Austrian (draft) Radon Action Plan – Overview

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Radon Situation in Austria

„High radon risk country“

Ref.: WHO, 2009
1991 beginning of systematic and coordinated radon programme (based on the radon publications from ICRP and EU) →

Radon Recommendation by the Austrian Radiation Protection Commission (1992) with the following key elements:

- **action levels** for existing and new buildings (400 and 200 Bq/m³, respectively)
- the recommendation to set up a **radon potential map** of Austria
- the recommendation to set up **guidelines for mitigation and prevention**
- the recommendation to set up a folder to **inform the population**

§ 38b „Regulation concerning radon in dwellings“

The responsible ministry has to

• collect all radon data in a **central data base**
• set up appropriate radon **maps**
• inform the public on **regions with elevated radon potential**
• set up **recommendations** to reduce exposure to radon
• make available all relevant information to the public and the authorities
History

Radon Work based on „First Austrian Radon Action plan(s)“

Radon potential map

Pilot studies – radon behaviour, remediation, prevention

Pilot studies – public buildings, schools

Information – website, folders, Radon centre

Austrian Standards for Radon – 3 parts: Measurement, Prevention, Remediation

Radon
Teil 2: Technische Vorsorgeaumahnen bei Gebäuden

Radon — Part 2: Technical preventive measures for buildings
Radon — Partie 2: Méthodes de prevention pour les bâtiments
Directive 2013/59 / Euratom laying down basic safety standards for the protection arising from exposure to ionising radiation (EU-BSS)

Article 103 (1): Member States shall establish a national action plan addressing long-term risks from radon exposures in dwellings, buildings with public access and workplaces for any source of radon ingress, whether from soil, building materials or water. The action plan shall take into account the issues set out in Annex XVIII and be updated on a regular basis.

Annex XVII – Items to be considered in NRAP
ANNEX XVIII

List of items to be considered in preparing the national action plan to address long-term risks from radon exposures as referred to in Articles 54, 74 and 103

(1) Strategy for conducting surveys of indoor radon concentrations or soil gas concentrations for the purpose of estimating the distribution of indoor radon concentrations, for the management of measurement data and for the establishment of other relevant parameters (such as soil and rock types, permeability and radium-226 content of rock or soil).

(2) Approach, data and criteria used for the delineation of areas or for the definition of other parameters that can be used as specific indicators of situations with potentially high exposure to radon.

(3) Identification of types of workplaces and buildings with public access, such as schools, underground workplaces, and those in certain areas, where measurements are required, on the basis of a risk assessment, considering for instance occupancy hours.

(4) The basis for the establishment of reference levels for dwellings and workplaces. If applicable, the basis for the establishment of different reference levels for different uses of buildings (dwellings, buildings with public access, workplaces) as well as for existing and for new buildings.

(5) Assignment of responsibilities (governmental and non-governmental), coordination mechanisms and available resources for implementation of the action plan.

(6) Strategy for reducing radon exposure in dwellings and for giving priority to addressing the situations identified under point 2.

(7) Strategies for facilitating post construction remedial action.

(8) Strategy, including methods and tools, for preventing radon ingress in new buildings, including identification of building materials with significant radon calculation.

(9) Schedules for reviews of the action plan.

(10) Strategy for communication to increase public awareness and inform local decision makers, employers and employees of the risks of radon, including in relation to smoking.

(11) Guidance on methods and tools for measurements and remedial measures. Criteria for the accreditation of measurement and remediation services shall also be considered.

(12) Where appropriate, provision of financial support for radon surveys and for remedial measures, in particular for private dwellings with very high radon concentrations.

(13) Long-term goals in terms of reducing lung cancer risk attributable to radon exposure (for smokers and non-smokers).

(14) Where appropriate, consideration of other related issues and corresponding programmes such as programmes on energy saving and indoor air quality.
Implementation in Austria

The way to the Austrian radon action plan....

