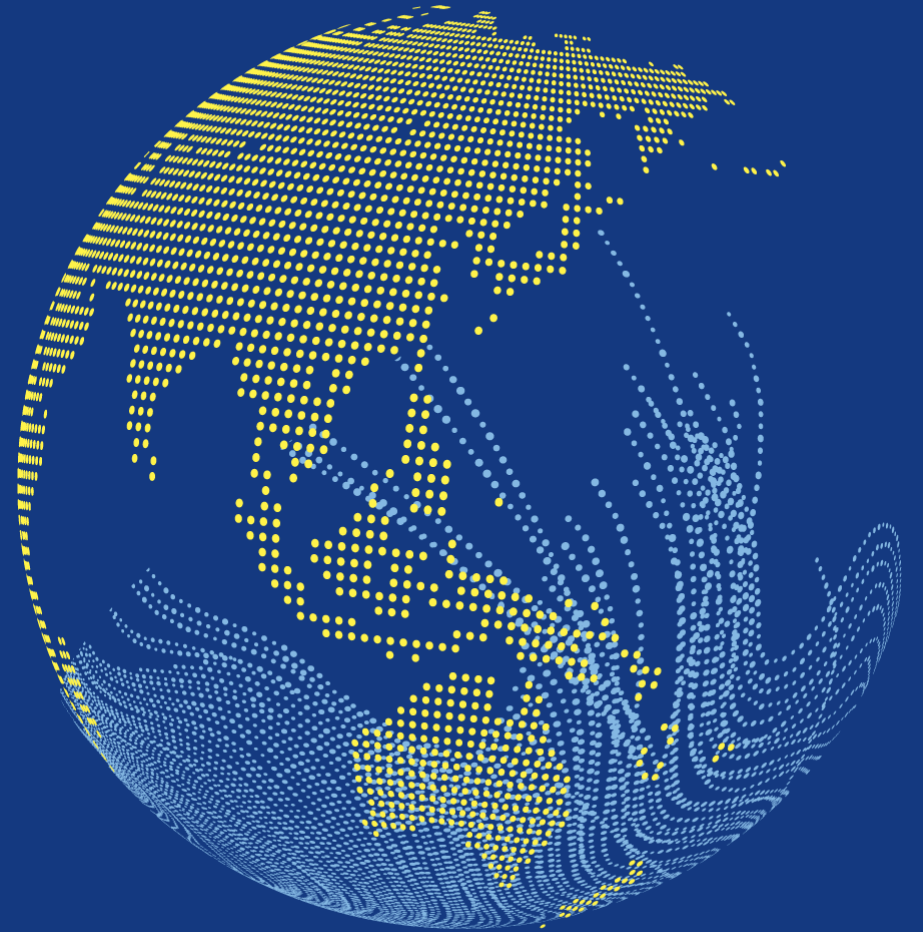




Business Case for
Natural Refrigerants



12/02/2019

TOKYO



Panasonic Coldchain Solutions

Atsuki Tsutsumi

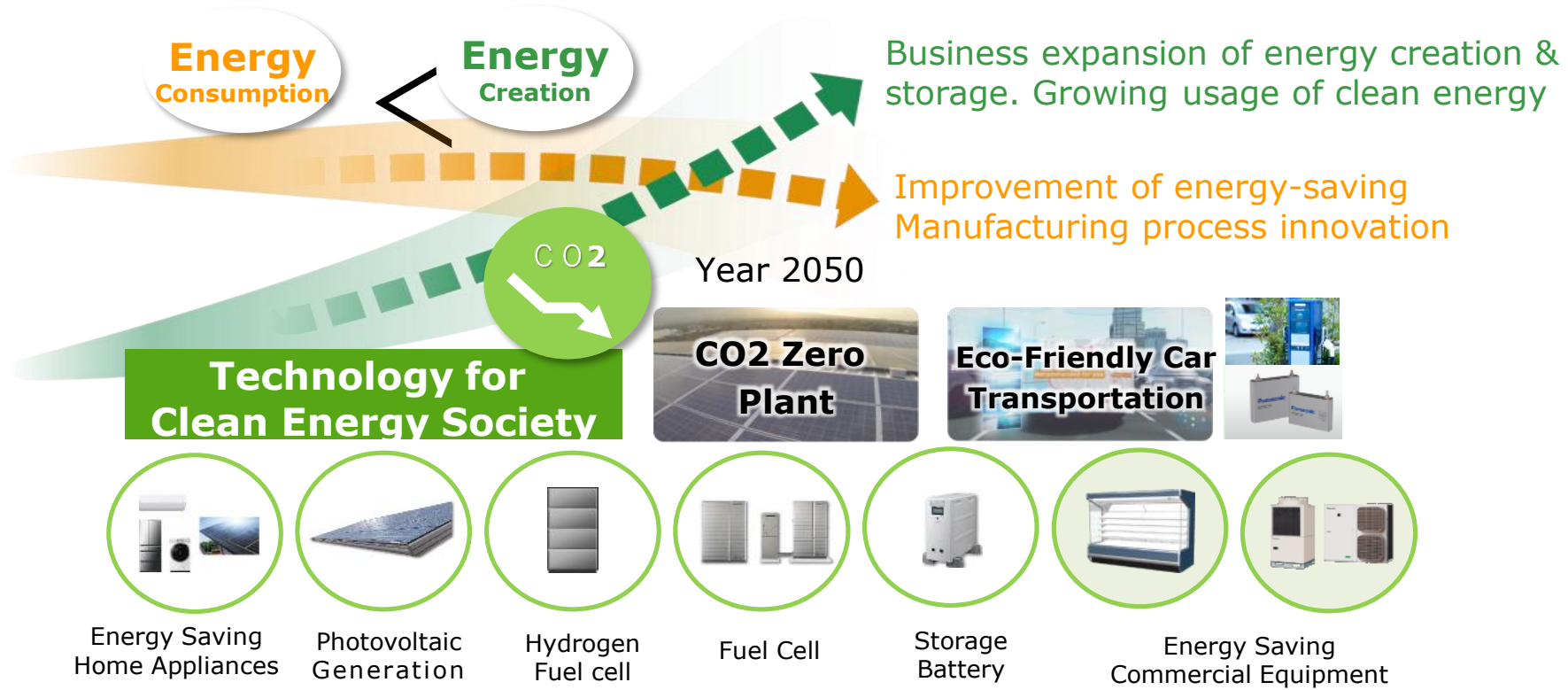
Director

Cold Chain Business Division, Appliance Company , Panasonic Corporation

12th February 2019

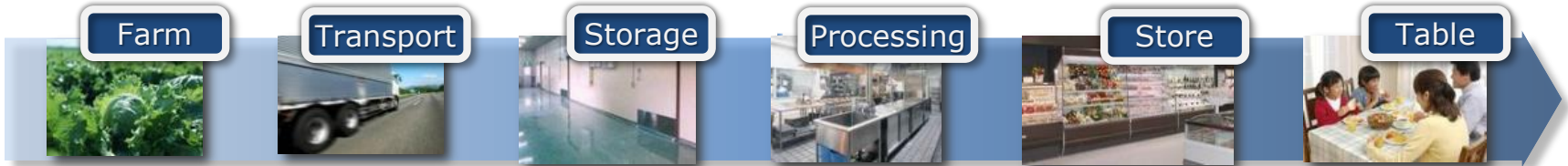
#GoNatRefs

Panasonic Environmental Vision 2050



Panasonic Coldchain Business

