



 **ATMO**
sphere
EUROPE
solutions for europe
natural refrigerants
16-17 March 2015 in Brussels

SANDEN Europe Market trends session

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July, 30th 1943

Foundation

> 2.3 b.€ in 2013
(62%)

Turnover
(international)

54 sites
in 23 countries

Close to
customers

25%

Automotive AC
market share

30%
Vending
machines
market share

Since the 60's
Thermal Comfort
Division

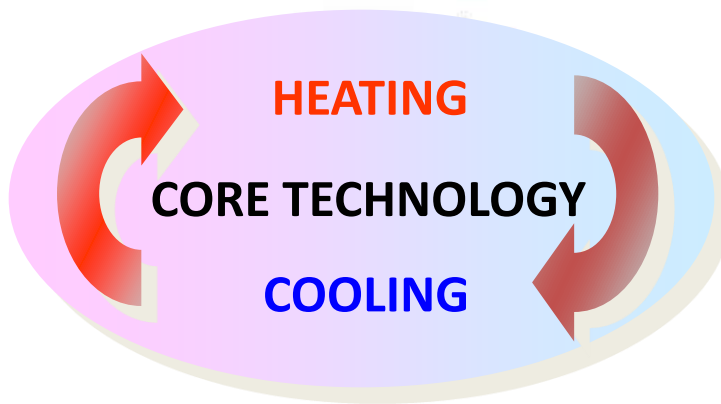
20 000
Employees
(w. JV)

1 out of 7
OECD awarded
green plants





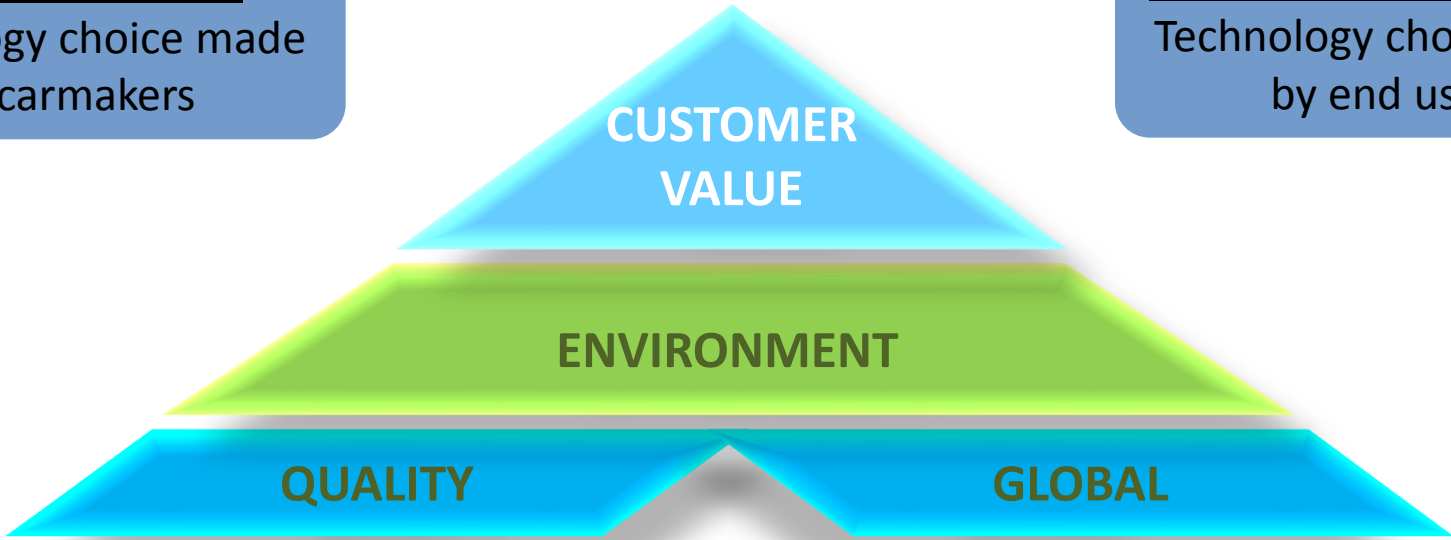
AUTOMOTIVE A/C
Technology choice made
by carmakers



