

Heat pumps!

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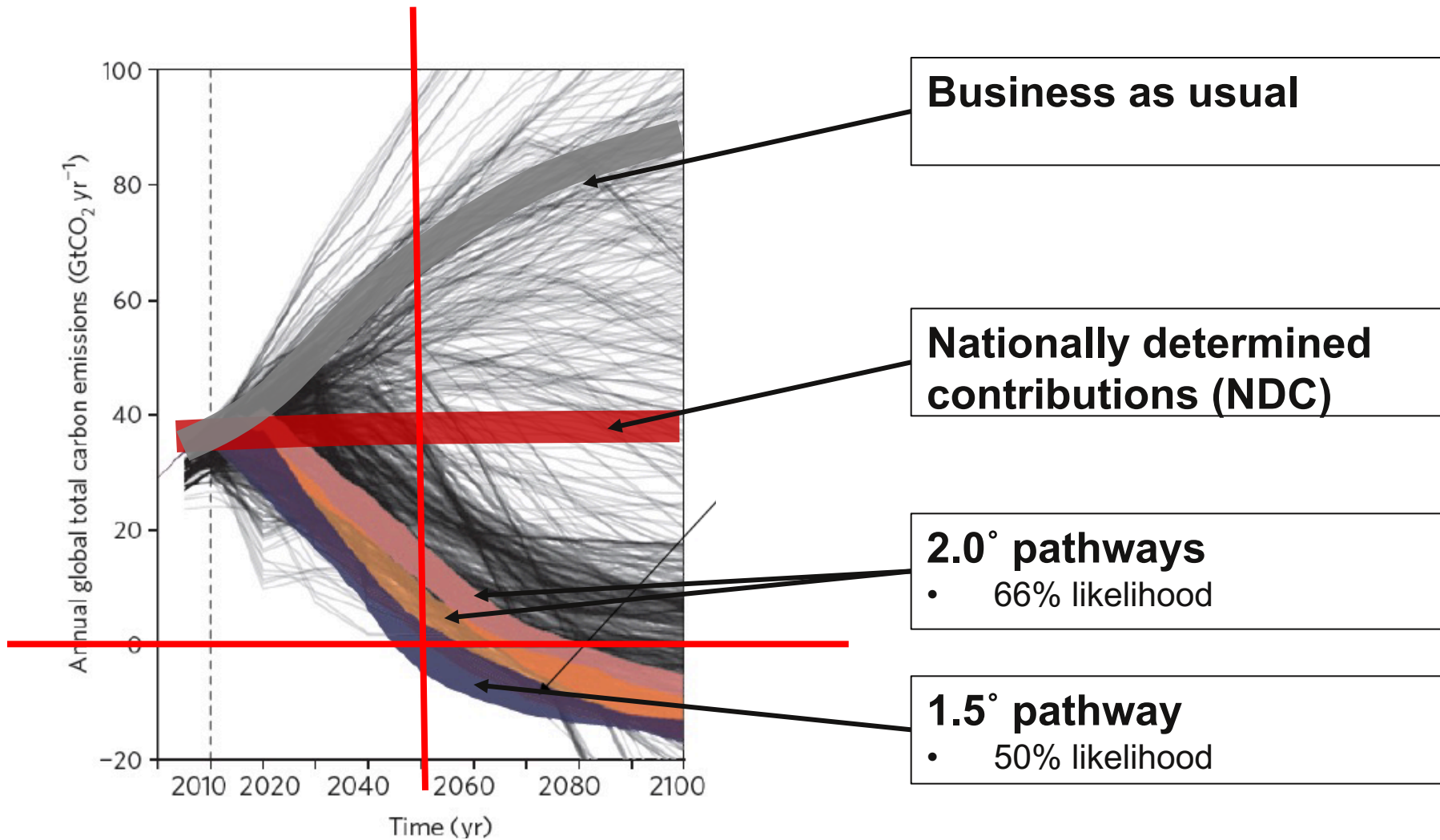
In 2015 195 nations adopt climate agreement: 2° C max, better yet, 1.5° C



COP21 - CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE



Only 33 years later?