- Establish a national radon action plan (taking into account the issues set out in Annex XVIII EU-BSS)

Drafting of Radon action plan, National Radon centre with BMK
- (“Final”) Draft available since 2016, not published

Focus on drafting Radiation Protection Act, Radon Protection Ordinance

Radiation Protection Act 2020, BGBI. I No 50/2020 § 93:
- Establish a national radon action plan, taking into account the issues set in Annex XVIII EU-BSS
- Review every 10 years or in case of relevant changes in knowledge of effectiveness of measurements or health risk caused by radon and if applicable, update
- Develop strategies for implementation of the radon action plan (& evaluation)

Radon Action Plan draft – not up-to-date anymore – Revision in 2020

Coordination and Agreement with Provinces & Stakeholders ongoing

Publication planned: 2nd half of 2021
Austrian Radon Action Plan

Structure

- Motivation and overall goal
- Introduction
  - General – Radon
  - Radon situation in Austria
- Legal Basics
  - History
  - Legal basics for radon action plan
  - Reference Values
  - Building regulations, Standards
- Topics and Strategies – 8 topics
  - Evaluation of the action plan
  - Annex (Requirements EU-BSS/Annex XVIII)
Radon Action Plan

Chapter: “Topics and Strategies”

- 8 topics/fields

- Structure for each topic:
  - General goal
  - Status
  - Need for action
  - Possible actions to achieve the goal
  - Responsibilities
Radon Action Plan

8 topics/fields

- **Evaluation of radon risk** of the Austrian Population
- Radon protection of **new buildings**
- Radon protection of **existing buildings**
- Radon protection in **workplaces** and **buildings with public access**
- Radon protection in **education and training**
- Increasing **radon awareness**
- Possible connection and synergies of radon protection with other **relevant topics**
- Evaluation and adaption of **legal documents** and **standards**
Topics (Draft)
Evaluation of radon risk of the Austrian Population

General goal:
- Rn risk of the Austrian population is known and measures to reduce the risk are implemented

Status:
- National Rn survey, Rn map, Delineation of Rn areas exist

Possible actions:
- Regularly evaluation of radon risk in Austria
- Measurement campaigns to improve data basis
- Studies for additional relevant data (e.g. geological information, geogenic parameters, building factors)
- Development of a strategy including prioritisation for reduction of radon exposure of population

Responsibility:
- BMK
Topics (Draft)
Radon protection of new buildings

General goal:
• All new buildings have low radon concentrations, at least below the reference level

Status:
• Reference level exist, standard for Rn prevention exist; Rn prevention included in OIB guidelines; training exist

Possible actions:
• (Financial) support and guidance for radon preventive measures
• Promotion of „radon safe buildings“ – Information, training, building certificates
• Development and evaluation of technologies for radon preventive measures; if applicable: develop new standards
• Quality control of „radon prevention“ services/building companies – e.g. certification
• Evaluation of radon in building materials; develop a new standard

Responsibility:
• Federal states (legislation), BMK (information, training), Austrian standards
General goal:

• Radon concentrations in existing buildings is known and it is possible to reduce below the reference level with established remediation measures

Status:

• Reference level, measurement protocol, standard for Rn remediation, training for building professionals exist

Possible actions:

• (Financial) support for radon measurements in existing dwellings and measurement campaigns
• (Financial) support and guidance for radon remediation measures
• Development of a guideline/code of practice for radon remediation
• (Further) development of measurement methods (e.g. for real estate transfer)
• (Further) development and evaluation of remediation measures; Quality control of remediation services

Responsibility:

• Federal states (legislation), BMK (information, training), Austrian standards
Topics (Draft)
Radon protection in workplaces and buildings with public access

General goal:

- People are not exposed to unacceptable radon concentrations at workplaces and buildings with public access

Status:

- Regulations in Act & Ordinance, Studies at selected workplaces and buildings with public access

Possible actions:

- Information, guidance and support for „radon work places“
- Studies for radon remediation measures for specific needs of workplaces
- Best practice guidelines (remediation, radon protection measures) for workplaces
- Regular evaluation of up-to-date status (technical, scientific) of regulations

Responsibility:

- BMK (regulation, information), Federal states (control), Employers, Stakeholders (WKO, ÖVGW, AUVA, etc.)
Topics (Draft)

Radon protection in education and training

General goal:

• Radon topic is known in all relevant professional fields and age groups because of effective education and training

Status:

• Training of (regional) building authorities, building professionals, cooperation with relevant schools in the field

Possible actions:

• Identification of relevant (professional) groups and fields and the best way to reach them

• Including radon topic in curricula of education (universities, schools) for relevant fields (medical, construction, ventilation engineering, etc.)