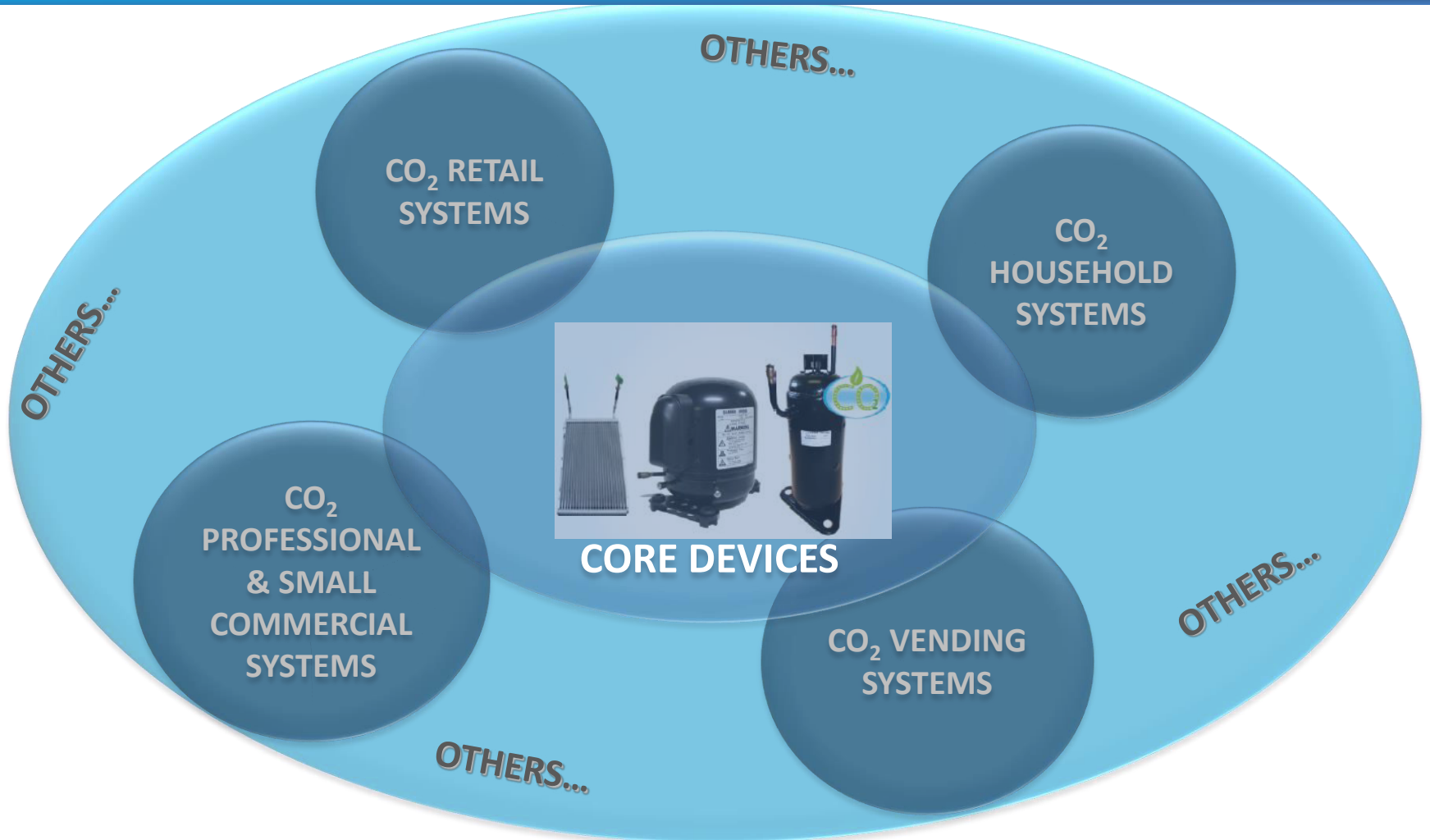
Components and systems <25kW



OTHERS - THERMAL MGT
Technology choice made
by end users



CONVICTION!!!