From Farm to Table, we support the safe Food retail



50 years experience in Commercial Refrigeration

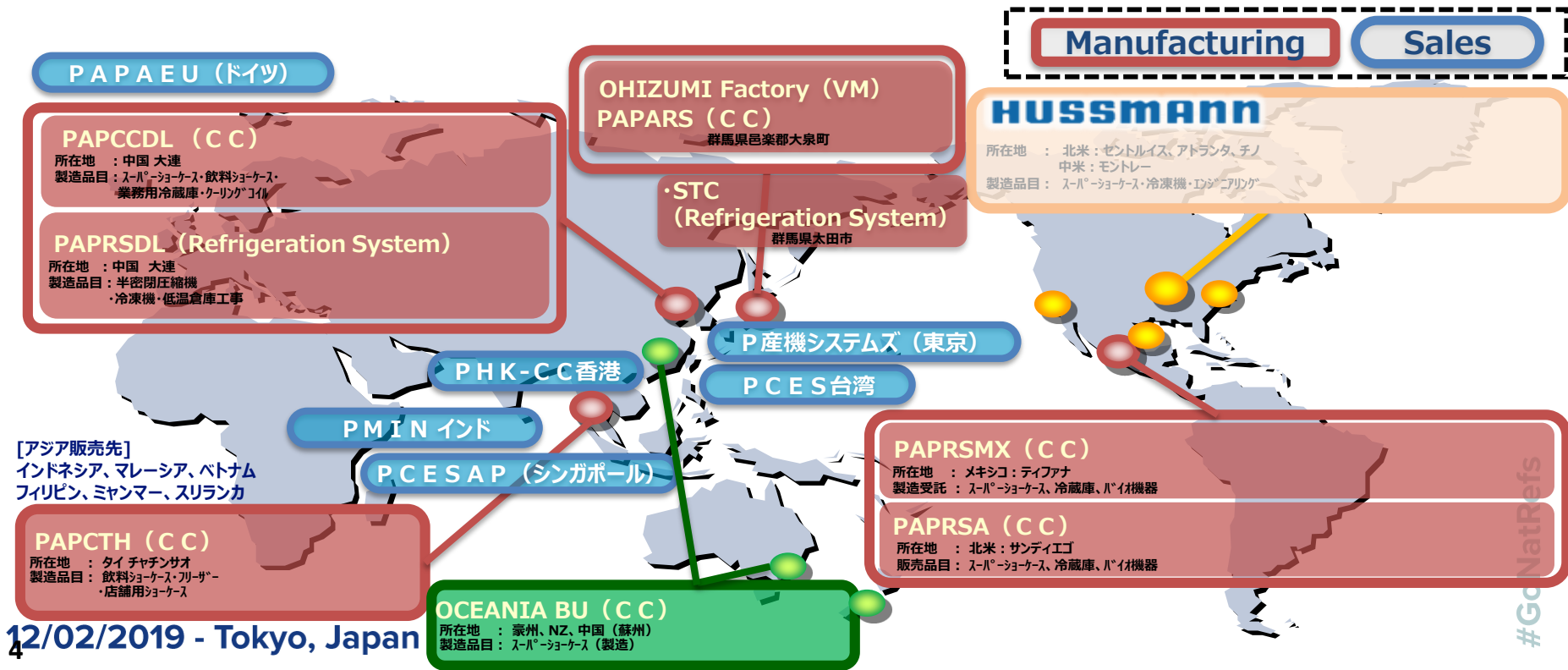
Product Category

- Refrigeration Systems
- Commercial fridge
- Ice Machine
- Cold room
- Rice cookers
- Microwaves
- Vending Machine
- Display case
- Dispenser

Synergy HUSMANN®

Market Share	Japan	China	Asia/Oceania	NA
	No. 1	No. 1	No. 1	No. 1

「Global Entity」 with Manufacturing & Sales (5), Manufacturing (5) , Sales (7)



Environment & Food Safety is essential



**Supermarkets
Convenience Stores**

**Kitchen
Restaurant**

**Food Delivery
Warehouse**

Japan

Europe/US
Oceania

China

Asia

Kigali 1st G

Labor Shortage → IOT·Ai Last 1 Mile

Small Format Expand



Noman
Store

Growth

Food Safety
(HACCP)



Growth of Fresh
Foods Industry



E-Commerce





“Natural Refrigerant Solution”

to help restore a beautiful Earth
for future generations.

