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ONLINE

23-24/06/2020

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Supporting the Use of Natural Refrigerants in Air Conditioning

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German Environment Agency

Umwelt Bundesamt

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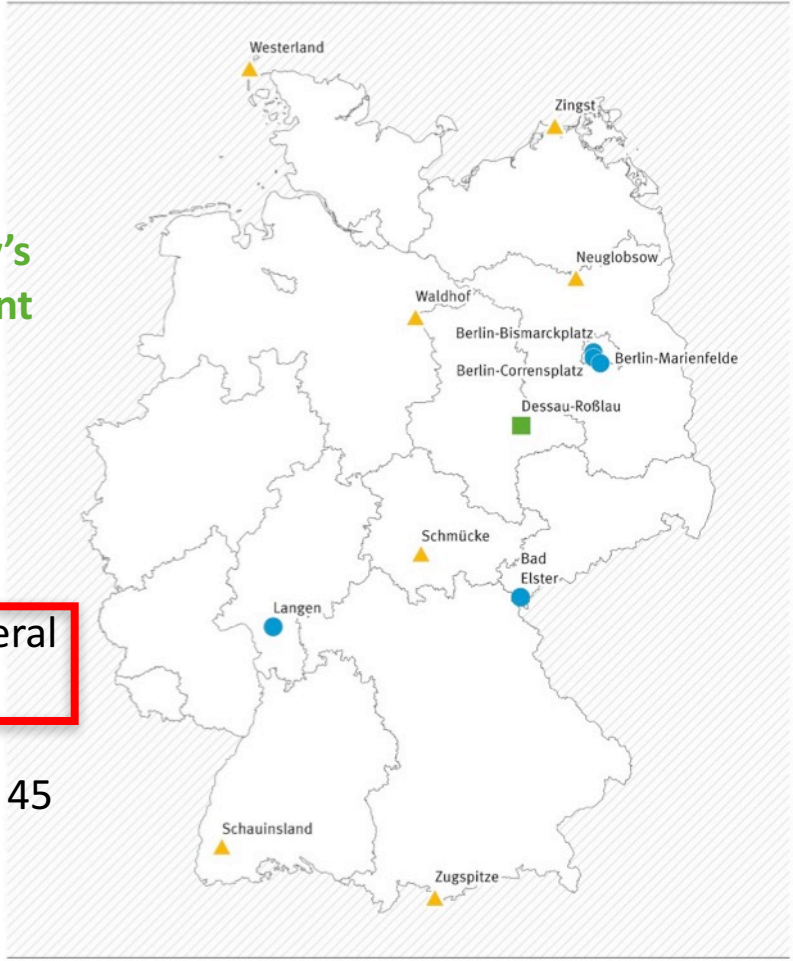
Who we are

- The German Environment Agency (UBA) is **Germany's central environmental authority** and an **independent research agency**.
- It was **established in 1974** in Berlin, headquarters in Dessau since May 2005.
- It employs about **1,600 people** at 13 locations, including 7 air monitoring stations across Germany.
- Main tasks: conducting research, informing the general public, providing policy advice to federal ministries, enforcing environmental law
- UBA has a **budget** of ~130 million EUR, including ca. 45 million EUR for external research



