

HFC Regulation in Europe

2nd National Conference Polyurethanes
Rigid Foam

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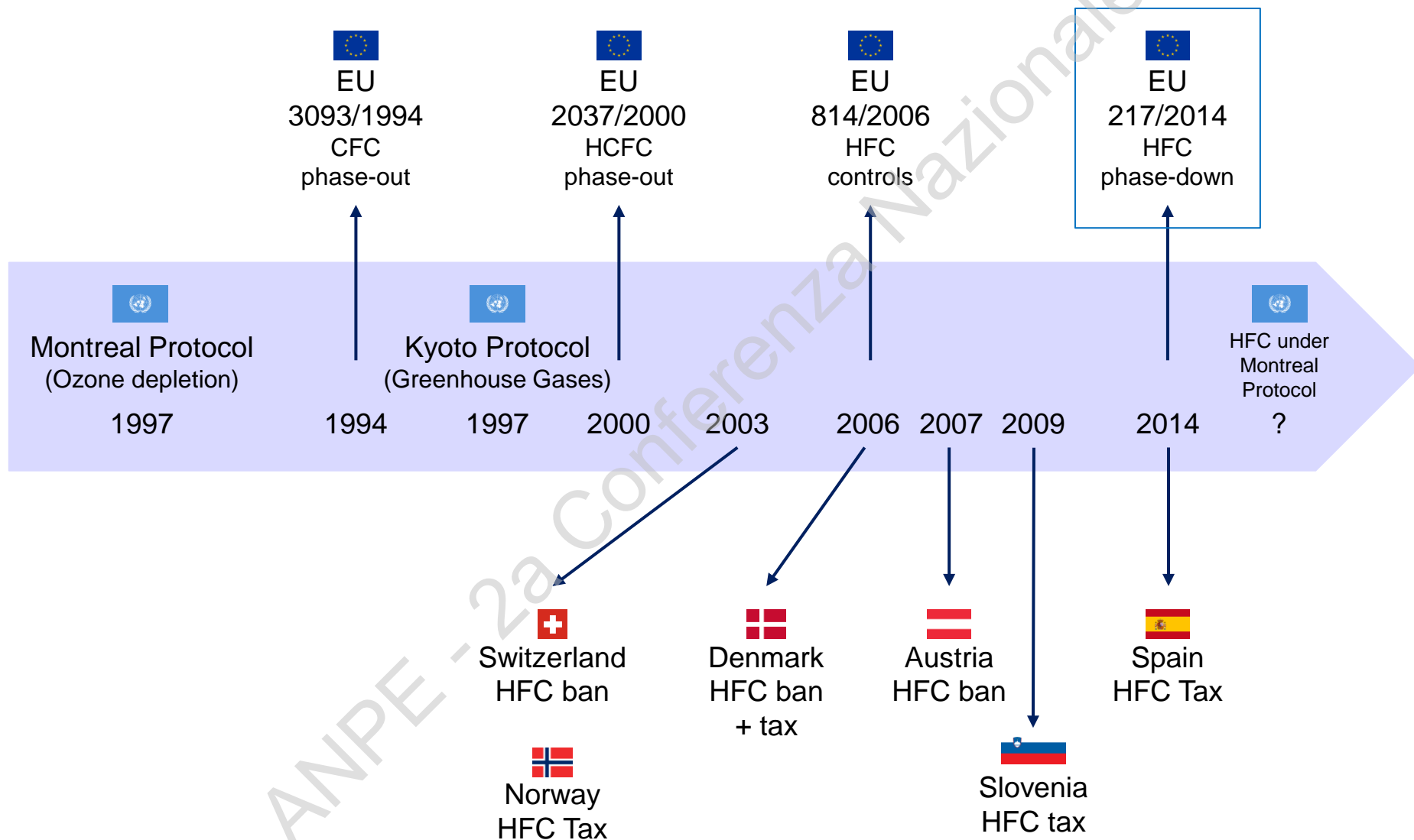
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Fluorinated Blowing Agents

Regulatory Context

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EU 517/2014 Fluorinated gases

