Austrian Institute of Construction Engineering (OIB) Document defining nearly zero-energy buildings and setting intermediate targets for a national plan in accordance with Article 9(3) of Directive 2010/31/EU

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1 Introduction

This document is a draft for an Austrian 'national plan' for the minimum requirements for the energy performance of buildings in accordance with Article 9 of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings ('EPBD:2010'). These minimum requirements should be transposed in future versions of OIB Guideline 6. This draft basically contains:

- a detailed explanation of the practical implementation of the Austrian definition of nearly zero-energy buildings, taking account of the situation in Austria, based on the heating requirement (in kWh/m^{2}a), and includes numerical indicators for primary energy need (in kWh/m^{2}a) and carbon dioxide emissions (in kg/m^{2}a), expressed and set in keeping with the requirements for 2020;
- intermediate targets for improving the energy performance of new buildings for 2014 (to enter into force on 01.01.2015), 2016 (01.01.2017), 2018 (01.01.2019) and 2020 (01.01.2021) for new buildings and major renovations.

The systems of incentives to promote nearly zero-energy designs for new buildings before 2010 and the systems of incentives for major renovations of buildings converted to nearly zero-energy buildings are described in a separate document.

Proof of the cost-optimality of minimum requirements in accordance with Article 5 for new buildings and major renovations is explained in the OIB master document on cost-optimality in accordance with the EPBD:2010 and Regulation (EU) No 244/2012[1] or the Guidelines 2012/C 115/01.[2]

When establishing the minimum requirements for nearly zero-energy house standards and intermediate targets, the provinces agreed by a majority to lay down a carbon dioxide emission requirement, as well as a mandatory primary energy need.

All requirements in terms of the thermal insulation and energy savings (i.e. energy performance) of buildings are stipulated in Austria using four indicators:

- heating requirement;
- energy performance factor;
- primary energy need;

[1] Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012 supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements.

[2] Guidelines accompanying Commission Delegated Regulation of 16 January 2012 supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements (2012/C 115/01).

- carbon dioxide emissions.

Care must also be taken to ensure that account is taken of the electricity requirement (household electricity requirement for residential buildings or operating electricity requirement for non-residential buildings). This is added to the energy required for heating, cooling, ventilation, hot water and lighting during normal use of the building.

For non-residential buildings, the minimum requirements and intermediate targets are basically established by analogy with the requirements and intermediate targets for residential buildings, although negotiations on these minimum requirements for non-residential buildings have not yet been completed.

The reference climate is used as the minimum requirement for all four indicators; however, the provinces are free to base requirements on location.

Any changes to calculation methods must not cause an increase in minimum requirements.

2 Definitions

The definitions set out in the document 'OIB Guidelines — Definitions' apply.

3 Minimum energy performance requirements — New buildings (2014–2020)

OIB requirements for residential buildings up to and including 2020 are as follows:

	HR_{max}	FEN_{max}	$f_{EP,max}$	PEN_{max}	$CO2_{max}$
2014	16 x (1 + 3.0 /l_c)	using $HTEN_{Ref}$	0.90	190	30
2016	14 x (1 + 3.0 /l_c)	using $HTEN_{Ref}$		180	28
		or			
	16 x (1 + 3.0 /l_c)		0.85		
2018	12 x (1 + 3.0 /l_c)	using $HTEN_{Ref}$		170	26
		or			
	16 x (1 + 3.0 /l_c)		0.80		
2020	10 x (1 + 3.0 /l_c)	using $HTEN_{Ref}$		160	24
		or			
	16 x (1 + 3.0 /l_c)		0.75		

Similar/supplemented requirements are currently being developed for non-residential buildings.

4 Minimum energy performance requirements — Major renovations (2014–2020):

	HR_{max}	FEN_{max}	$f_{EP,max}$	PEN_{max}	$CO2_{max}$
2014	23 x (1 + 2.5 /l_c)	using $HTEN_{Ref}$		230	38
		or			
	25 x (1 + 2.5 /l_c)		1.10		
2016	21 x (1 + 2.5 /l_c)	using $HTEN_{Ref}$		220	36
		or			
	25 x (1 + 2.5 /l_c)		1.05		
2018	19 x (1 + 2.5 /l_c)	using $HTEN_{Ref}$		210	34
		or			
	25 x (1 + 2.5 /l_c)		1.00		
2020	17 x (1 + 2.5 /l_c)	using $HTEN_{Ref}$		200	32
		or			
	25 x (1 + 2.5 /l_c)		0.95		

[HR = heating requirements; FEN = final energy need; f_{EP} = energy performance factor; PEN = primary energy need; l_c = characteristic length; HTEN = heating technology energy need]

