



ATMO  
**sphere**

business case

**natural refrigerants**

June 16 & 17, 2016 – Chicago

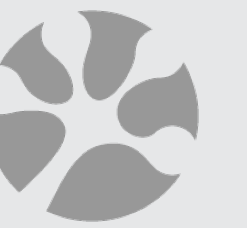




**Policy trends for natural refrigerants  
around the world**

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# PROGRESS TOWARDS GLOBAL HFC PHASE DOWN



in November 2015, countries **committed to working within the Montreal Protocol towards finding an agreement on global HFC phase down in 2016** (after 7 years of blocked discussions)

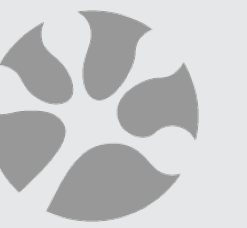
the first step in this process is to find **feasible solutions to remaining challenges in managing HFCs:**

- additional funding
- availability of alternatives
- relationship with UNFCCC
- exemptions for specific situations
- non-party trade provisions
- definition of low-GWP threshold = crucial for selection of alternatives





# PROGRESS TOWARDS GLOBAL HFC PHASE DOWN



## Progress in Geneva (April 2016)

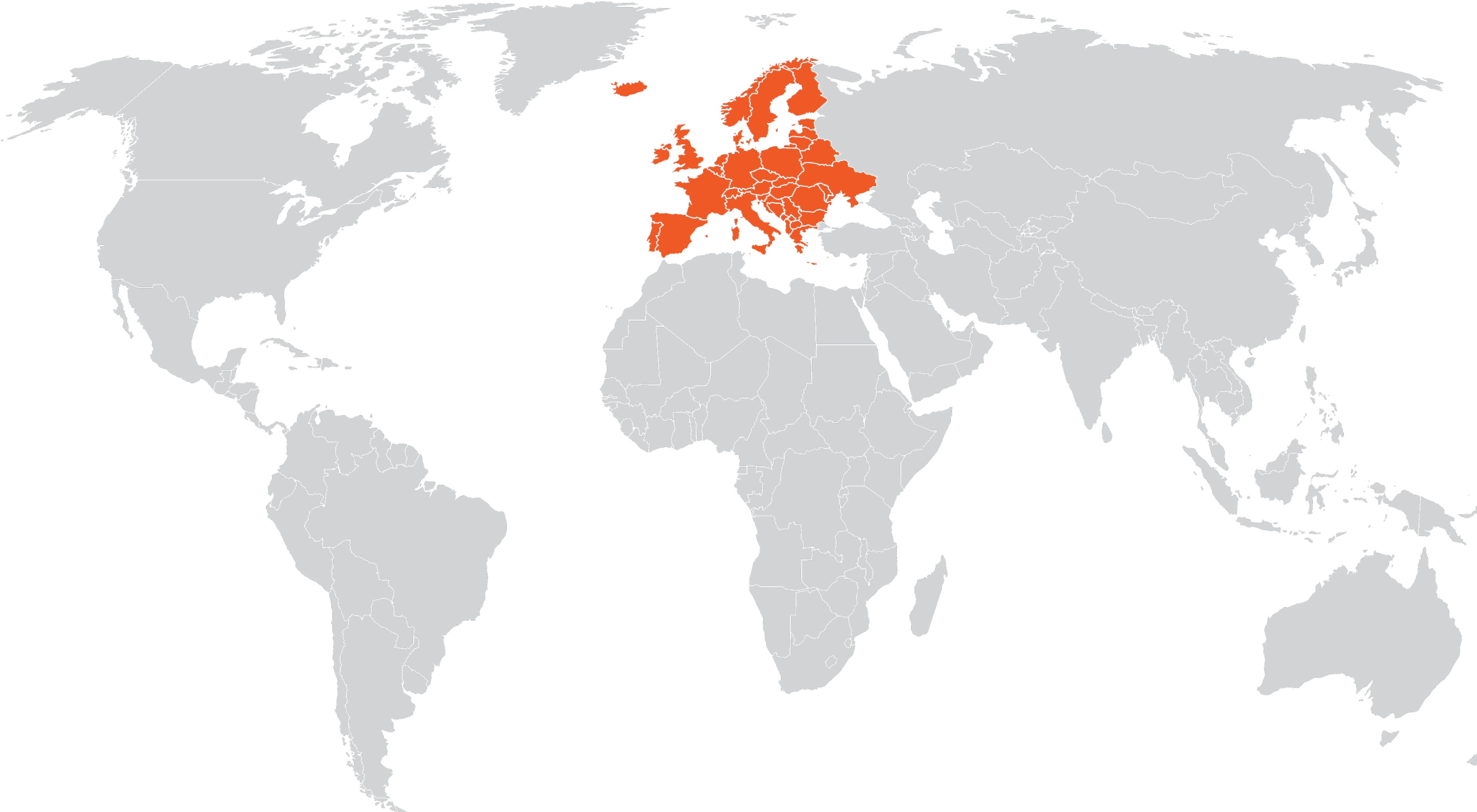
- countries started **addressing concrete challenges**
- tentative agreement on **4-year exemption from HFC phase-down in certain types of AC for countries with high ambient temperatures**
- TEAP presented a report with **80 alternatives, most of which are newly developed HFC blends**