HFCs in foams – 4 key legal aspects

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F-gases
general
phase-down

Specific
HFC use
ban in PU
foams

HFCs or
HFOs users
reporting
requirements

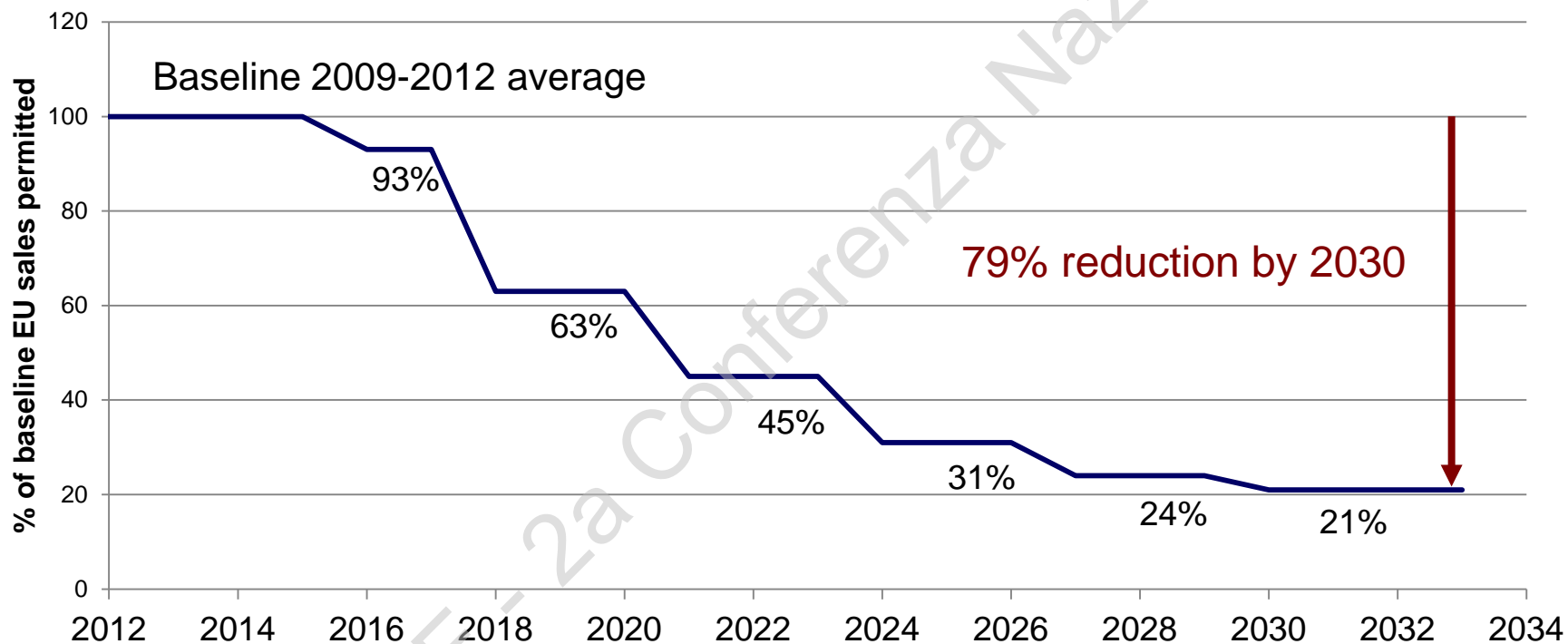
Foam and
blends
containing
HFC
labeling
requirements