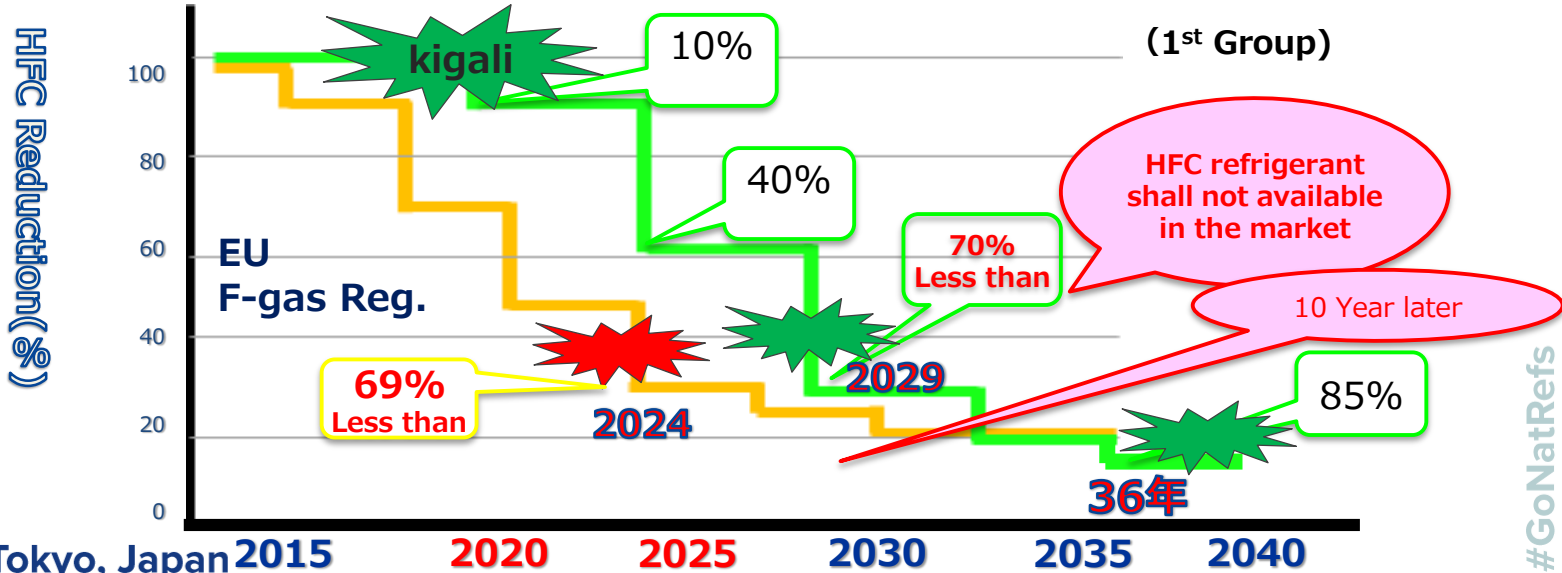
12/02/2019 - Tokyo, Japan

Kigali Agreement has Activated

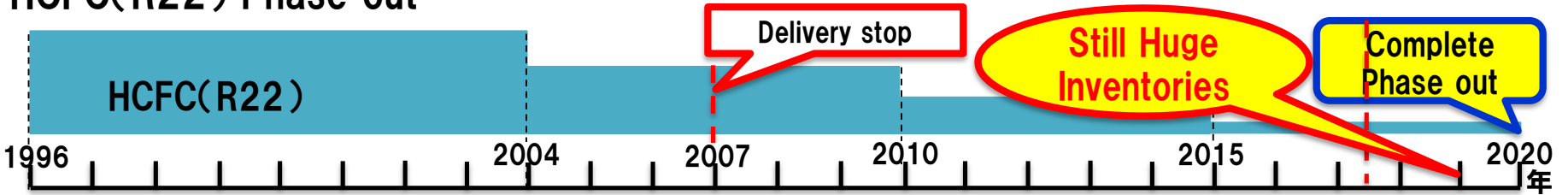
Kigali Activated in 195 countries

EU Severer F-Gas regulation
 ⇒ ▲69% by 2024 (vs 2015年)

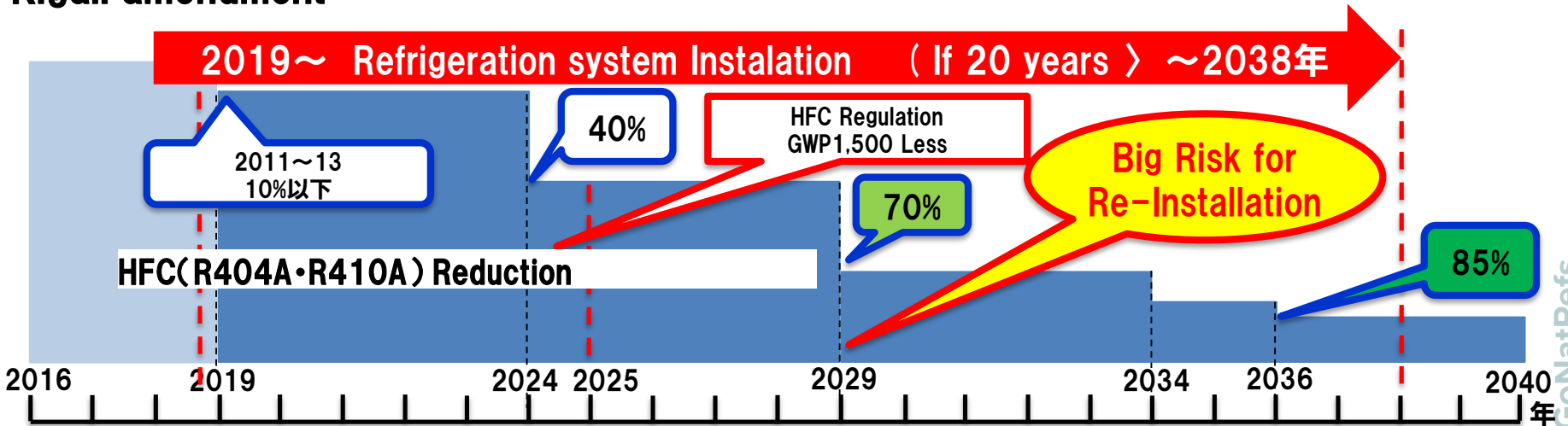
Japan New Stage from 2019
 ⇒ Less than ▲70% by 2029
 ▲less than 85% by 2036