**2016:** 4 meetings, including 2 extraordinary

- **April 2016**, Geneva, Switzerland
- **July 2016**, Vienna, Austria (2 meetings)
- **Oct 2016**, Kigali, Rwanda

# EUROPE: AMBITIOUS LEGISLATION DRIVES NATURALS

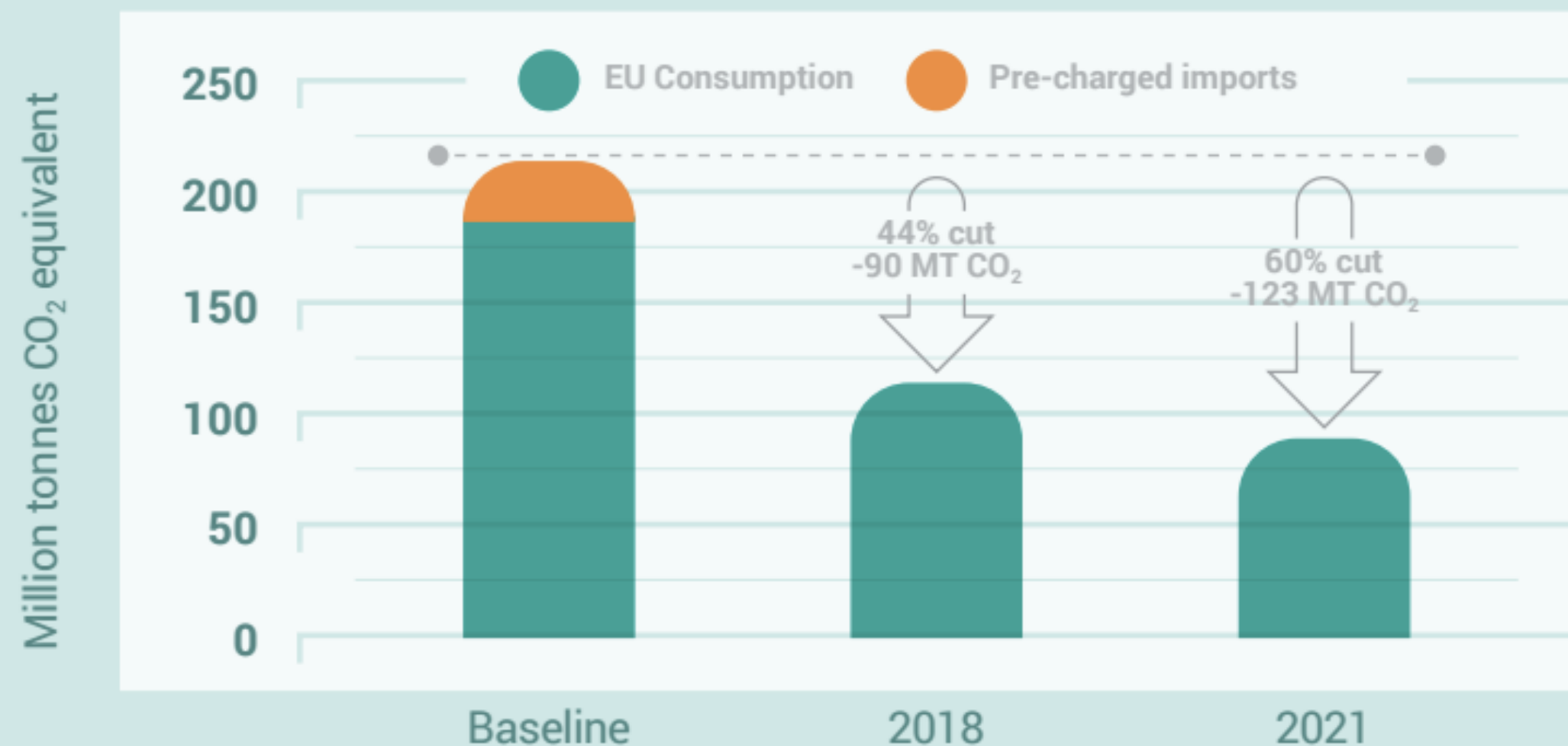






## ACTION IS REQUIRED URGENTLY

- Changing standards and legislation is a slow process
- But impact of EU HFC phase-down becomes very significant within 3 years
  - major cuts occur in 2018 and 2021



Source: Ricardo-AEA Ltd

average GWP of refrigerants to fall from 2000 today to 400 in 2030

2016: 7% HFC quota reduction =

HFC price increase announced:

↑ 15% for R404A and R507

