

EUROPEAN HEAT PUMP SUMMIT

POWERED BY CHILLVENTA

SYMPOSIUM + EXPO
NUREMBERG, 20–21.10.2015

Industrial | Commercial | Residential
Heating & Cooling | Components & Equipment

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The European heat pump KEYMARK

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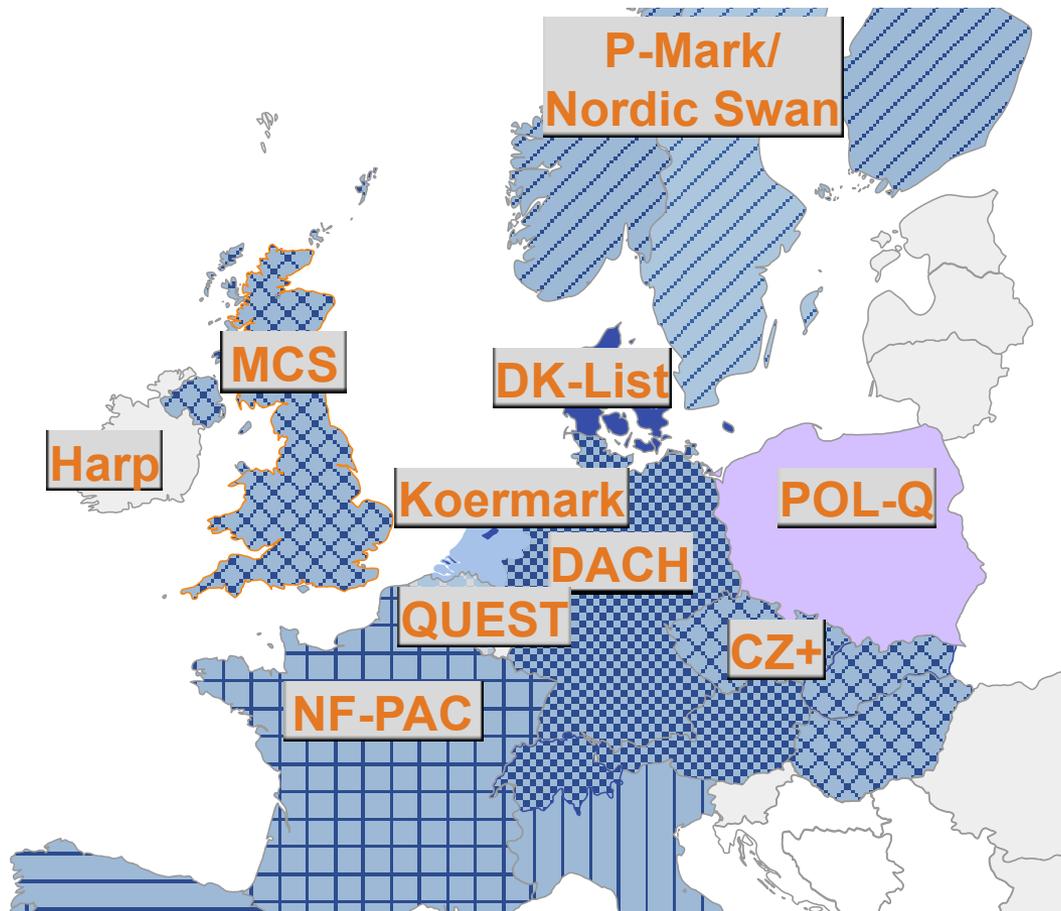
An unpleasant future...

- Multiple schemes
- Multiple FPC
- No mutual acceptance

➔ More work/time

➔ higher cost

Better quality?



