



Business Case for
Natural Refrigerants

11-12/04/2018 – Beijing



Efficiency with simplicity

Natural refrigerant solutions from
Eliwell by Schneider Electric



Excellence in Refrigeration and Air Conditioning systems

From smart devices through to big data, we provide our customers with services, systems and technology to:



Reduce energy
consumed



Reduce cost per
kWh



Reduce CO₂
footprints



Reduce operating
expenditures



Realize
measurable efficiency

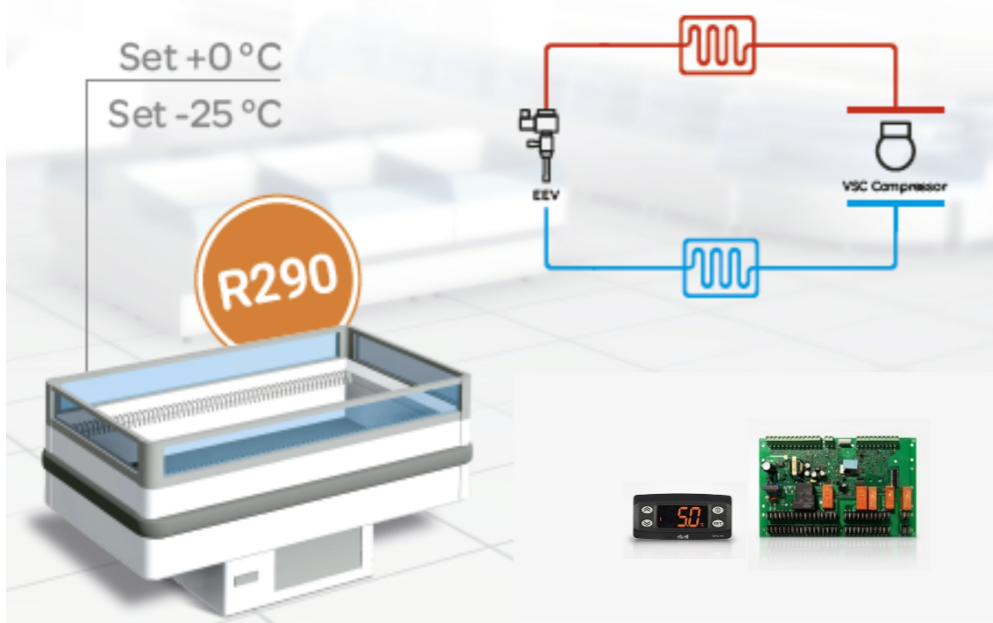


Produce energy
locally across the
grid

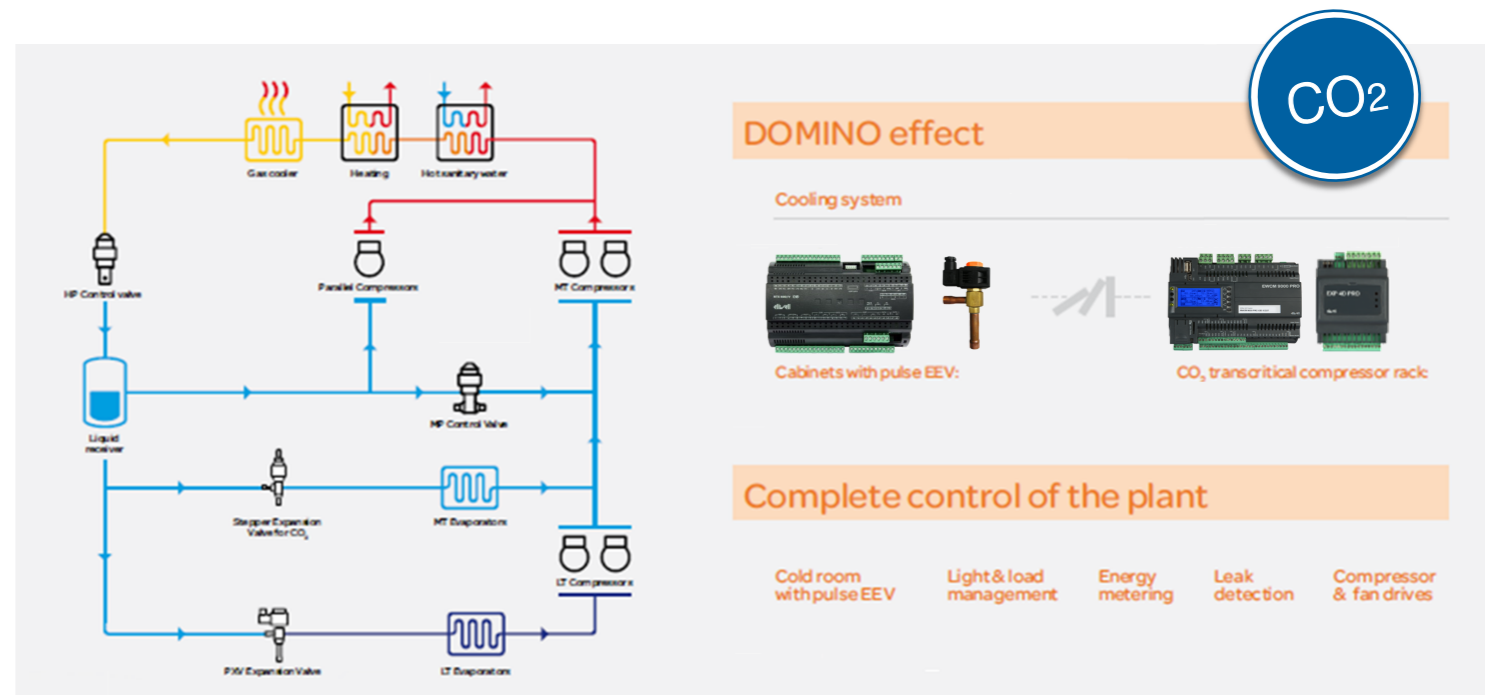
Eliwell: efficiency with simplicity

- **EWPlus EO** standard controllers for R290 refrigerators
- **RTN** high efficiency controllers for R290 plug-in cabinets
- **DOMINO** CO₂ transcritical solution for supermarkets