Source: IPCC 5th assessment report Rogelj et al. (2015): Energy system transformation for limiting end-of-century warming to below 1.5C. Nature Climate change

Reduction of CO₂ emissions in the heating sector

Investment in efficiency AND technology essential

Average value of specific CO₂ emission of heating technologies must be reduced by 45 to 50 % compared to today until 2030

end energy SH	end energy SH + DHW	specific CO ₂ emissions for all employed heat technologies in % of today's value									
		100%	93%	86%	79%	72%	65%	58%	51%	43%	36%
% (of today)	% (of today)	CO ₂ emissions for space heating (SH) and domestic hot water (DHW) in % of today's value									
100%	100%	100%	93%	86%	79%	72%	65%	58%	51%	43%	36%
90%	91%	91%	82%	77%	72%	65%	59%	53%	46%	40%	33%
80%	82%	82%	77%	71%	65%	59%	53%	47%	42%	36%	30%
70%	74%	74%	68%	63%	58%	53%	47%	42%	37%	32%	27%
60%	65%	65%	60%	56%	51%	46%	42%	37%	33%	28%	24%
50%	56%	56%	52%	48%	44%	40%	36%	32%	28%	24%	20%
40%	47%	47%	44%	40%	37%	34%	30%	27%	24%	21%	17%
30%	38%	38%	36%	33%	30%	28%	25%	22%	19%	17%	14%