10% for R410A, R134a, R407A and R407C

**the impact of phase down will become more significant in 2017 (pre-charged equipment included); 2018 and 2021**

**NO negative impact** on manufacturers & buyers of natural refrigerant-based equipment

# EU F-GAS REGULATION - ONGOING WORK



assessment of feasibility of the **ban on HFC (GWP > 150) in centralised commercial refrigeration by 2022**

investigation of **national codes, standards and legislation** in EU Member States that are a barrier to introduction of HFC alternatives

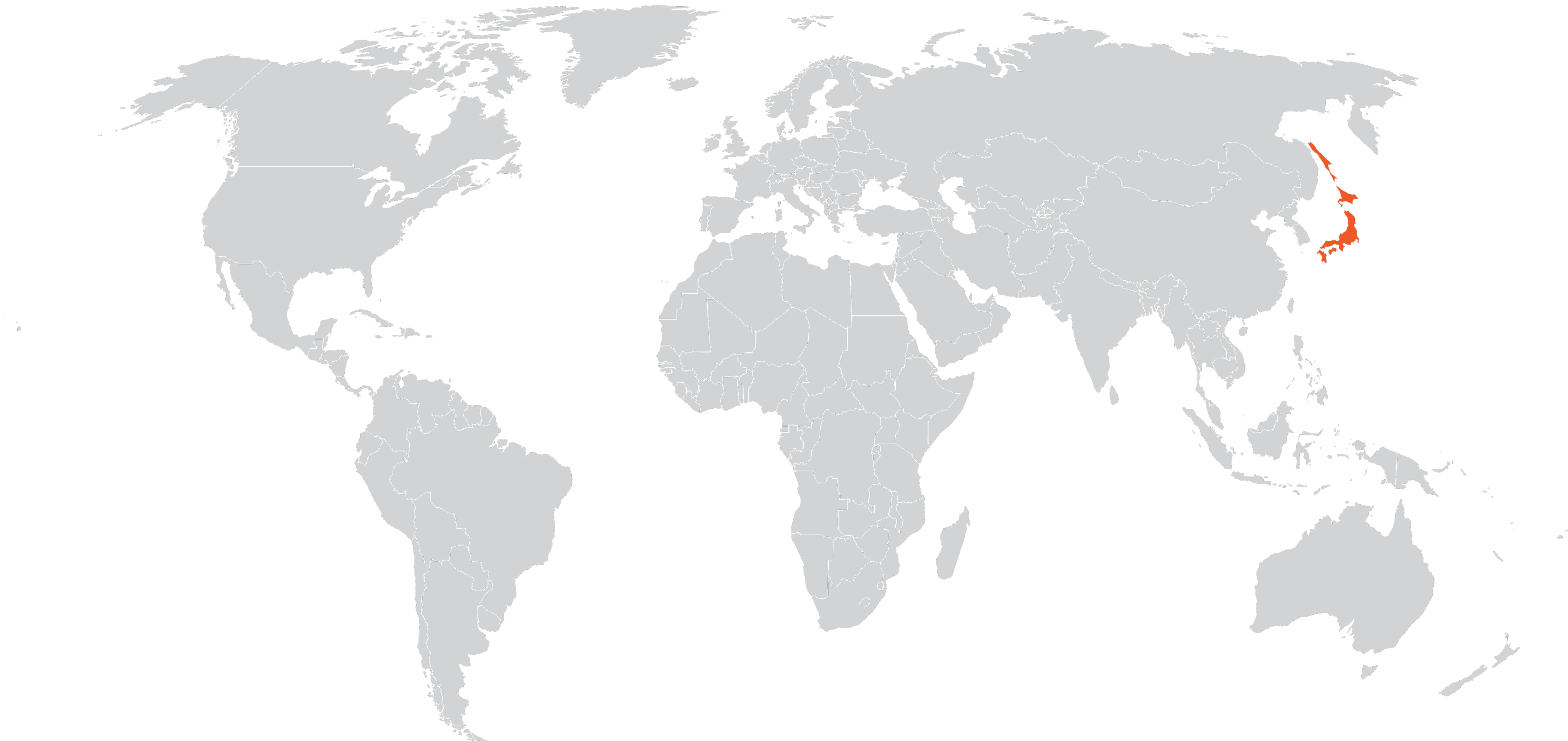
availability of **training on HFC alternatives**