General phase-down schedule

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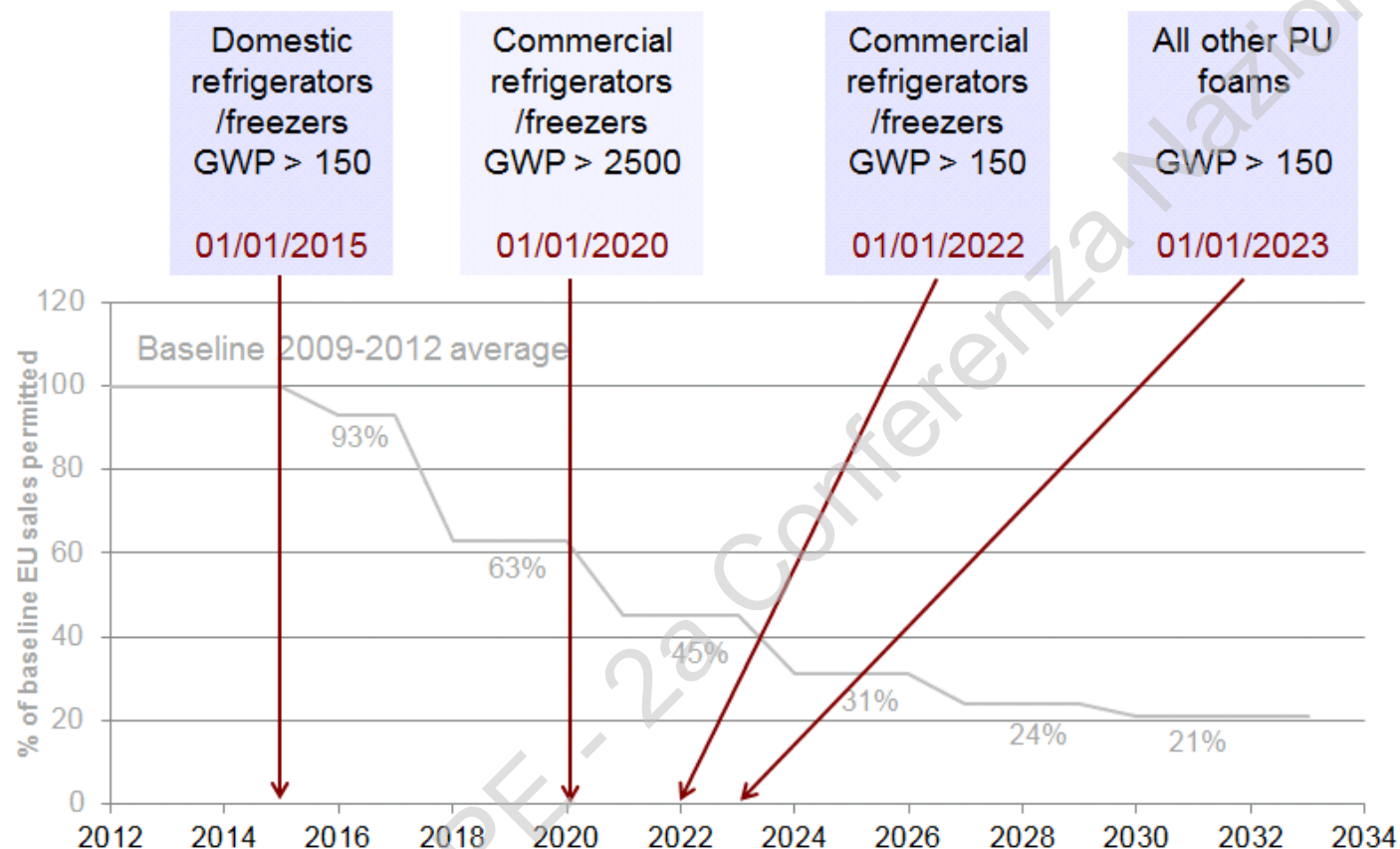
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EU 517/2014 - Art. 15 (1) and Annex V