Idea of a single certificate was developed from 2013 - 2015

- Requirements
 - A single certificate
 - Open to all interested parties
 - Transparent and strong to create trust in the market place
 - Mutually accepted
 - no minimal requirements
 - Indirectly, due to Ecodesign, minimum requirements will apply (eta s, noise)
- Need to incorporate a transition period for the different existing schemes: EHPA – quality label, MCS in UK, NF-Pac in France, heat pumps positive list in Denmark, Harp list in Ireland
- Consideration of cooperation with existing schemes, development of EHPA certificate
- Conclusion: development of **CEN HP KEYMARK as a sufficient proof of heat pump quality in Europe**

European heat pump KEYMARK

- **ISO type 5 system according to ISO 17065**
 - **One set of test requirements including a robust model range approach**
 - **Application via empowered bodies**
 - Factory Production Control (FPC)
 - A quality assurance system
 - Usability of manufacturer labs
- **Open for all interested certification bodies**
- **Mutually accepted in all EU Member States**



■ **Certification Bodies**

- DIN CERTCO
- BRE
- SP Cert

■ **Associations**

- Ehpa (Secretariat)
- Informative: national associations
- Informative: EHI, BDH (supportive!)

■ **Manufacturers**

- Atlantic
- Daikin
- Emerson
- Dimplex
- Nibe
- Stiebel Eltron
- Vaillant
- Viessmann

- 25.6.2015: final draft of KEYMARK scheme documents delivered to all interested parties
- 31.8.2015 Last date to collect comments (more than 700)
- **July to October 2015**
5 pre-scheme development group meetings to accommodate comments
- **November** **Sending of final version to CEN KEYMARK management (currently DIN CERTCO)**
- **November** **Final approval of scheme documents by CEN KEYMARK management**
- **Ongoing** **application procedure of certification bodies to become partners**
- **Ongoing** **application procedure of test institutes to become partners (via certification bodies)**
- **Nov./December 15** **introduction of HP KEYMARK in the market**
- **Q1/2016** **First meeting of the Scheme Group**

- HPK__Heatpump KEYMARK scheme rules
 - HPK_Annex A_KEYMARK Requirements
 - HPK_Annex B_FPC Requirements
 - HPK_Annex C_FPC Report
 - HPK_Annex D_KEYMARK certificate template
 - HPK_Annex E_Test Points - Yearly surveillance
 - HPK_Annex F_Template for report of product modification
 - HPK_Annex G_Rules for OBL and Brands
 - HPK_Annex H_Testing lab requirement and recognition
 - HPK_Annex I_KEYMARK transition rules
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- HPK-01_SG-HP Internal rules
 - HPK-02_scheme naming convention
-
- Overarching basis: [CEN/CENELEC Internal regulations part 4 CERTIFICATION](#)

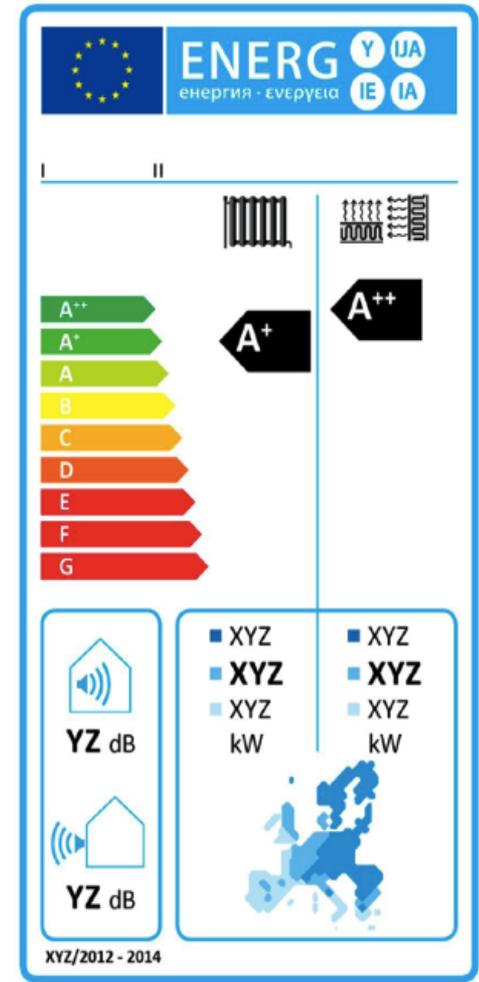
Initial phase

- Heat pumps covered by Lot 1 and Lot2
 - heat pump space heaters providing heat to water-based central heating systems for space heating purposes.
 - heat pump combination heaters providing heat to water-based central heating systems for space heating purposes and heat to deliver hot drinking and sanitary water.
 - Heat pump water heaters which are dedicated to providing hot drinking and sanitary water
- Thermal capacity up to 70kW