**HFC quota allocation assessment** and possible introduction of **paid quota mechanism**





# JAPAN: A RAPIDLY ACCELERATING MARKET







## Effect of measures on HFC emissions reduction (preliminary calculation by MOE & METI)

	2010	2020	2030
BAU	17.3	40.2	48.1
<b>Promotion of low GWP alternatives</b>		▲3.9 ~ 6.6	▲22.1 ~ 27.3
<b>Containment from commercial equipment</b>		▲5.3 ~ 9.5	▲2.7 ~ 5.6
<b>Total reduction</b>		▲9.7 ~ 15.6	▲25.5 ~ 31.8

(unit = mil tCO<sub>2</sub>)

Source: Ministry of Environment (MOE)

- effective as of April 2015
- targets the **entire life cycle of f-gases**, from production to destruction
- **reduced f-gas leakage from commercial equipment:** periodical checks, maintenance, reporting etc.; proper refill and recovery; obligation of destruction
- **promotion of low-GWP / non f-gases alternatives for designated products**, incl. condensing units & refrigeration units > 1.5kW (target of average GWP 1500 by 2025)

# JAPAN: FINANCIAL SUPPORT FOR NR



Subsidy scheme encouraging end-users to purchase natural refrigerant-based equipment in:



## **Food retail** (1/3 of initial costs)

- 507 projects supported in 2015



## **Cold storage** (1/2 of initial costs)

- 53 projects supported in 2015

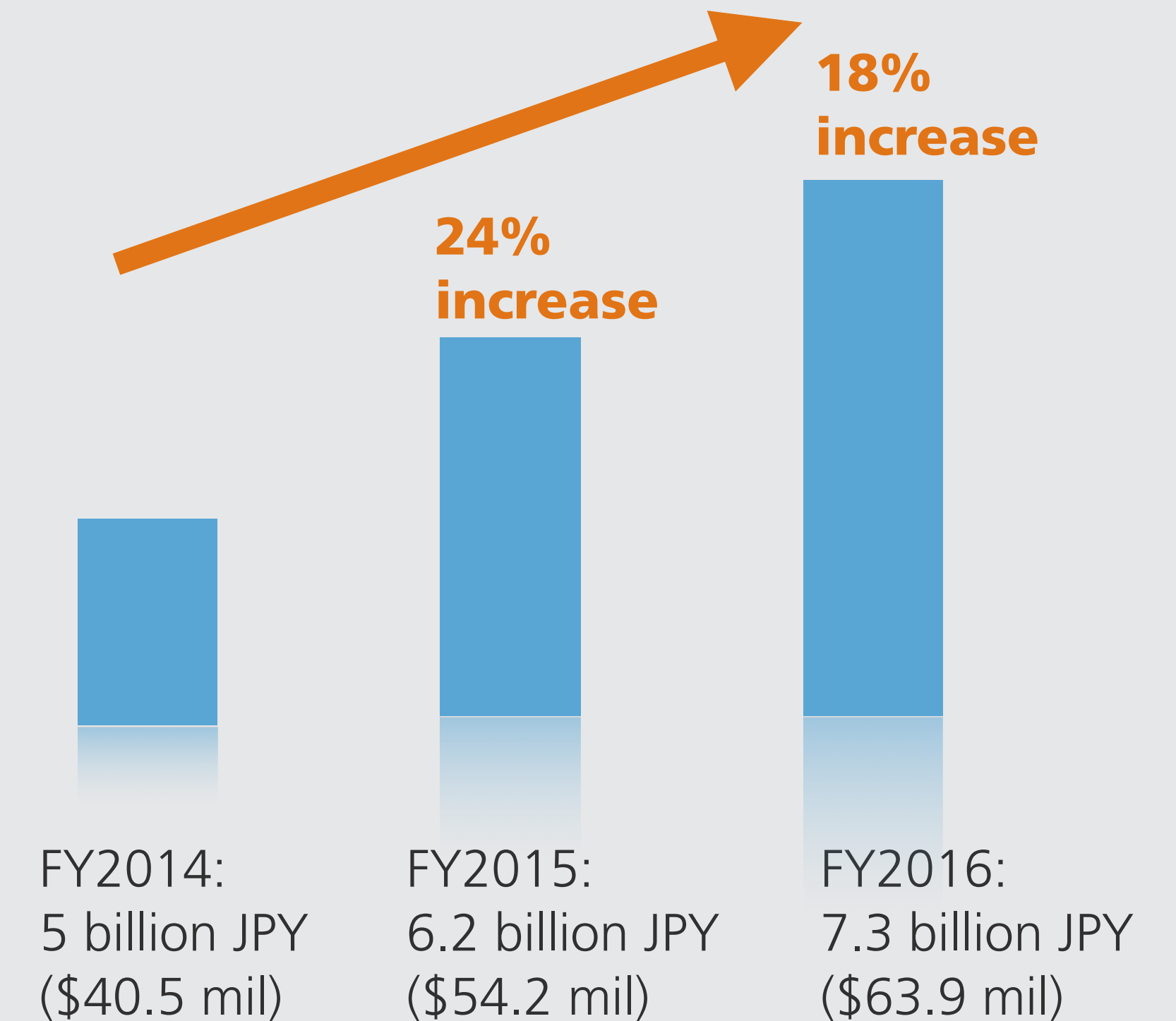