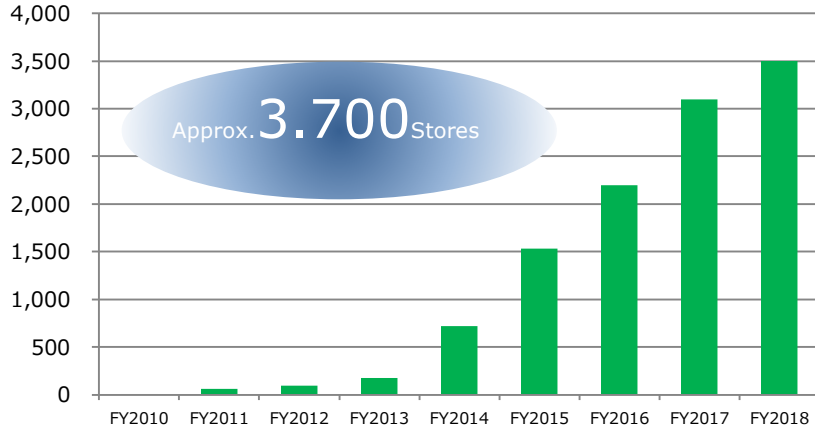
HCFC(R22) Phase out



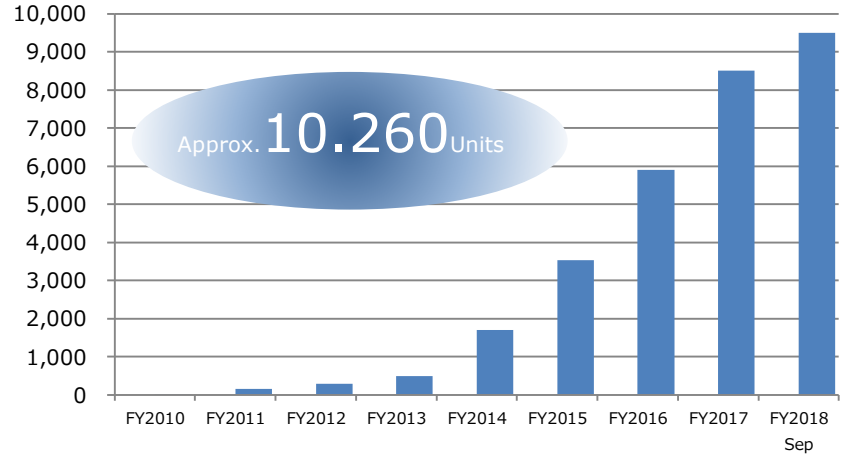
Kigali amendment



Cumulative number of Stores



Cumulative number of Units As of End of Dec 2018



We learned together with partners and succeeded so far.