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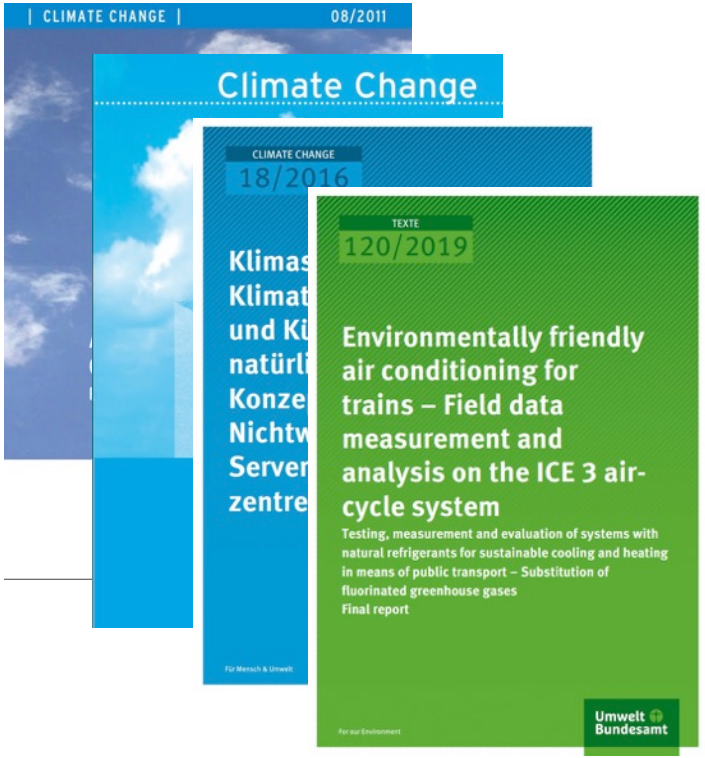
How we support the replacement of HFCs by NatRefs

- **Research projects**
- Brochures, fact sheets, information on our website
- Online platform for natural refrigerants
- Blue Angel Ecolabel
- Etc.



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https://www.umweltbundesamt.de/en/topics/climate-energy/fluorinated-greenhouse-gases-fully-halogenated-cfcs

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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 (world's first ecolabel)
- 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'

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Umwelt Bundesamt

RAL gGmbH

Owner: Federal Ministry for the Environment

- determines the principles upon which the Blue Angel is awarded
- appoints the members of the Environmental Label Jury

Professional expertise: German Environment Agency (UBA)

- develops the technical criteria
- regularly reviews criteria to ensure that the Blue Angel always remains up to date with the latest technical developments
- functions as the offices of the voluntary Environmental Label Jury, and thus supports their work

Independent decision-makers: the Environmental Label Jury

- consists of 15 representatives, decisions on new product groups to be awarded
- discusses and approves the award criteria suggested by UBA
- not bound by any instructions, making them completely independent

Auditor: RAL gGmbH

- verifies the compliance with the criteria upon receiving a product-specific application
- concludes contracts with companies regarding their use of the Blue Angel

German Ecolabel for Room Air Conditioners

- DE-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), < 12 kW
- Criteria (I):
  - Halogen-free refrigerant; no ammonia
  - SEER ≥ 7 (corresponds to A^{++} category);
  - SCOP ≥ 4.6 for heating mode
  - 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 Room Air Conditioners

- Criteria (II):
  - Installation by certified personnel (according to Chemicals Climate Protection Ordinance) must be offered (as well as maintenance and disposal)
  - ‚easy' cleaning of indoor unit air filter
  - Exclusion of hazardous substances (mercury, chromium VI, etc.) according to ROHS Directive (2011/65/EU)
  - environmental-friendly product design (e.g. avoidance of composite materials)
  - Etc.

➡ Verification by self declaration

Comparison of ecolabels for room AC worldwide

Country/Region	China	South Korea	Thailand	Scandinavia	Germany
Latest Version	2013	2013	2016	2018	2016
Energy Efficiency	SEER ≥ 5.4 SCOP ≥ 4.5 (units < 4.5 kW)	Fulfill first class Energy Efficiency Rating	EER > 2.82	SCOP ≥ 3.4 (EU climatic zone C)	SEER ≥ 7 SCOP≥ 4.6
Refrigerant	Ozone Depletion Potential (ODP) = 0; no GWP limit	ODP = 0 GWP ≤ 2,500	ODP = 0 GWP ≤ 2,500	ODP = 0 GWP ≤ 2,000	Halogen-free GWP < 10

1st manufaturer with Blue Angel certificate for room AC

- Single-split AC with 2.6 and 3.5 kW (9.000 and 12.000 BTU/h) cooling capacity
- Product information and ecolabel criteria: https://www.blauer-engel.de/en/products/electric-devices/stationary-air-conditioners

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Thank you for listening!

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