• Including radon topic in training of professionals in the field (e.g. medical, construction, architects, indoor air quality)

• Specific courses for radon and radon protection for relevant groups (e.g. workers in specific workplaces, building regulators)

Responsibility:

• BMK (information, coordination), ministry for education, federal states, other relevant institutions
**Topics (Draft)**

**Increasing radon awareness**

**General goal:**
- Radon topic is known within the population and actively supported by decision makers

**Status:**
- Information work ongoing (radon.gv.at, radon map, folders, video, etc.)

**Possible actions:**
- (Further) development and adaption of the radon communication strategy (target group specific)
- Raising awareness of decision makers
- Raising awareness of employers
- Regular evaluation of effectiveness of awareness programmes and communication strategies (e.g. polls)

**Responsibility:**
- BMK (information, coordination), other ministries, federal states, other relevant institutions
Topics (Draft)
Connection of radon protection with other relevant topics

General goal:
- Synergies with other relevant topics (e.g. indoor air quality, energy saving) are used and connections are established

Status:
- Studies carried out in schools, kindergartens, etc. together with other indoor air quality parameters

Possible actions:
- Evaluation and support of possible connections/synergies for studies and information campaigns (e.g. indoor air quality, anti-smoking campaigns, cancer early detection programmes, etc.)
- Raising radon awareness in (thermal) retrofitting process
- Including radon in environmental and climate protection campaigns (e.g. klima:aktiv)

Responsibility:
- BMK (information, coordination), federal states (building regulation, building remediation), other relevant institutions
Topics *(Draft)*
Evaluation and adaption of legal documents and standards

**General goal:**
- Legal documents and standards provide basis for effective radon protection of the population and are up-to-date

**Status:**
- Radiation Protection Act & Radon Ordinances, OIB guidelines, radon standards exist

**Possible actions:**
- Regular evaluation of the implementation and possibility of implementation of legal basics
- Monitoring international and European regulations, guidelines, recommendations (EU, IAEA); adaption of Austrian regulation
- Participation in (international) standard groups (e.g. ISO) to be up-to-date about technical and scientific status
- Regular evaluation and adaption of Austrian standards

**Responsibility:**
- BMK (StrSchG, RnV), OIB (guidelines), federal states (building regulations), Austrian standards institute
Radon Action Plan

Implementation and Evaluation

Radiation Protection Act 2020, BGBl. I No 50/2020 § 93:

- Review every 10 years or in case of relevant changes in knowledge of effectiveness of measurements or health risk caused by radon and if applicable, update
- Develop strategies for implementation of the radon action plan and evaluate the effectiveness (in responsibility of BMK)

Radon action plan – explains status and need for action, provides possible general strategies

Detailed “Implementation Plans” (work programmes) need to be developed with detailed actions, resources, timing (only for few years; responsible organisations for their topics; best in coordinated working groups)

Evaluation of implementation effectiveness should be done by defined indicators (e.g. radon awareness of population, number of radon measurements carried out, number of remediated buildings, etc.)
Radon Action Plan

Next steps

- Appraisal phase finished
- Comments by federal states and stakeholders (OIB) discussed and taken into account, if applicable
- Finalisation of Radon Action Plan – until summer 2021
- Publication by BMK (webpage) – 2nd half of 2021
- (Translation into English)
- Development of implementation plan by BMK (and federal states, stakeholders) – establish a working group?
- Define evaluation criteria/indicators for effectiveness of implementation plan/measures/actions
- Implementation of actions/measures
- Evaluation of actions/measures
- Review and adaption of radon action plan at least every 10 years
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