12/02/2019 - Tokyo, Japan



Installation of CO2 system in Europe & Asia

Commercial installation started in Europe & Asia

Denmark
Sweden
Norway
Belgium







[test installation]
Iceland
Germany
Poland
Hungary
Spain
Swiss
England
Italy others



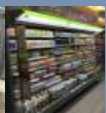
More than 250 Stores installed




Taiwan



Linkou Wenvi store
Jan. 2016 installation

China



METRO
3 stores installation
Apr, 2018



超市发
TC RACK installation
Jul, 2018





Malaysia



Malaysia, NRE support
"Multilateral fund
for the implemen-
-tation of
Montreal Protocol"
May, 2017 opened





Indonesia



13 stores installation





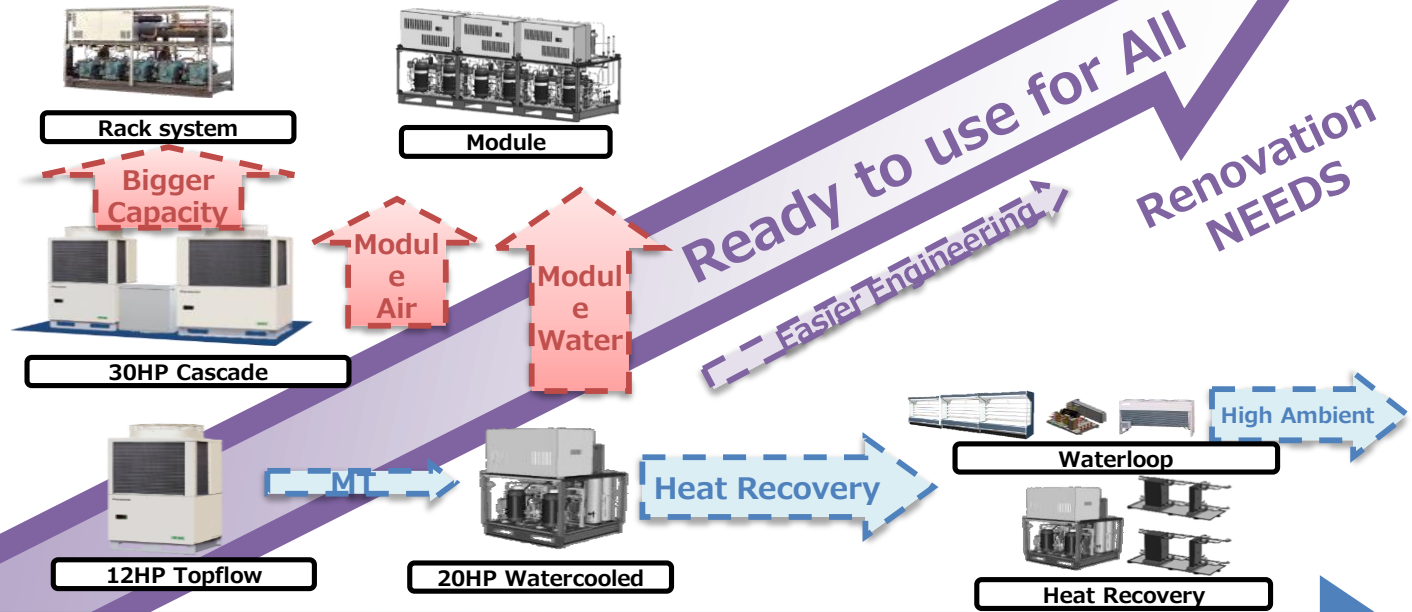


『 Bigger Capacity 』 X 『 Higher COP 』

User Expansion

- Factory W/House
- Super Market
- CVS

BIG Capacity



Refrigeration system

Total Energy Control

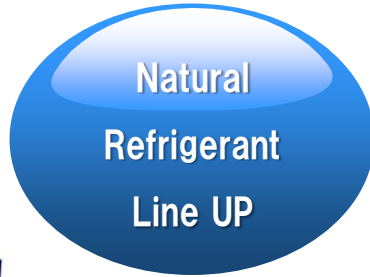
Value up

CO2 Display Split

BEFORE
272models 2014
651models 2015



Now
1117models



HC



CO2



FPW



FPS



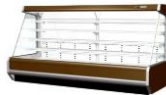
CSM



CVS



CPW



CPS



CPS-C/U



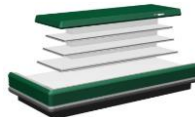
TVQ



CZR



FLD





“Natural Refrigerant Solution”

to help restore a beautiful Earth
for future generations.



**Further Collaboration
with All Stakeholders,
Governments,
Group Association,
Users Group, Suppliers
Media etc.**



Business Case for
Natural Refrigerants

**Thank you
for listening.**