Future

- extension possible upon industry request

→ complement self declaration as required by EU regulations 813/2013 and 814/2013



- The ERP performances to be certified on the basis of European standards :
 - For space heating heat pumps: P_{rated} , η_S and sound in average climate – colder and warmer climate certification is optional
 - For combination heat pump : P_{rated} , η_S , η_{DHW} and sound in average climate – colder and warmer climate certification is optional
 - For water heat pumps: η_{DHW} , V_{40} and , sound in average climat – colder and warmer climate certification is optional
- Testing according EN 14511- 4
- Factory production control and Quality system
- Declared data of the manufacturer are reproducible and true
 - Model range approach
 - Yearly surveillance (random choice by CB of unit and some testing points)
 - Re-rating procedure system (3 step approach)

Low temperature heat pump

1. A7/W35 (EN 14511-2)
2. Bivalent point (EN 14825), average climate
3. One other testing condition to be chosen by the certification body (EN 14825, average climate)
4. For any other climate, bivalent testing point shall be tested (EN 14825)

Medium temperature heat pump

1. A7/W35/55 (EN 14511-2)
2. Bivalent point (EN 14825, average climate)
3. One other testing condition to be chosen by the certification body (EN 14825, average climate)
4. For any other climate, bivalent testing point shall be tested (EN 14825)

Acoustic characteristics

Acoustic test according to EN 12102 for average climate at the highest certified application temperature

Safety test (EN 14511-4)

Air/Water chapter 4.7 freeze-up test

Brine/Water chapter 4.4 shutting off the heat transfer medium flow

Water/Water chapter 4.4 shutting off the heat transfer medium flow

In case the heat pump can be used with brine or water, only one application (brine or water) shall be tested.

Factory inspection

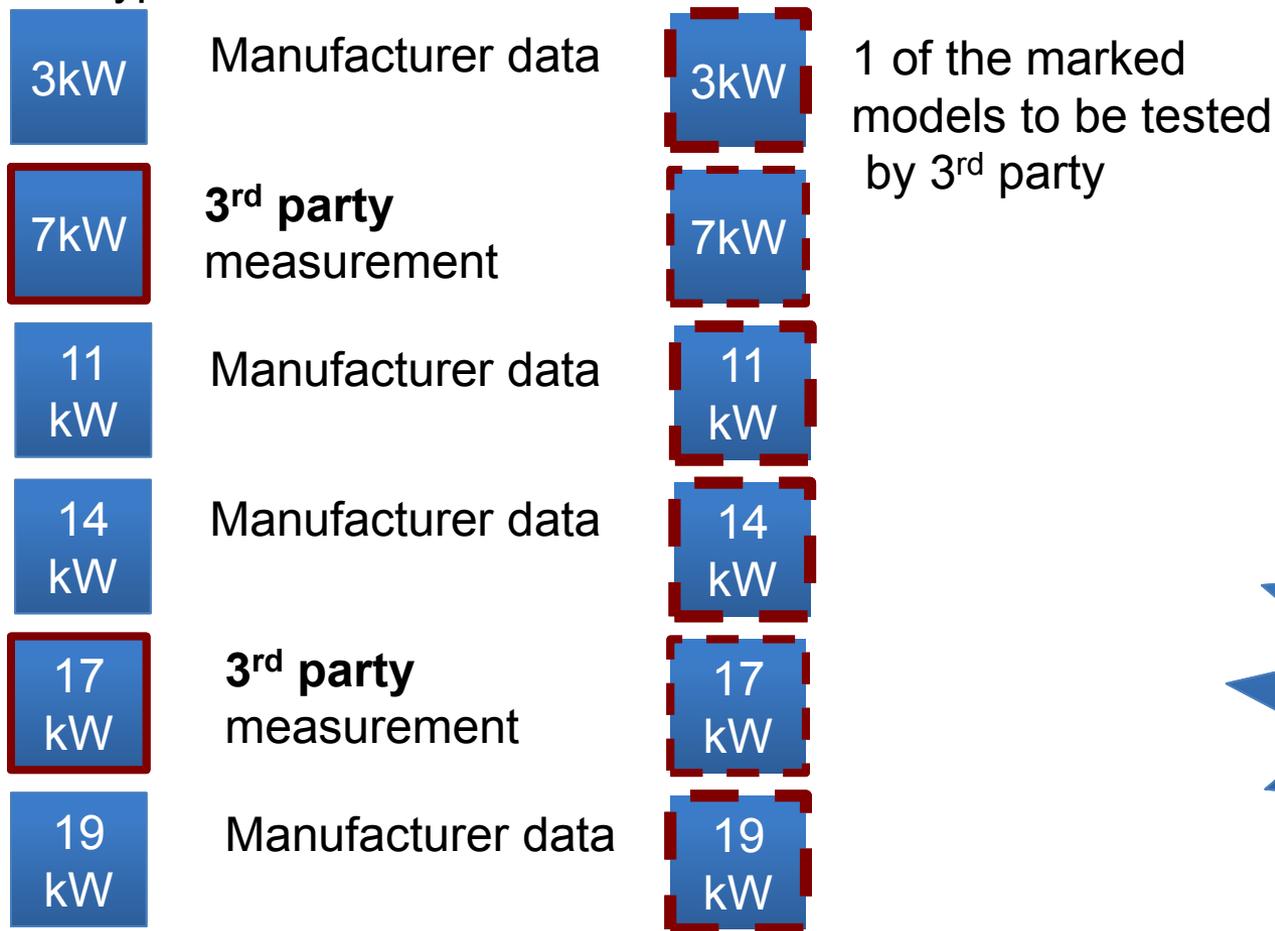
- Frequency: once per year and production site
- Factory production control: Check of internal documents and site visit
- Check of manufacturers Quality system in accordance to the elements of EN ISO 9001