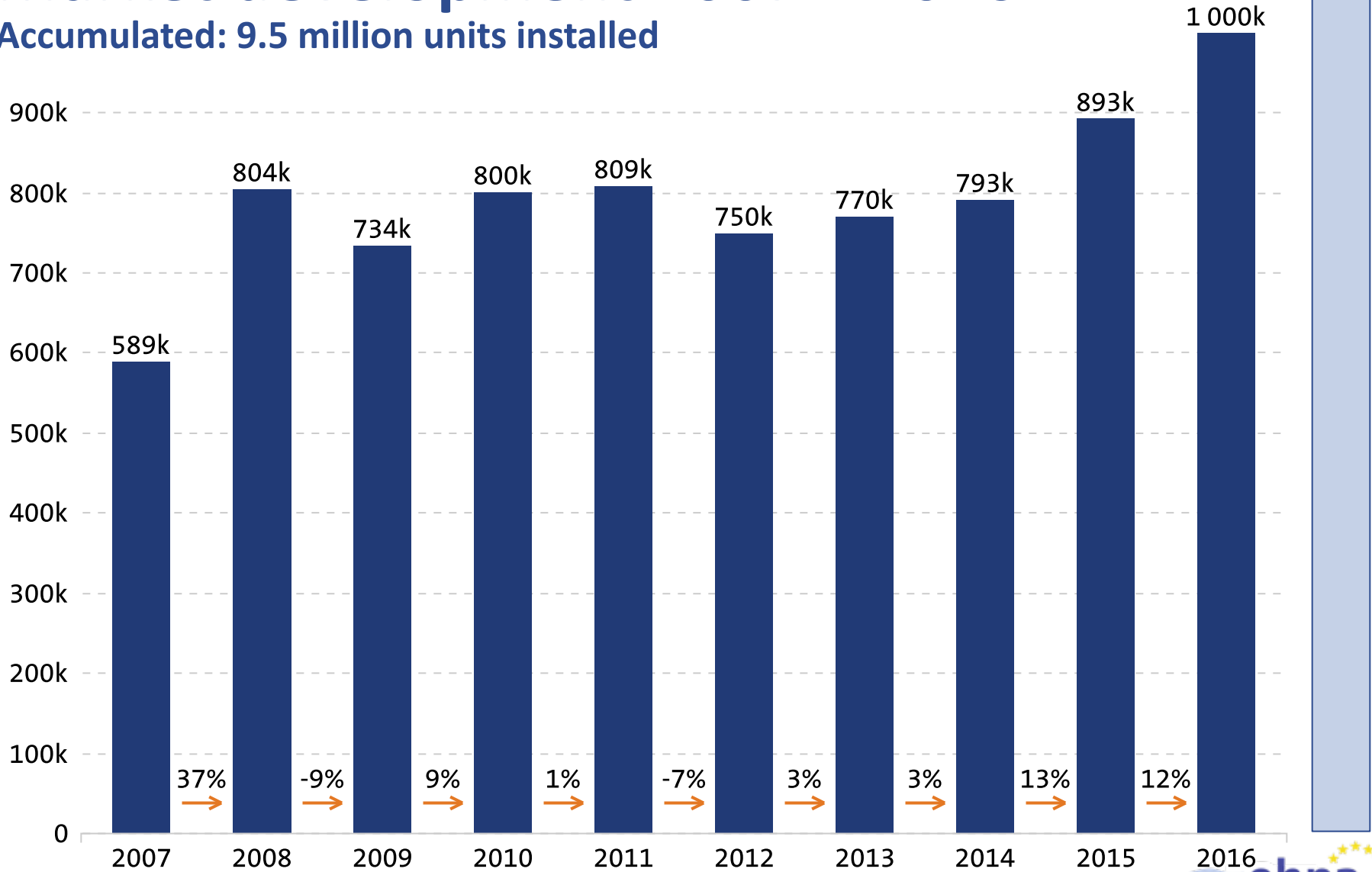
Needed pathway

Target region 2030

Investment in demand reduction / efficiency

Market development 2007 – 2016

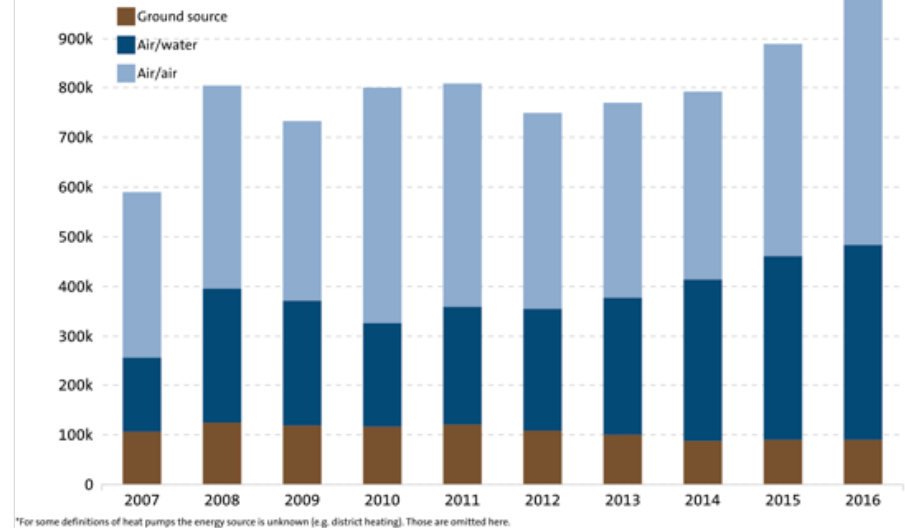
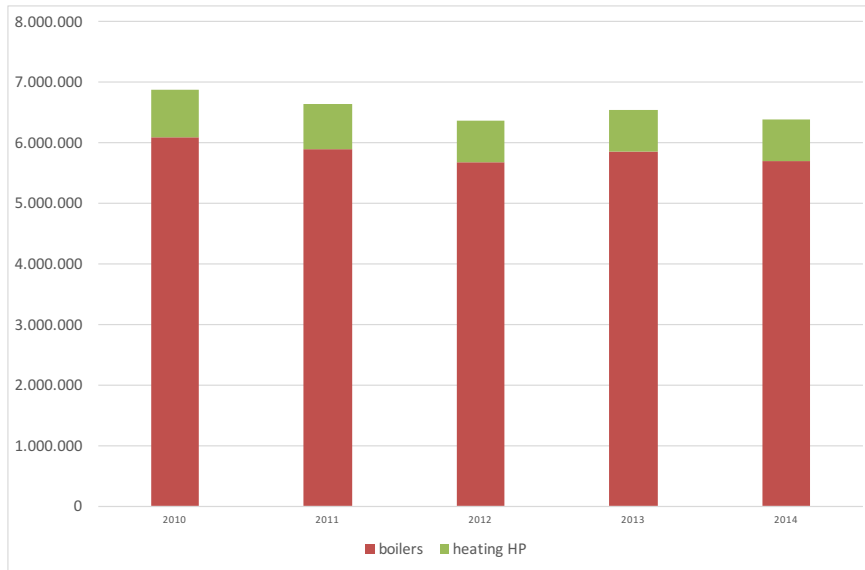
Accumulated: 9.5 million units installed



