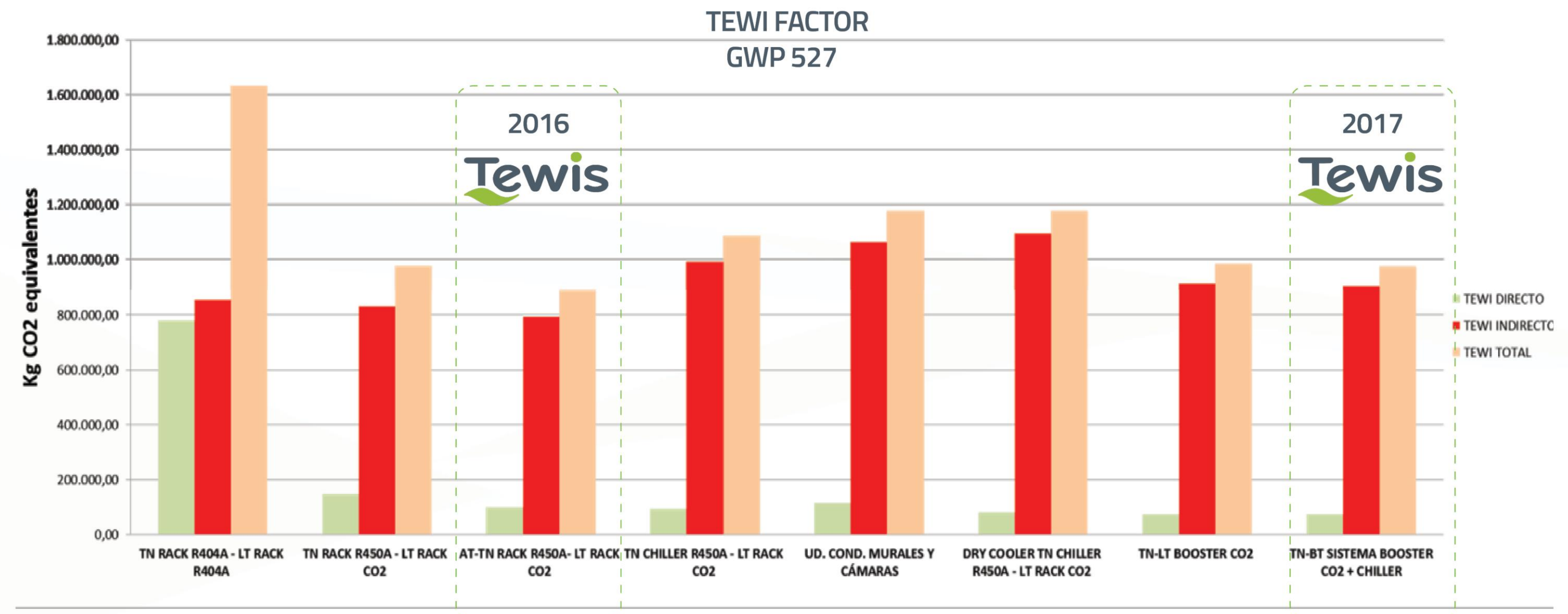
CASCADE SYSTEMS

+350

MONITORIZED FACILITIES

+5.000

WARM CLIMATES



Supermarkets <2000 m2 sales room



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Thank you very much!