Specific use ban in PU foams

EU 517/2014 - Art. 11 (1) and Annex III



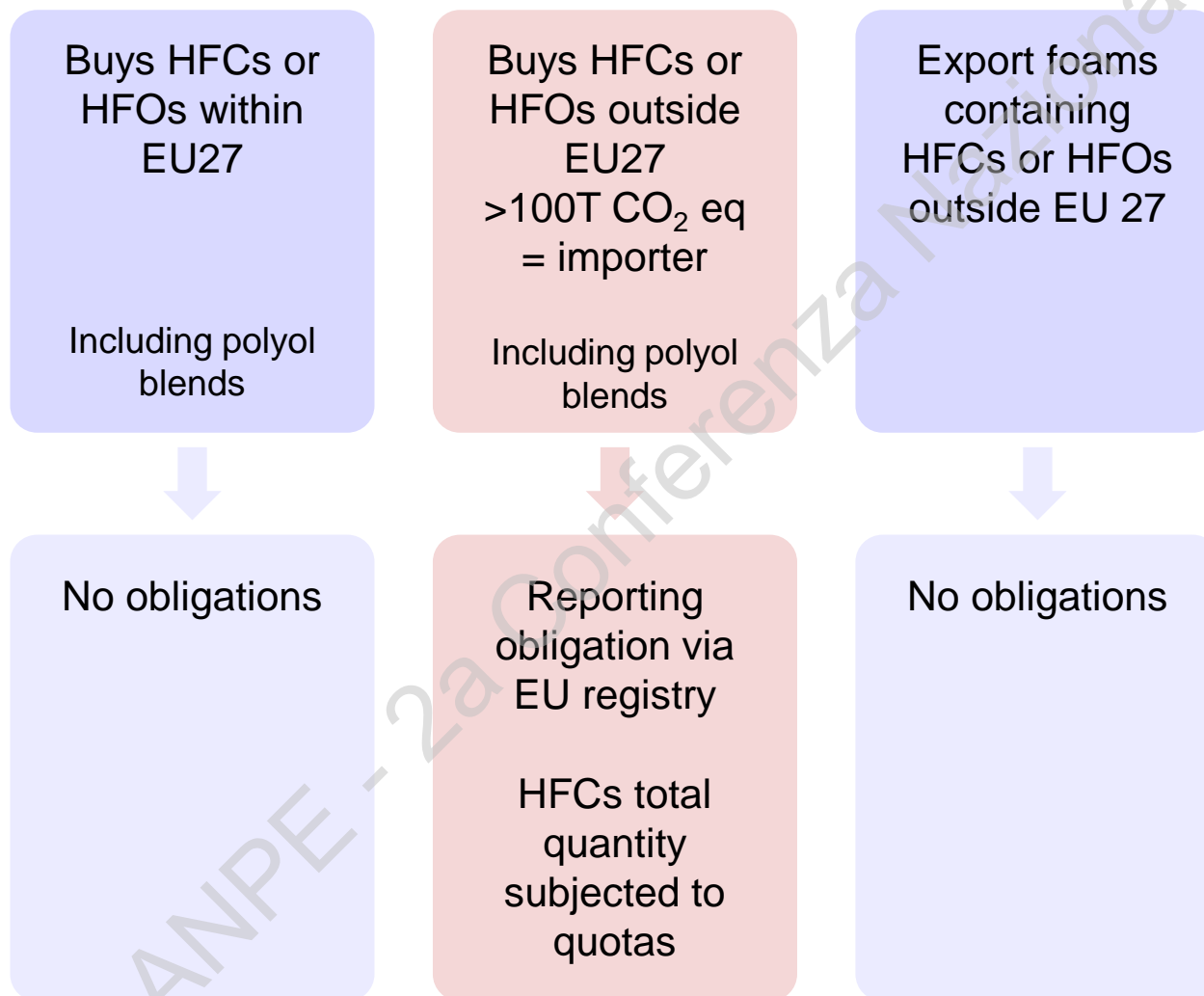
HFC	GWP
HFC 245fa	1030
HFC 134a	1430
HFC 365mfc	794
HFC 227ea	3220
HFC365/227 ratio 93/7	963