Model range definition (Annex A)

- **A model range is declared by the manufacturer.** All heat pumps in a model range must use the same heat source, driving energy and same heat sink. The model ranges (“**type**”) covered by the certification scheme are:
 - Air/water - heat pumps
 - Water/water (including brine/water) - heat pumps
 - Exhaust air/water - heat pumps
 - Direct expansion/water - heat pumps
- **model is part of the model range:** devices with “identical” refrigerant circuit and
 - Same compressor: identical (same manufacturer and commercial reference)
 - Same condenser & evaporator: identical (same manufacturer & commercial ref.)
 - Same de-icing process (when relevant)
 - expansion device: same technology
- FAQ: a manufacturer **can** declare several model ranges in the same type!

Schematics of admission test and annual control test

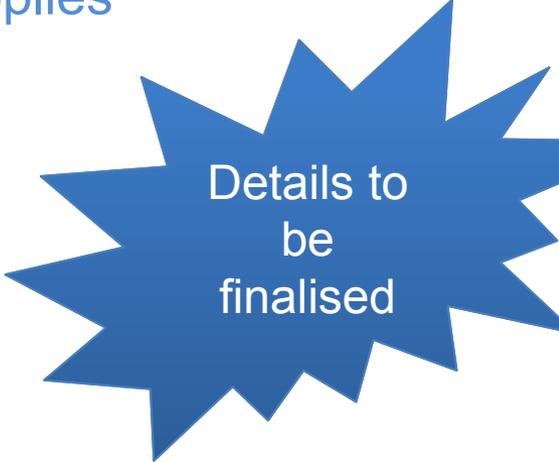
Type: Air-water
6 subtypes



Year 1: admission test

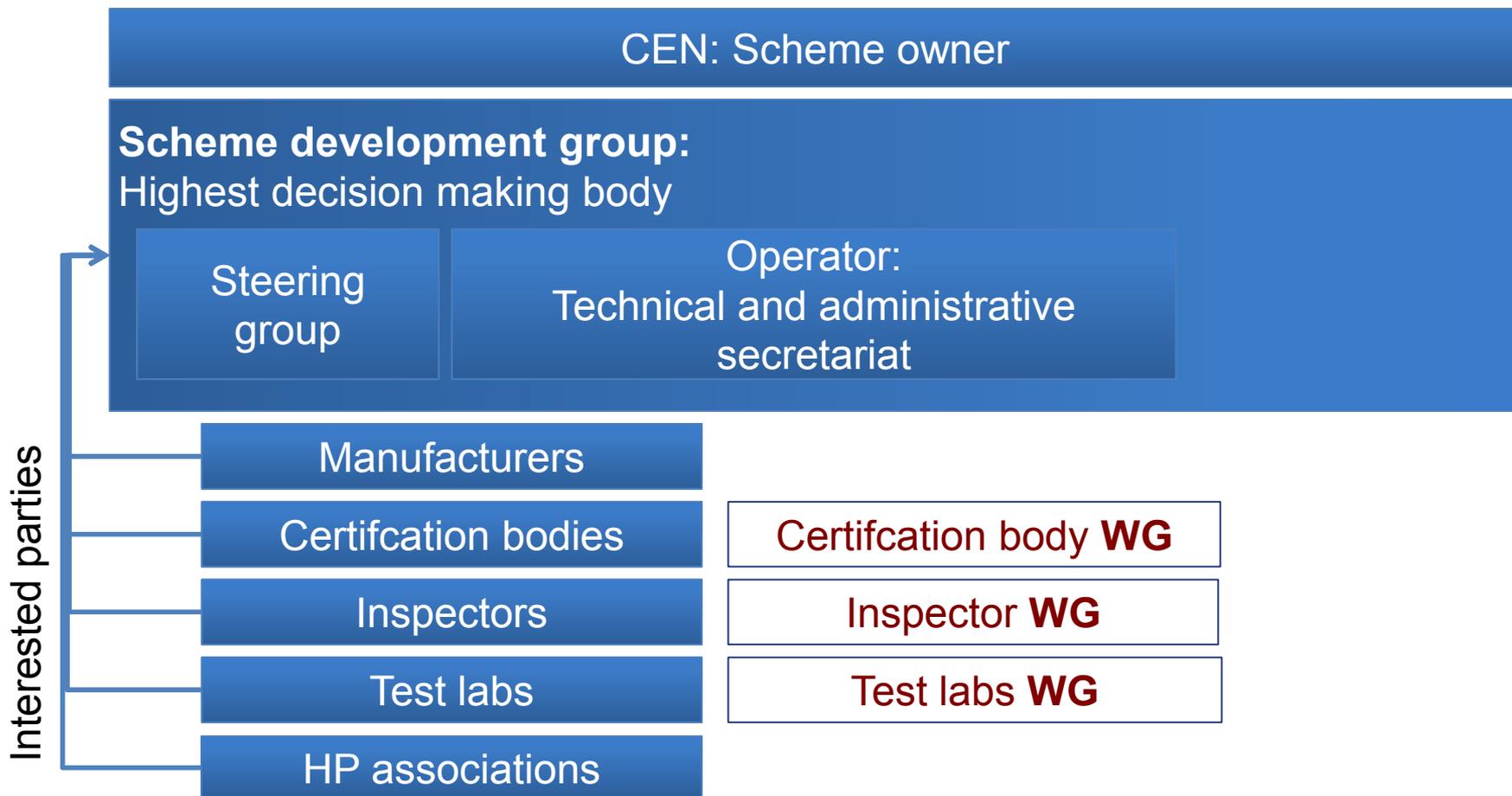
Year 2 and following: type test

- Every year : random selection of a product from production or from the warehouse during factory production control
- Product is tested
- In case of failure, another product is selected and tested
- In case of another failures, the re-rating process applies