“A NEW COMER WITH A NEW APPROACH TO TECHNOLOGY”
**SANDEN wants to drive market change by
generating customers’ value based on unique CO₂ technologies**

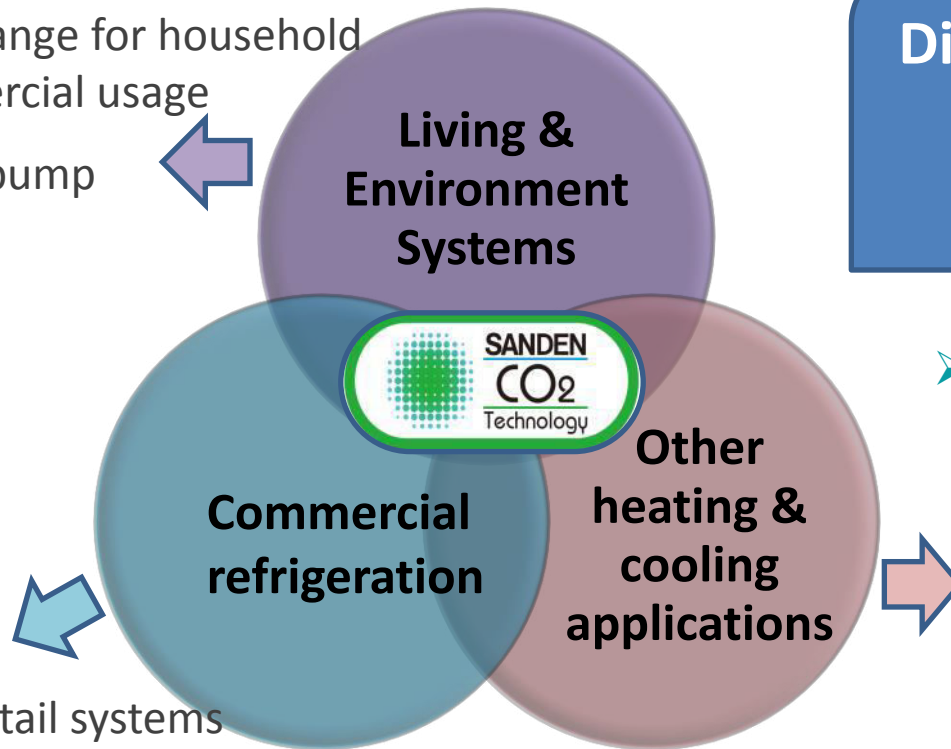
New entity of the SANDEN Corporation

- ❑ **New branch** of SANDEN International Europe Ltd
- ❑ **2 main functions:**
Sales & Marketing
Adv. Products Management
- ❑ 9 employees today,
18 forecasted in 2016
- ❑ **Territories:**
Europe, Middle-East and Africa
- ❑ On duty since July, 15th 2014
- ❑ Located in **Rennes** (France) in a Positive Energy building