HFCs or HFOs users reporting requirements

Foamers

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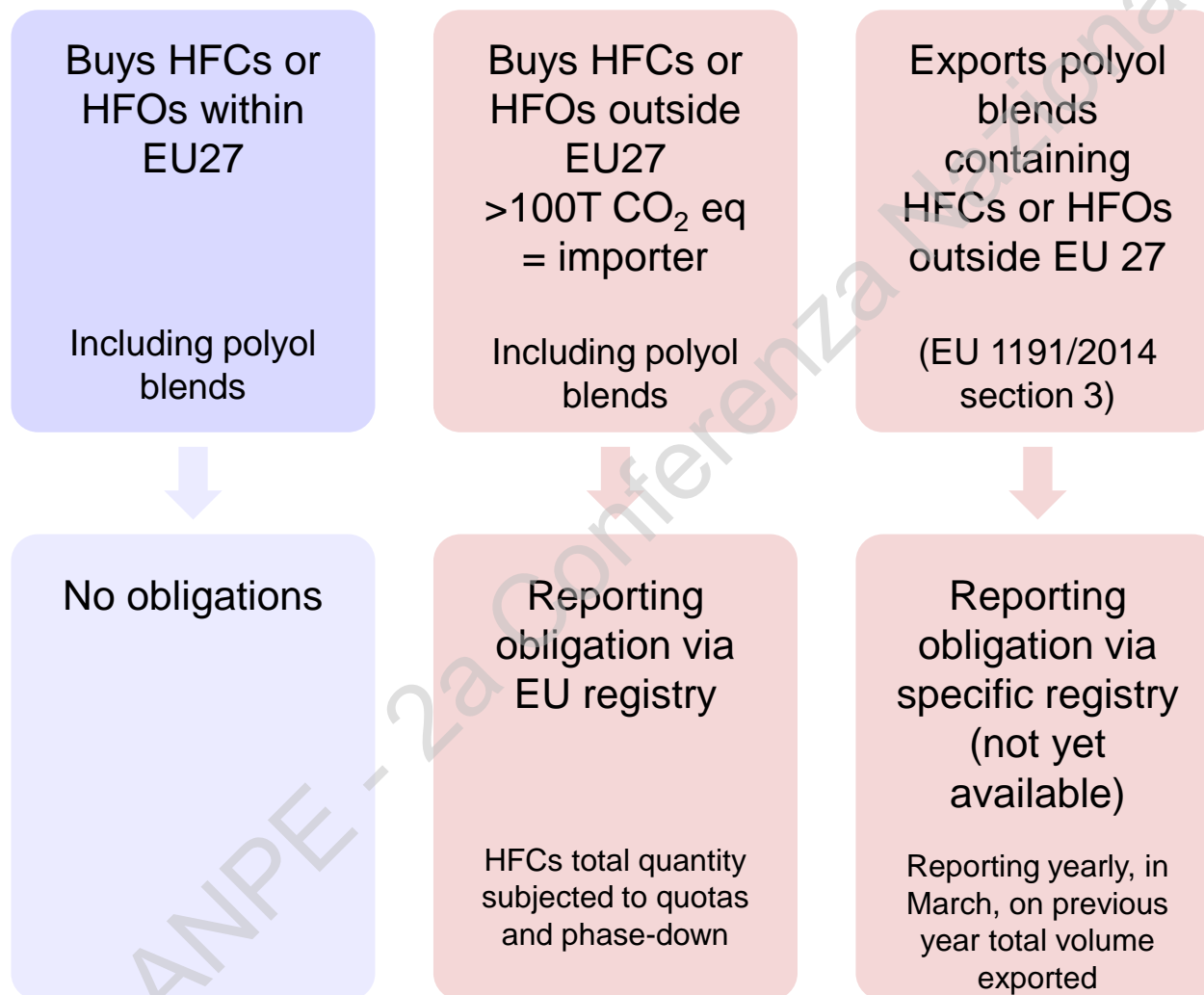


HFCs or HFOs users reporting requirements

Polyol blends manufacturers

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Foams and blends containing HFCs

Labeling requirements

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EU 517/2014 - Art. 12 (5) and 12 (3)

Concerns HFC 134a, HFC 227ea, HFC 365mfc, HFC 245fa

Manufacturers of	Labeling legal requirements (explicit in EU 517/2014)	Technical/instruction manual	Advertisement	European Recommendation until final decision & implementing act (ca. June 2015)
Polyol blends	V	V	V	-
Insulation boards	Indelibly on the board	V	V	EC understand this can be difficult → on packaging until further notice
Insulated composite panels (metal, wood panel, concrete ...)	?	V	V	On packaging until further notice
Technical insulation (water heater, walk-in cold room, garage doors, shutter...)	?	V	V	On packaging until further notice
Pipe-in-pipe insulation	-	V	V	-
Spray foam applicators	On drum	V	V	Both for system houses and applicators
Domestic refrigerators	HFC banned from 1 January 2015	-	-	-
Commercial refrigerators	On the equipment	V	V	-

How to calculate blowing agents mixture GWP according to EU 517/2014?

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- Formula

Total GWP = Σ (Substance X % x GWP) + (Substance Y % x GWP) + ...
(Substance N % x GWP)

e.g. HFC 365mfc / 227ea at ratio 93/7

GWP = (794 x 93%) + (3220 x 7%) = 963 kg CO₂ equivalent

- Reference GWP values

- HFCs : Annex I
- HFOs (=unsaturated HFCs) : Annex II
- Pentanes : Annex II, GWP = 5 for all isomers

Overview national HFC regulations in EEA

	Austria	Denmark*	Switzerland	Norway	Slovenia	Spain
PU application	All	All	All	All	All	All
Ban on use & manufacturing	Yes	Yes	Yes	No	No	No
Ban on import and sales products containing HFCs	Yes	Yes	Yes	No	No	No
Entered into force	Jan 2007	Jan 2006	Jan 2003	Jan 2003	Jan 2009	2014
Exemption*	e.g vaccine coolers	possible	possible			
Comments		ca. €20 per tCO ₂ eq		ca. €30 per tCO ₂ eq	€0.71 per tCO ₂ eq	ca. €20 per tCO ₂ eq full tax as of 2016 (33% in 2014, 66% in 2015)

* Today Denmark does not allow use of HFOs either, but regulation will change

Any questions ?

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