## **Food manufacturing** (1/3 of initial costs)

- 23 projects supported in 2015

**NEW in 2016:** chemical manufacturing, ice rinks

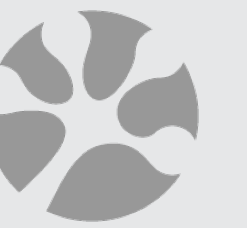
## **Accelerating market uptake**



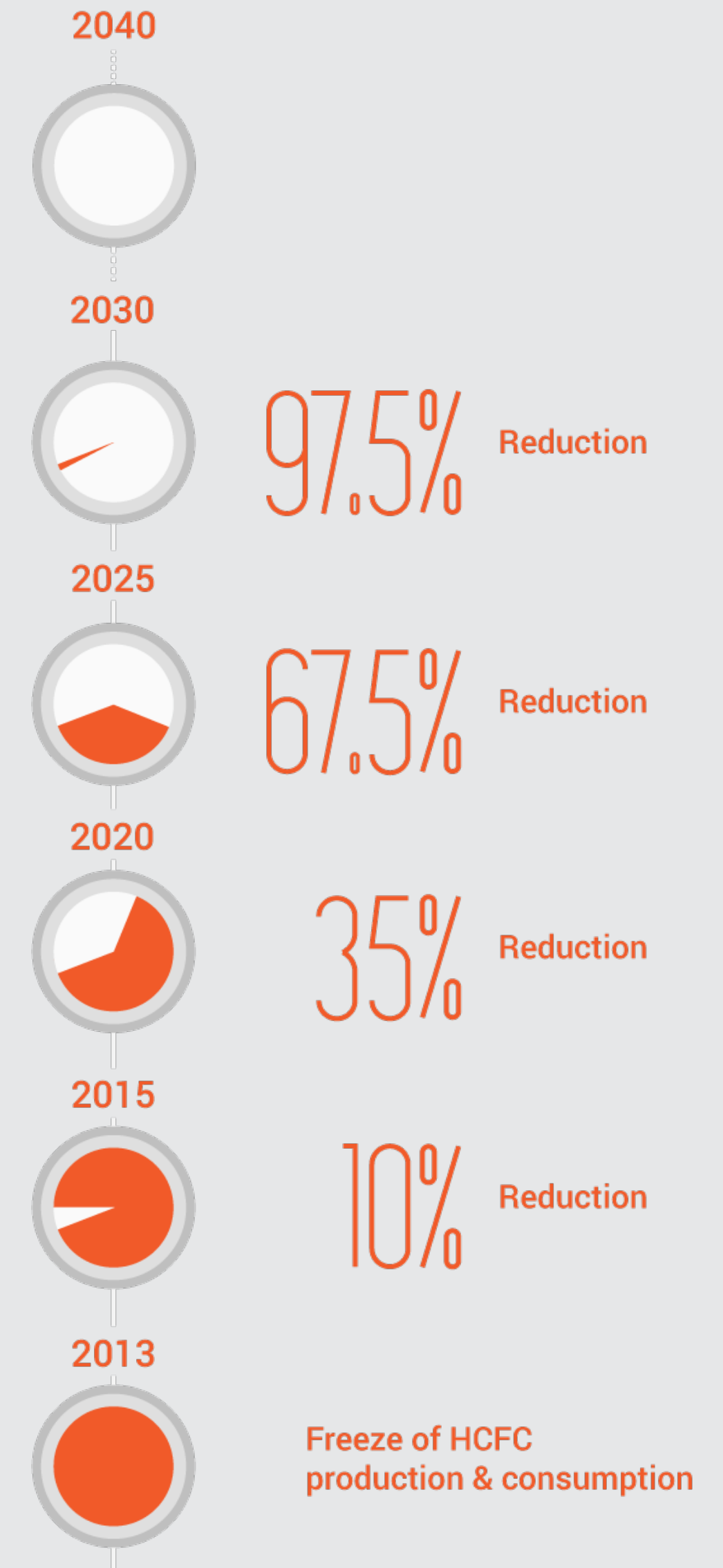




# CHINA: POLICY TRENDS



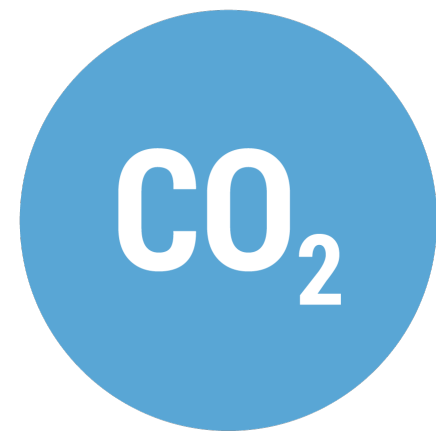
- phase-out of **production and consumption of HCFCs by 2030** = global impact
- revised **Environmental Protection Law in 2015**, after 25 years = increasing accountability of polluters and government for environmental issues
- increasing **government support for natural refrigerants** in several sectors, especially room AC, heat pumps, commercial & industrial refrigeration







residential air conditioning  
plug-in commercial refrigeration



residential heat pump water heaters  
commercial heat pump water heaters  
industrial heat pump water heaters  
mobile air conditioning  
commercial and industrial refrigeration



industrial refrigeration  
transport refrigeration  
condensing units

## NEXT STEPS

**Promotion / incentives / standards**

2nd stage HCFC Phase Out Management Plan

standards review at national / international level

## CLOSING REMARKS



- global HFC phase down will soon become a reality
- regulatory action at national level to reduce emissions of HFCs is intensifying across the world = **opportunities for natural refrigerants**
- **early policy action ahead of internationally agreed phase down schedules** can avoid locking in the use of high GWP refrigerants & additional cost
- **level of policy ambition depends on the level of awareness** of policy-makers and other important players about the market situation



# SHECCO USEFUL LINKS



## **Industry Platforms:**

[www.hydrocarbons21.com](http://www.hydrocarbons21.com)

[www.R744.com](http://www.R744.com)

[www.ammonia21.com](http://www.ammonia21.com)

[www.R718.com](http://www.R718.com)

## **shecco Publications, incl. GUIDEs**

<http://publications.shecco.com>

## **Accelerate Magazines:**

[www.accelerateEU.com/](http://www.accelerateEU.com/)

[www.accelerateNA.com/](http://www.accelerateNA.com/)

[www.accelerateJapan.com/](http://www.accelerateJapan.com/)

## **ATMOsphere conferences:**

[www.ATMO.org](http://www.ATMO.org)

## **#WebinarWednesday**

[www.webinarwednesday.net](http://www.webinarwednesday.net)

## **The Natural Voice**

[www.thenaturalvoice.org](http://www.thenaturalvoice.org)





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Thank you very much!