Flexible as a double circuit with a single circuit



DOMINO: CO₂ efficiency without ejector



Schneider Electric

The Global Specialist in Energy Management and Automation

€24.7 billion

FY 2016 revenues

~5%

of FY revenues devoted to R&D

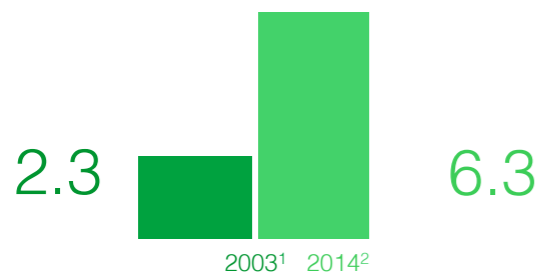
160,000+

people in 100+ countries

North America

33,700 Employees³

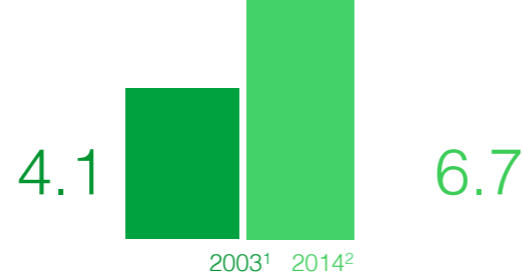
38 Factories



Western Europe

47,600 Employees³

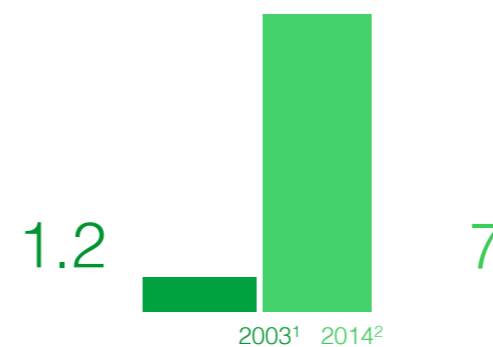
92 Factories



Asia Pacific

61,500 Employees³
Including JV

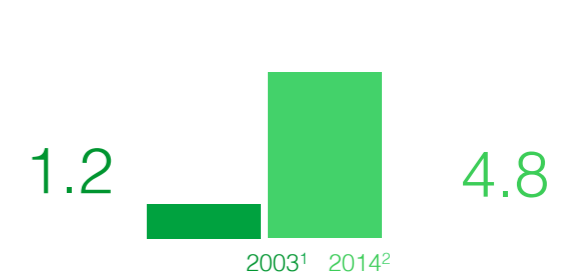
77 Factories
Including JV



Rest of the World

34,100 Employees³

38 Factories



1: Published figures in billion € restated to reflect country-market view;
 2: Billion € pro-forma basis including LTM Sep 2014 revenue for Invensys
 3: Including Invensys, excluding Delixi and Fuji

Organization in China

Application design and support

- Schneider-Electric commercial organization with
- 20 dedicated people for HVAC-R
- Application Development Engineers to support localization
- Widest control offer range, from contactors to BMS

Life Is On



Refrigeration expertise in Italy

- 37 engineers designing HVAC-R controls and systems
- Refrigeration CO2 test laboratory

Life Is On



Partnership for CO₂ transcritical in China

- First **CO₂ supermarket by Panasonic**
- Compressor rack presented at CRH2018
- Installation planned for June 2018

Life Is On

eliwell
by Schneider Electric

&

Panasonic

- **Eliwell DOMINO** CO₂ solution
 - Ease of system design
 - Training & support from Europe
 - Ease of installation and maintenance
 - Optimal energy efficiency

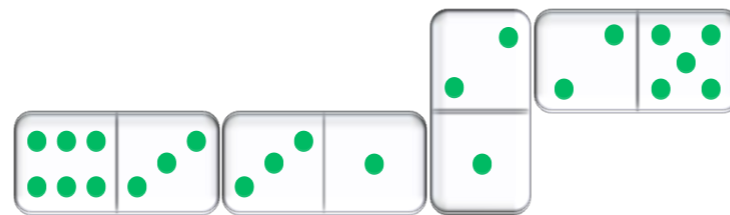


Eliwell DOMINO solution

Simplicity boosts opportunity for efficient CO₂ solutions

- Pulse EEV drives 4K superheat with 2 parameters setting
- Booster or parallel compression CO₂ architectures
- Medium temperature circuit suction pressure fixed up to 32 bar
- Evaporation and rack controls performs independently
- Up to 15% higher efficiency vs traditional booster

Adaptive low superheat RTX 600 /V DOMINO PXV



CO₂ transcritical Rack EWCM 9000 PRO DOMINO



OPPORTUNITIES AND CHALLENGES IN CHINA

- ✓ China is rapidly adopting natural refrigerant solutions
 - ✓ Small and large refrigerated warehouse are developing
 - ✓ CO2 to address smaller applications: condensing units
-
- Natural refrigerants introduces complex technologies
 - Training and support on new technologies is key

Eliwell: efficiency with simplicity at all equators

- DOMINO CO2 transcritical solution for lower equators
- More space for R290 HVAC & Refrigeration solution
- HVAC & Refrigeration control integration
- Efficiency by building management system integration
- Cloud maintenance simplify new technology adoption





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Thank you very much!

