

For our Environment

Umwelt 
Bundesamt

Criteria of the German Ecolabel ("Blue Angel") for Stationary Air Conditioners



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Business Case for
Natural Refrigerants

25-27/09/17 - Berlin

ATMOSphere Europe
Policy & Standards Panel

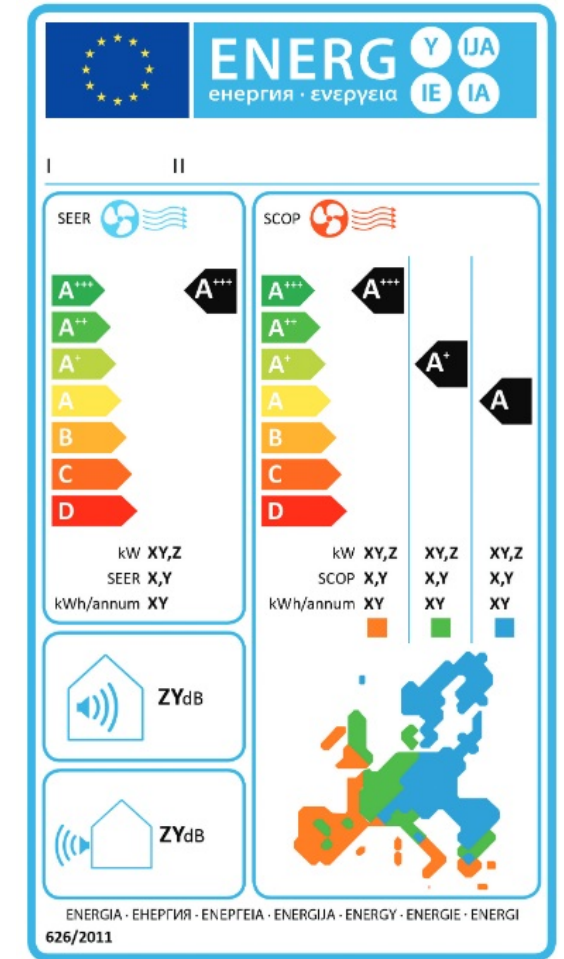
Dr. Daniel de Graaf, German Environment Agency (UBA)

Berlin, 27 September 2017

MEPS for AC appliances in Europe: Regulation 206/2012

- Scope: room air conditioners >12 kW cooling capacity (electrically driven split and portable units)
- Minimum energy efficiency requirements (since 1 January 2014):

	Split Air Conditioners		Double duct air conditioners		Single duct air conditioners	
	SEER	SCOP	EER	COP	EER	COP
GWP: >150 for < 6 kW	4.60	3.80	2.60	2.60	2.60	2.04
GWP: ≤ 150 for < 6 kW	4.14	3.42	2.34	2.34	2.34	1.84
GWP: >150 for 6-12 kW	4.30	3.80	2.60	2.60	2.60	2.04
GWP: <150 for 6-12 kW	3.87	3.42	2.34	2.34	2.34	1.84