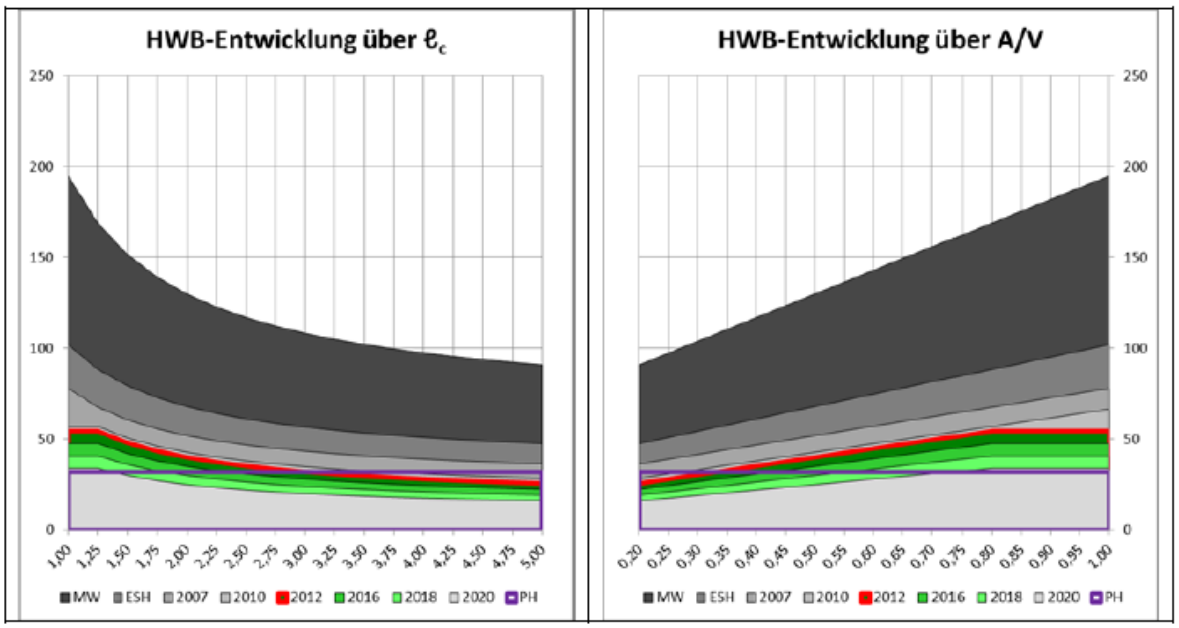
Exceptions to these minimum requirements are permitted if the measures needed cannot be implemented for structural or planning reasons.

Similar/supplemented requirements are currently being developed for non-residential buildings.

5 Intermediate target graphs

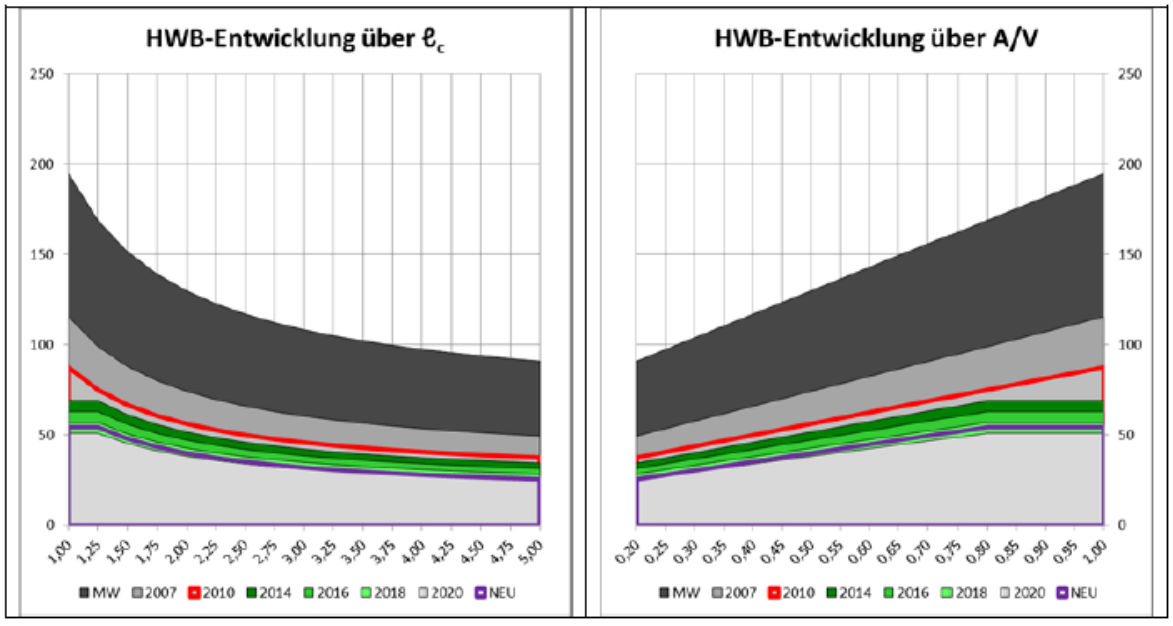
The two sections below plot the changes in requirements for new buildings and major renovations. The purple box represents the passive house standard on the graphs for new buildings and the current production of new buildings on the major renovation graphs.

5.1 Intermediate target graphs for new buildings



HR – Change over l_c (characteristic length) HR – Change over A/V

5.2 Intermediate target diagrams for major renovations



HR – Change over l_c (characteristic length) HR – Change over A/V