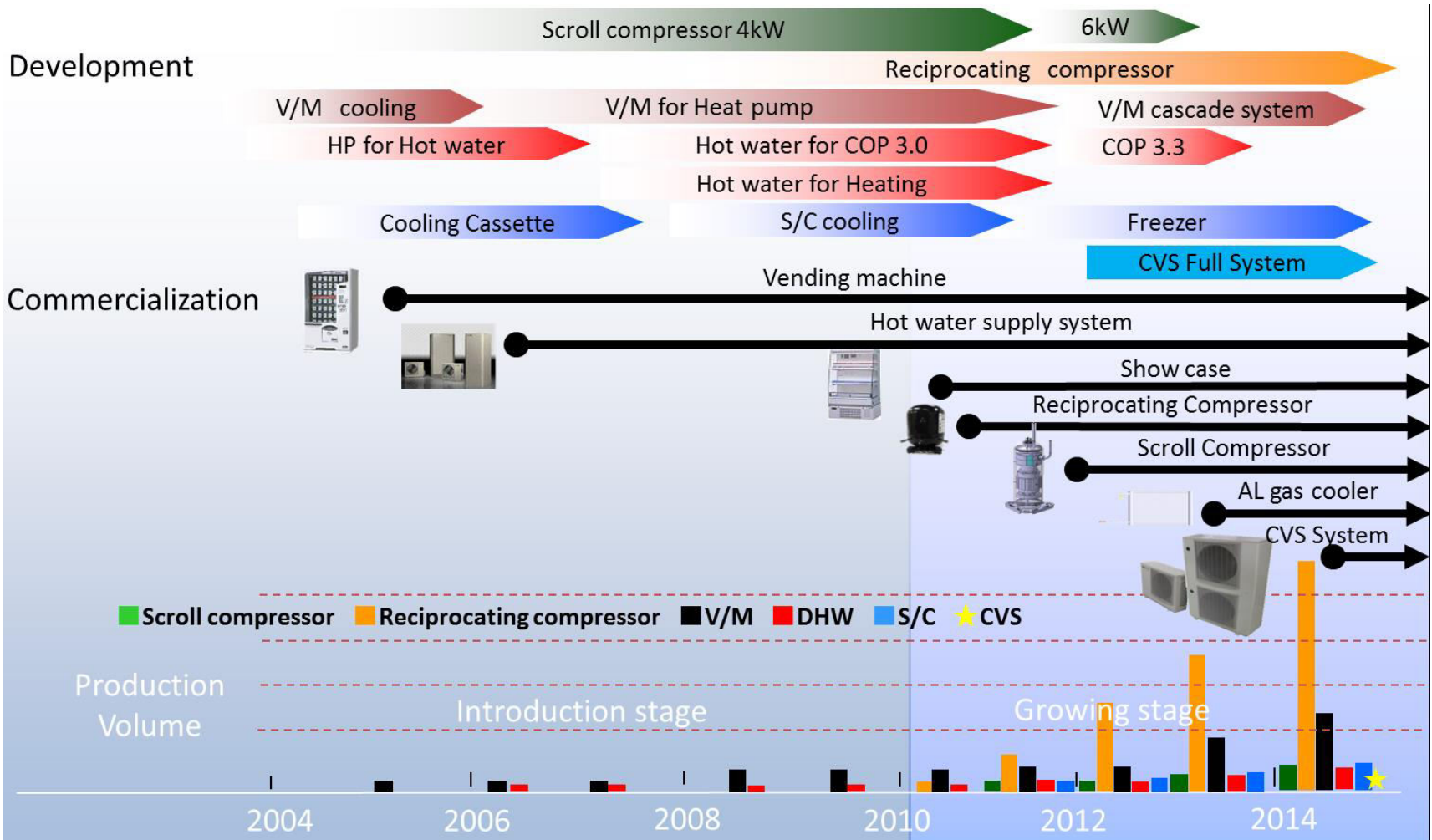
The CO₂ technology as our main mission

- Boosting sales of our current heat pump products range for household and small commercial usage
- Selling CO₂ heat pump modules



**Distribute widely
our CO₂
Technology**

- Entering in the retail systems business, with a 100% CO₂ offer for both cooling and freezing
- Target: stores up to 1000m² (convenient stores and city markets)
- Development of efficient CO₂ systems, adapted to various types of applications (low to medium capacities, up to 25 kW)
- Some examples: small cooling units for industrial usage, cold food chain or medical equipments, home appliances...



KEY SELLING POINTS: QUALITY / PERFORMANCES / COST
CO₂ REFRIGERANT IS JUST A BONUS...as of today



Delivering Excellence

SANDEN CO₂ SOLUTIONS

the best combination of service, quality and ecology



SPACE HEATING and DHW HEAT PUMPS



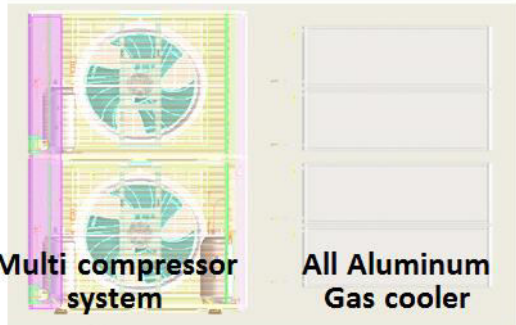
VENDING MACHINES



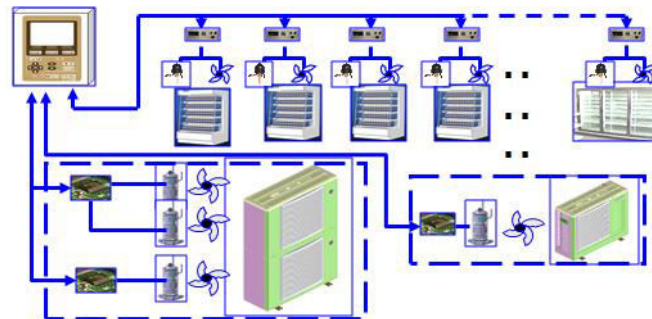
CO₂ TECHNOLOGY COMPONENTS

Various applications of CO₂
Exchangers, compressors...