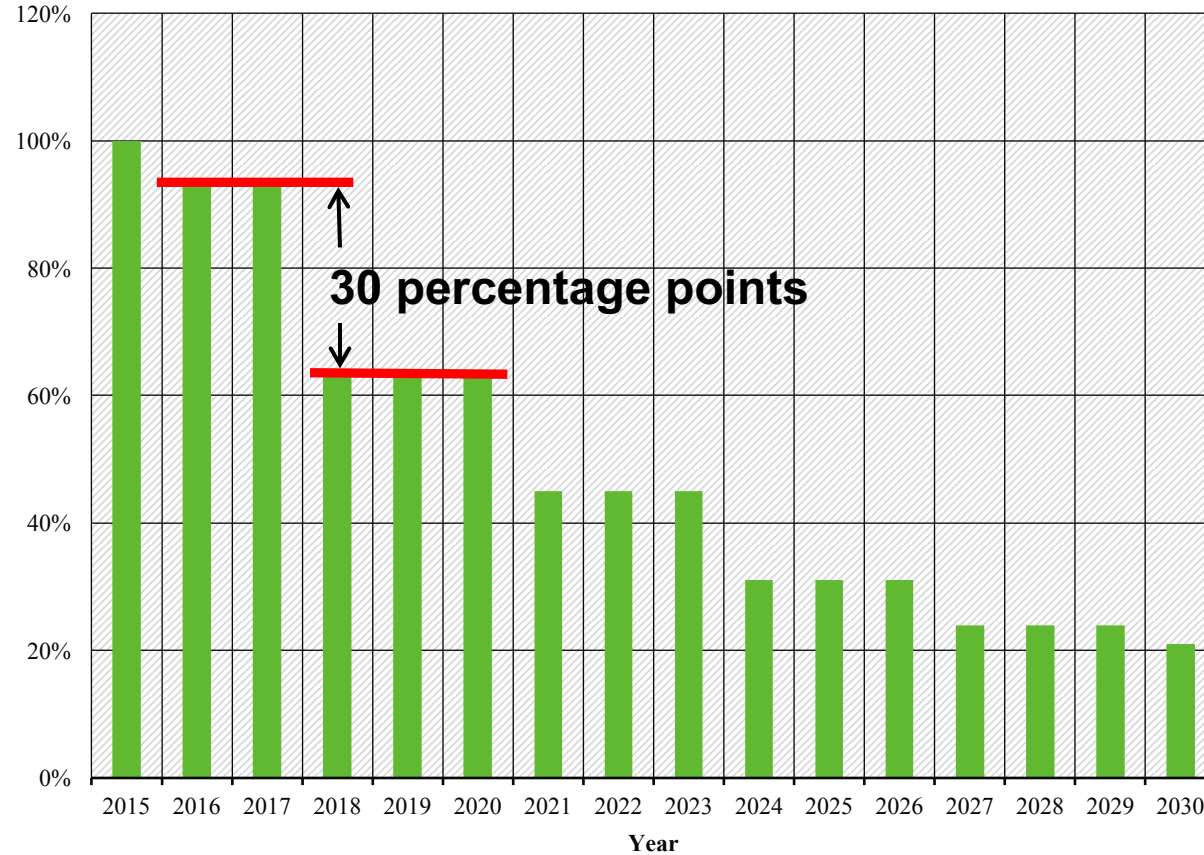
SEER = 4.6 → B

Regulation (EU) No. 517/2014 (F-gas Regulation)

HFC phase down in Europe

100% = Average amount placed on the market between 2009-2012

■ HFC amount allowed to be placed on the market (in CO₂ equivalents)



Source: UBA

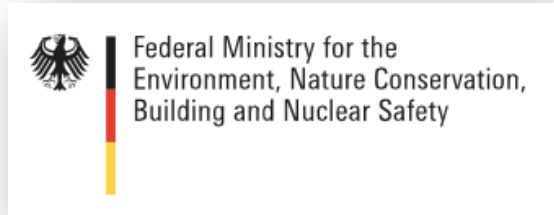
- HFC refrigerant shortage expected (cases already reported)
- Price increase for HFC refrigerants

German Ecolabel „Blue Angel“

- ISO 14024 Type 1 Label:
 - Voluntary, market-based
 - Multi criteria set based on life cycle considerations of the product (or service)
 - third party verification required
- Established in 1978 (first ecolabel worldwide)
- 120 product groups
 - 1,500 companies
 - 12,000 products and services certified
- Aims at 20-30 % of the products (regarding environmental performance)
- Product group criteria undergo revision after 2-4 years



German Ecolabel „Blue Angel“



‘The Owner’

The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)



‘The Decider’

The Environmental Label Jury



‘The Scientist’

German Environment Agency (UBA)



‘The Verifier’

RAL gGmbH

German Ecolabel for Stationary Air Conditioners

- RAL-UZ 204: Stationary air conditioners
- Published in August 2016
- Scope: Single-split units (no packaged units (e.g. portable, through-the-window), no multi-splits)
- Criteria (I):
 - Halogen-free refrigerant; no ammonia
 - SEER ≥ 7 (corresponds to A⁺⁺ category); equals 23.9 BTU/h (Thai Label No. 5: 15 BTU/h for ≤ 8 kW inverter)
 - SCOP ≥ 4.6
 - Sound power level at rated capacity (≤ 4.5 kW):
 - Indoor unit: ≤ 50 dB (A)
 - Outdoor unit: ≤ 58 dB (A)