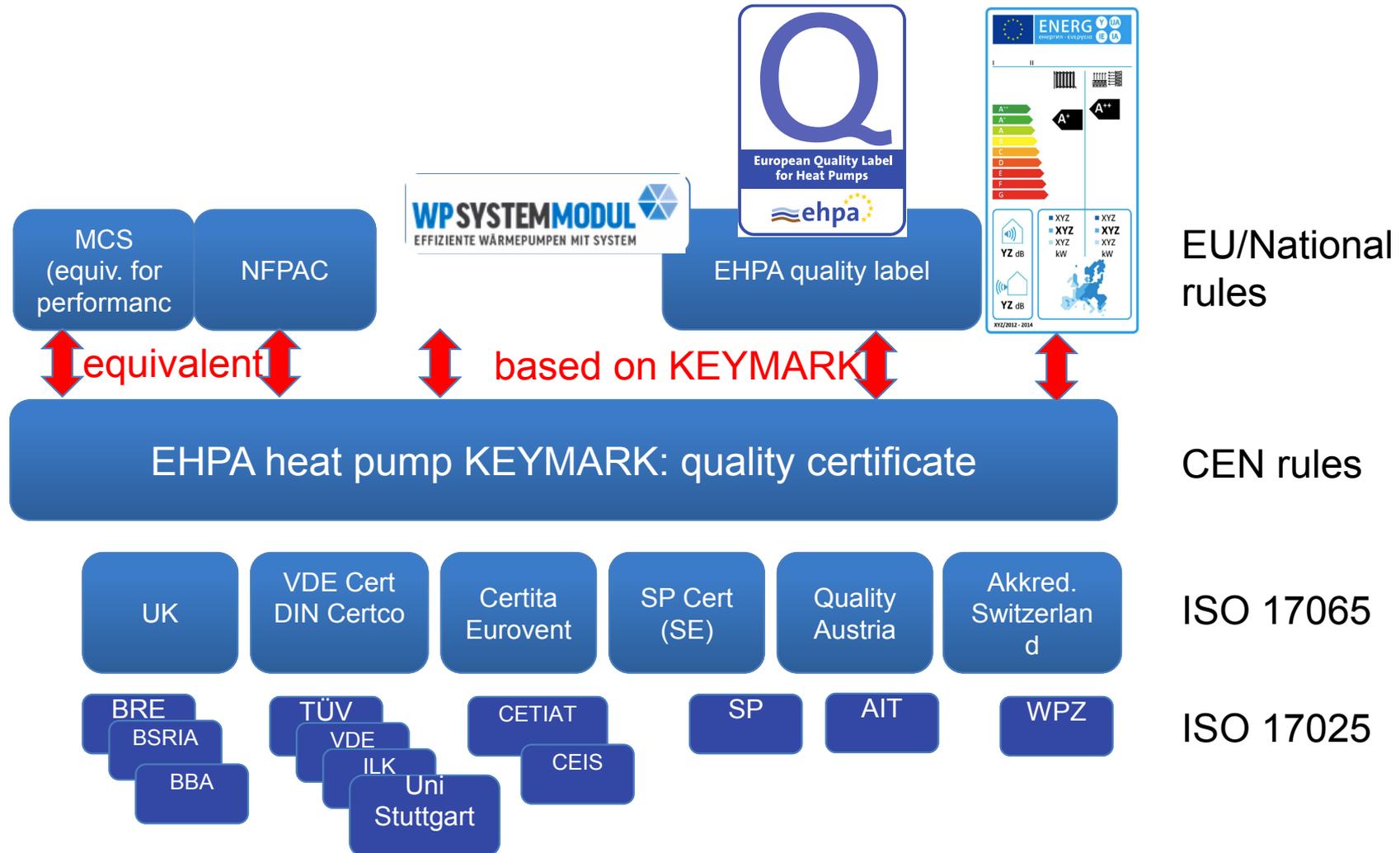


Details to
be
finalised

Participants of the heat pump KEYMARK network



Complementary relation of heat pump KEYMARK with other schemes



Cost of the scheme to the manufacturer

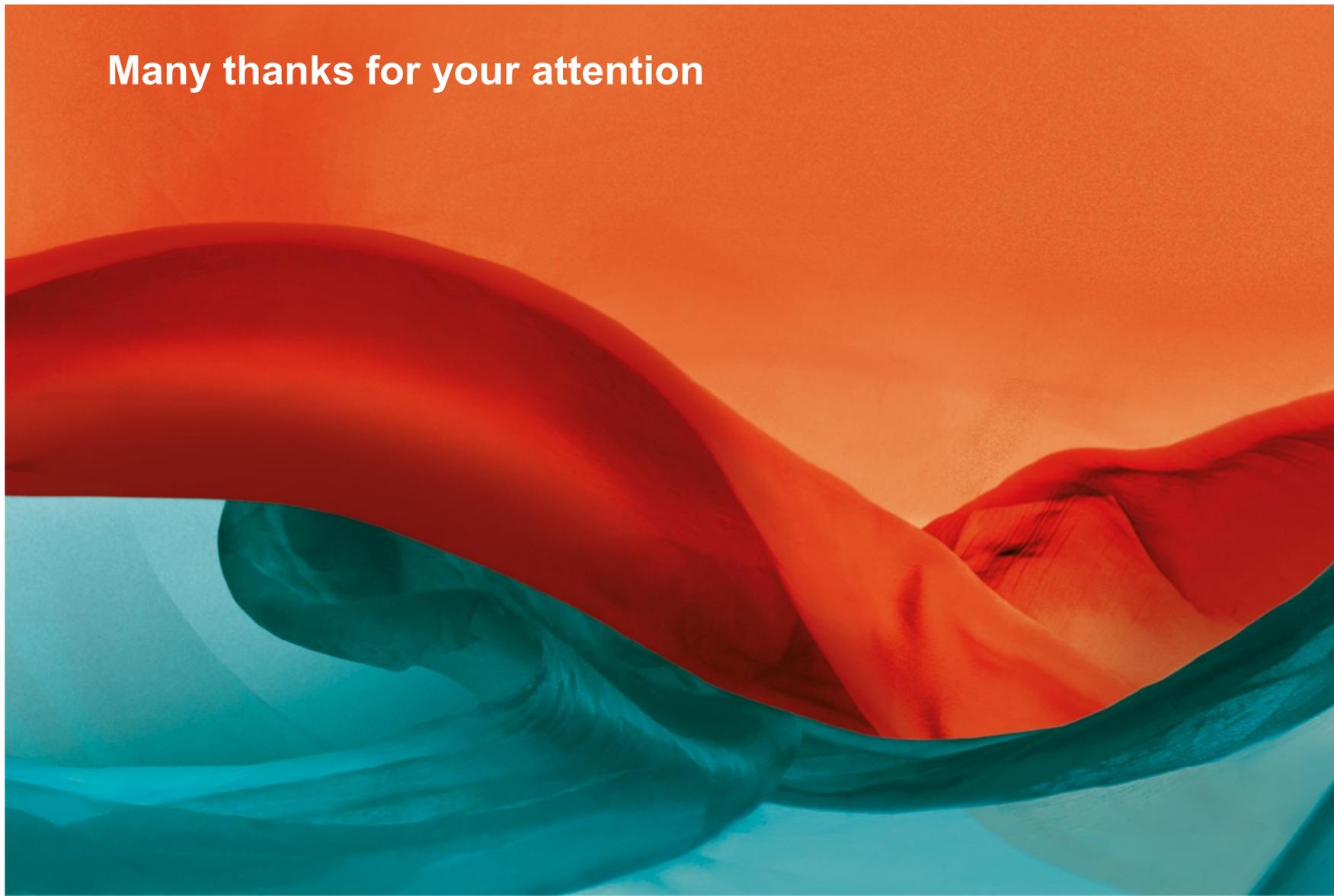
- Cost per KEYMARK certificate | subject to application
 - testing
 - certification
 - surveillance
- Cost for KEYMARK scheme management | per type / subtype
 - Licensing fee to CEN
 - Secretariat | HP KEYMARK scheme network
- Cost per site | annual
 - Factory inspection

What does that mean for the EHPA Quality label

- Quality label will continue to receive support from EHPA
 - Maintenance and hosting of database and website
 - Organization of meetings
- Future to be re-assessed after 3 years
- HP KEYMARK will be added as an alternative to test report in Quality label
- On national level: KEYMARK shall be supported; National association shall not lobby for a connection of the Quality label to subsidies. QL strictly **end consumer quality orientated**.
- QLC meetings continue, possibly less frequent, only members that use the QL
- Technical group integrated in KEYMARK 3rd party test labs group, SG-HP



Many thanks for your attention



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