① CO₂ Cooling module



③ Multi control system



② CO₂ Compressors

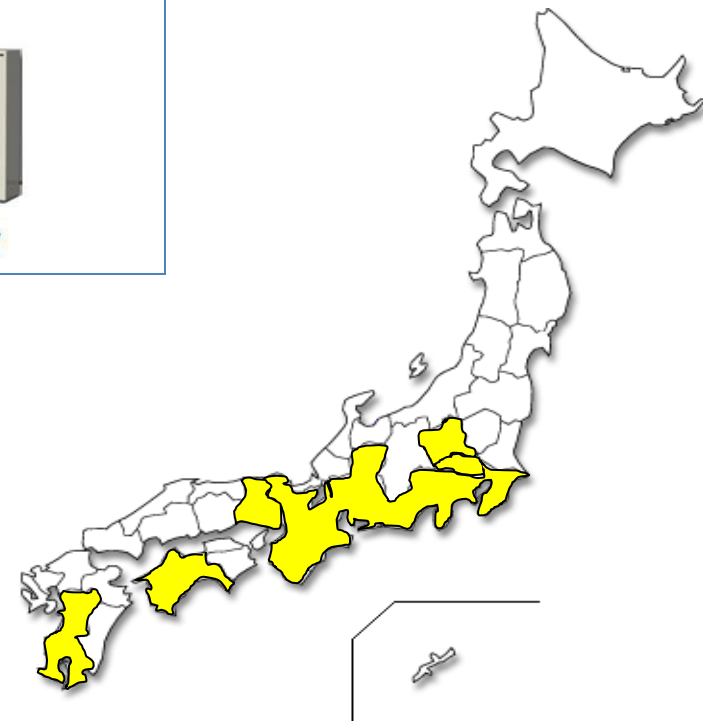


- High efficiency
- Low noise & vibration
- High reliability




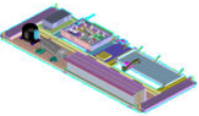
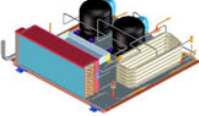
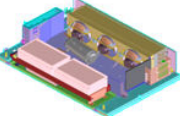
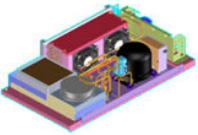
④ Line up



FY2014 Result
 → Half of Japan



. 1st phase of 70+ convenience style stores, launching drastic expansion!
. 100% SANDEN CO₂ equipment
. Average real life energy savings of 23%
 (vs up-to-date R404a systems)

Model	CDU1		CDU2	CDU3	CDU4	CDU5	CDU6
Image							
Installation	Remote	Remote	Remote	Plug in Top/ Bottom	Plug in Top/ Bottom	Plug in Top/ Bottom	Plug in Top/ Bottom
Compressor	DC variable speed Scroll compressor x3	DC variable speed Scroll compressor x3	DC variable speed Scroll compressor x1	DC variable speed Scroll compressor + DC Variable speed Reciprocating Compressor	DC Variable speed Reciprocating compressor X2 or AC single speed x2	DC variable speed Scroll compressor	DC Variable speed Reciprocating compressor or AC single speed

2015 Target
→ Expand globally



**We are responsible for bringing
top quality/performance/cost products to the market...**

...but we may use some help!

▪Eco-design Directive:

- indication about “natural refrigerant” on energy label?
- bonus for natural refrigerant?

▪F-Gas Regulation >> how to cover full market scope?

lots of “holes” identified (heat pumps for tumble driers / coolers for cabinet, server, ... / ...)

Our observation / question:

**AS AN EXPERT COMPANY, WE PROVIDE THE EXPECTED SOLUTIONS.
WE EXPECT TO GET MORE SUPPORTIVE AND CONSISTENT POLICIES!**



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Thank you very much!