➔ Verification by test reports

German Ecolabel for Stationary Air Conditioners

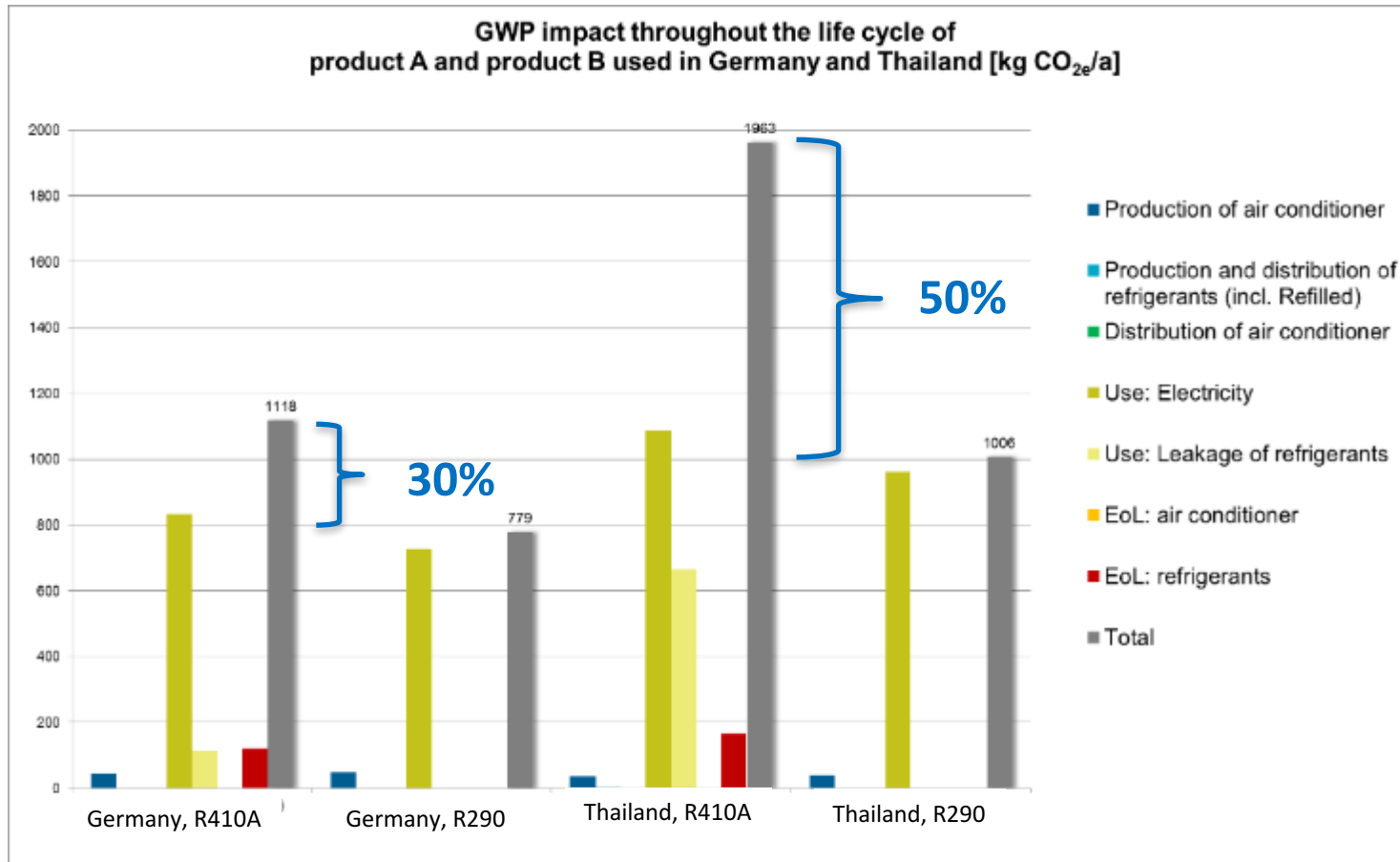


- Criteria (II):
 - Installation, maintenance and disposal must be offered by certified personnel (according to Chemicals Climate Protection Ordinance)
 - ‚easy‘ cleaning of indoor unit air filter
 - Exclusion of hazardous substances (mercury, chromium VI, etc.) according to ROHS Directive (2011/65/EU)
 - exemption according to ROHS Directive Annex does not apply (lead)
 - environmental-friendly product design (e.g. avoidance of composite materials)
 - Etc.

➡ Verification by self-declaration

German Ecolabel...for air conditioners?!

- German air conditioner sales: 215,000 units (77,000 portables)
- <5 % of households are air conditioned in Germany



German Ecolabel for Stationary Air Conditioners

How to get the 'basic criteria': **1. www.blauer-engel.de/en**

The screenshot shows the website's navigation bar with the logo on the left and menu items: 'Der Blaue Engel', 'Produktwelt', 'Für Unternehmen', 'News & Infos', 'Aktionstag', '#UndDu?', and 'Deutsch | English'. Below the navigation bar is a blue bar with icons for various product categories and a search bar containing 'Produkte & Marken', 'Vergabegrundlagen', 'Unternehmen', and a search icon. A green arrow points to the search bar. Below this is the breadcrumb trail: 'Startseite > Produktwelt > Haushalt & Wohnen > Klimageräte'. The main heading is 'Klimageräte' with a sub-heading 'Raumklimageräte für den stationären Einsatz'. A green arrow points to the search bar with the text '2. Type „conditioners“ into search box'. Below the text is a paragraph describing the purpose of room air conditioning units. A green arrow points to the search results list with the text '3. Click on hit'. The search results list includes the title 'Raumklimageräte für den stationären Einsatz | RAL-UZ 204' and a link 'Kriterien für die Vergabe' which is circled in green. Below the link is another link 'Anschreiben und Formular zur Einreichung des Antrages'. A green arrow points to the 'Kriterien für die Vergabe' link with the text '4. Click „Criteria for the award“'. At the bottom of the page is a blue bar with the text 'Empfehlen Sie diese Seite' and social media icons for Twitter, Google+, and Facebook.

2. Type „conditioners“ into search box

3. Click on hit

4. Click „Criteria for the award“

Thank you for your attention!

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<https://www.umweltbundesamt.de/themen/wirtschaftskonsum/produkte/fluorierte-treibhausgase-fckw>

<https://www.blauer-engel.de/en/products/home-living/klimageraete>



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Digression: Room Air Conditioner Efficiency: EER vs. SEER

- EER is calculated at 35 ° C outdoor and 27 ° C indoor temperature \Rightarrow only 13 hours/year in Germany
 - EER is an inadequate indicator for AC performance in Europe
- SEER is calculated from 4 outdoor temperatures
 - Part load conditions are considered with a 90% share
 - Calculation: EN 14825 (EU standard)