Detailed statistics at stats.ehpa.org

Market development: heating vs. heat pumps

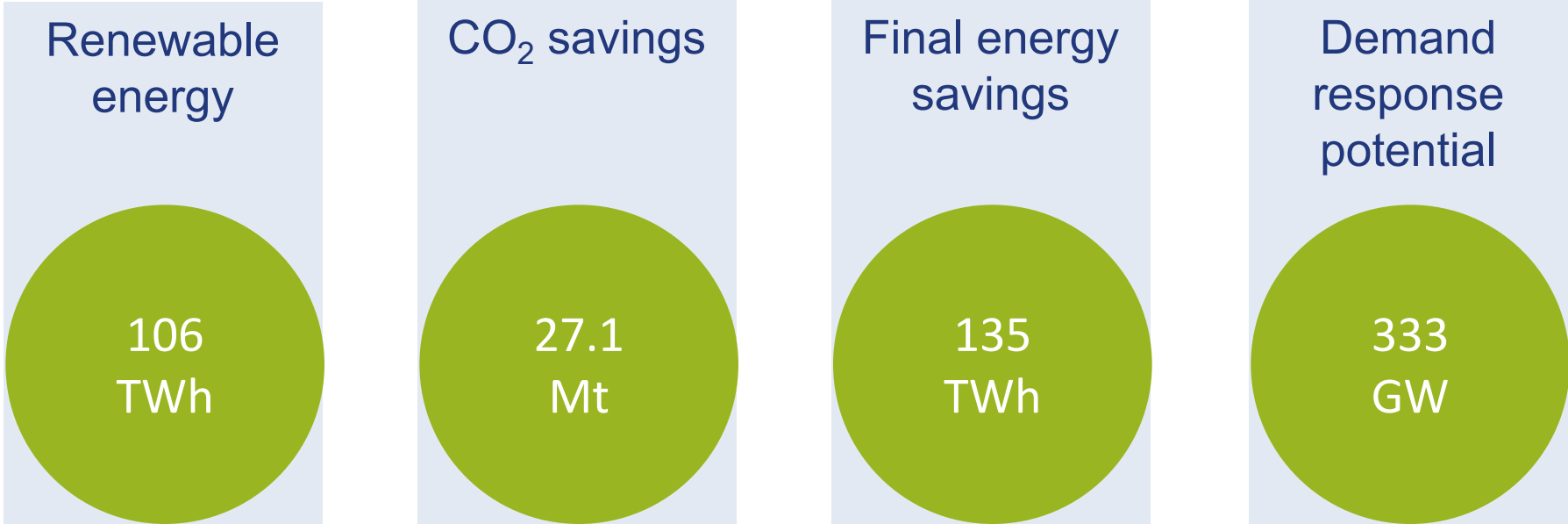
6.5 million **boilers per year** vs.
9.5 million **heat pumps installed**



Source: BRG / EHPA

Heat pump benefits 2016

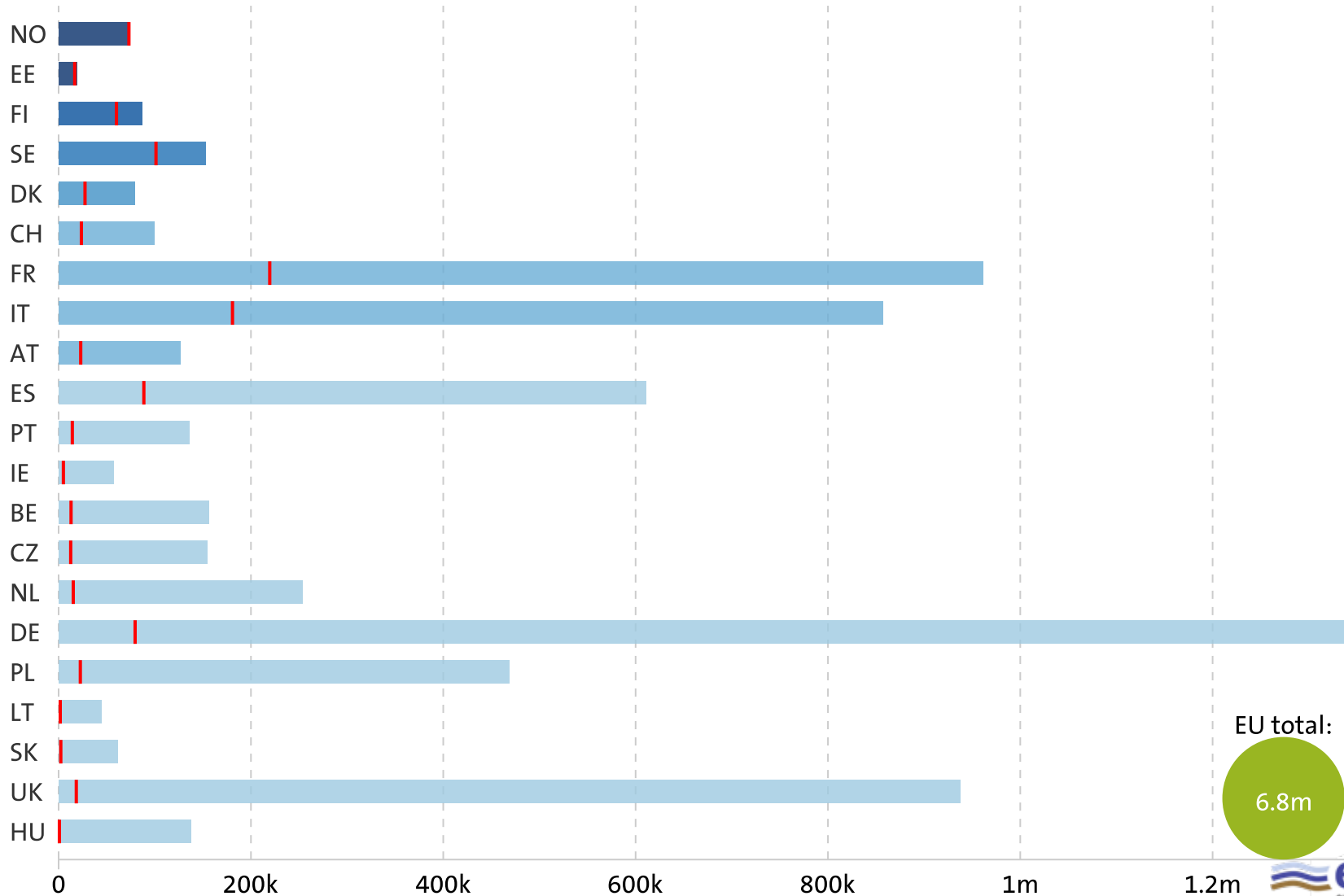
Base on 9.5 million heat pumps installed



10 – 30 GWh
per instance

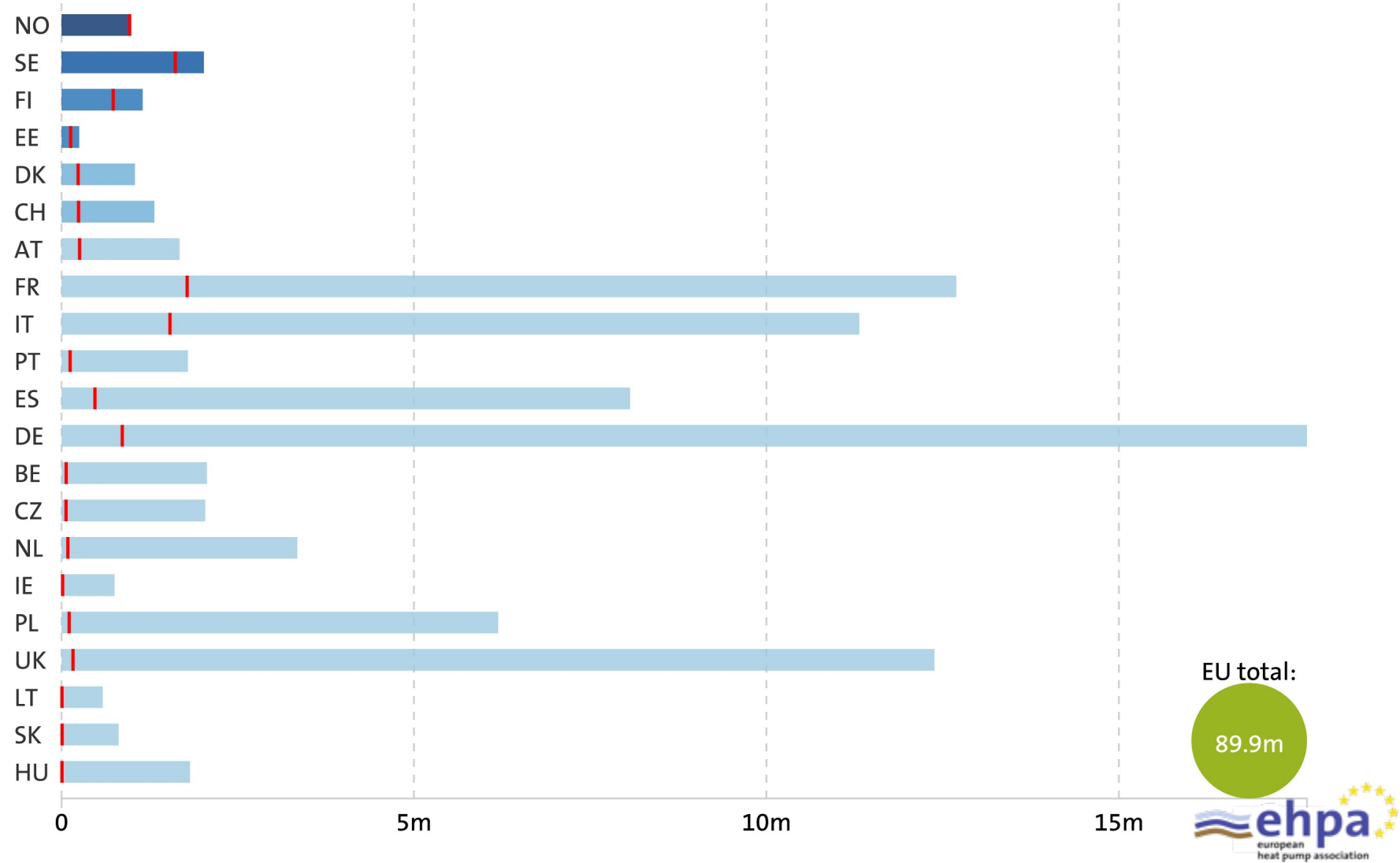
Market potentials

If Norway was everywhere



If Norway was everywhere...

Potential for the stock of heat pumps



What does that mean in the context of Atmosphere?

- Until 2030, most **refrigerants** in heat pump applications must be low/no GWP. Is the heat pump value chain prepared for that?
- In order to maximize **efficiency**, heating and cooling should be seen as two sides of the same coin. Is that done?
- In order to avoid competing **policy**, energy efficiency and RES should be seen as two sides of the same coin. Is that done?
- ...

The European Heat Pump Association AISBL

- EHPA is a Brussels based industry association which aims at promoting awareness and proper deployment of heat pump technology in the European market place for residential, commercial and industrial applications. EHPA provides technical and economic input to European, national and local authorities in legislative, regulatory and energy efficiency matters. All activities are aimed at overcoming market barriers and dissemination of information in order to speed up market development of heat pumps for heating, cooling and hot water production.
- EHPA coordinates a quality initiative including a Quality label for heat pumps and Certification standards for heat pump installers. The association compiles the annual heat pump statistics and organizes a number of events, among them an annual heat pump conference.

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