Eligibility Criteria – Residential Buildings in DE/SE/AT

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Vonovia SE – Green Bond
Eligibility criteria – residential assets in Germany

Economic Activtiy		Screening Criteria	Residential Buildings[1]
7.1 Construction of new buildings	**1**	**Nearly Zero-Energy Building** Primary energy demand[2] minus 10% *Built 2021 or newer*	At least 10% lower than the requirements for the primary energy demand of the "Nearly Zero-Energy Building" standard (NZEB). Based on the "Energy Performance of Buildings Directive (EBPD)", the NZEB standard is implemented in the GEG 2023 (Gebäudeenergiegesetz) requirements (updated version of the GEG 2020).
7.2 Renovation of existing buildings	**2**	**Major Renovation** Cost-optimal level[3]	The building complies with the applicable requirements for major renovations as defined in the Energy Performance of Buildings Directive (EPBD), based on the cost-optimal level as defined in EnEV 2016, GEG 2020 and GEG 2023. (EnEV 2016 as EnEV 2014 with amendments from 01.01.2016, GEG 2020 from 01.11.2020, GEG 2023 from 01.01.2023)
	3	**Property Upgrade** Relative improvement ≥ 30% in primary energy demand	Relative improvement in primary energy demand ≥ 30% in comparison to the performance of the building before the renovation.

[1]All residential buildings including Single-Family houses and Multi-Family houses | [2] Primary energy demand = Primärenergiebedarf |[3] The latest public available report on the calculation of 'cost-optimal levels of minimum energy performance requirements' is from August 2018, a revised version is expected to be published in 2024.

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Eligibility criteria – residential assets in Germany

Economic Activtiy		Screening Criteria	Residential Buildings
7.7 Acquisition and ownership of buildings	**4**	**Energy Performance Certificate** EPC at least class A *Built before 31/12/2020*	Energy Performance class A+ or A Final energy demand[4]: A+ ≤ 30 |A ≤ 50 kWh/(m²a)
	5	**Top 15% of the national building stock[5]** *Built before 31/12/2020*	Energy Performance class A+, A, or B with a final energy demand: A+ ≤ 30 | A ≤ 50 | B* ≤ 75 kWh/(m²a)[6,7]
	6		Primary energy demand: ≤ 74 kWh/(m²a) Primary energy demand: EnEV 2009 or better Final metered energy use[8]: ≤ 70 kWh/(m²a) Carbon intensity CO_2: ≤ 17 $kgCO_2$/(m²a)

[4] Final energy demand = Endenergiebedarf | [5] The EU Taxonomy Regulation focuses on primary energy demand in its eligibility criteria. In Germany, energy performance certificates (EPCs) can be issued based on calculated primary energy demand as well as metered primary energy consumption. In this study, therefore the top 15%- eligibility criteria are also indicated on metered consumption figures. | [6] Distinguishing between residential and non-residential existing national building stock, the top15% approach can be set to include the EPC label B for residential assets in Germany. However, we do recommend to further break it down into single-family and multi-family due to the available public information on the existing building stock and its distribution among the building usages in Germany. | [7] B* The official EPC label B is set < 75 kWh/(m²a). For Multi-Family houses, the top 15% threshold is set to EPC label B with a maximum of 69 kWh/(m²a), including not the full scale of the possible EPC label B range, due to the top15% distribution of the representative existing building stock in Germany.| [8] Final metered energy use = gemessener Endenergieverbrauch.

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Benchmarks – residential assets in Germany

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Ø-Reference values: Energy			Ø-Reference values: CO_2	
Building stock weighted reference benchmarks: End energy: Ø 138 kWh/(m²a) Primary energy factor: Ø 1.055 Primary energy: Ø 146 kWh/(m²a)	**Label**	**End energy demand**	Building stock weighted reference benchmark: CO_2-Intensity: Ø 0.240 kgCO2/kWh	Building stock weighted reference benchmark: 33.2 kgCO_2/(m²a)
	A+	≤ 30 kWh/(m²a)		
	A	≤ 50 kWh/(m²a)		
	B	≤ 75 kWh/(m²a)		
	C	≤ 100 kWh/(m²a)		
	D	≤ 130 kWh/(m²a)		
	E	≤ 160 kWh/(m²a)		
	F	≤ 200 kWh/(m²a)		
	G	≤ 250 kWh/(m²a)		
	H	> 250 kWh/(m²a)		

Vonovia SE – Green Bond
Eligibility criteria – residential assets in Sweden

Economic Activtiy		Screening Criteria	Single-Family	Multi-Family
7.1 Construction of new buildings	**1**	**Nearly Zero-Energy Building** Primary energy demand minus 10% *Built 2021 or newer*	At least 10% lower than the requirements for the primary energy demand of the "Nearly Zero-Energy Building" standard (NZEB). Based on the "Energy Performance of Buildings Directive (EBPD)", the NZEB standard is implemented in the BFS 2011:6 with BBR 29 requirements.	
	2		NZEB-10%: Small SFH: PED ≤ 90 kWh/(m²a) Medium SFH: PED ≤ 86 kWh/(m²a) Large SFH: PED ≤ 81 kWh/(m²a)	NZEB-10%: MFH: PED ≤ 67 kWh/(m²a)
7.2 Renovation of existing buildings	**3**	**Major Renovation** Cost-optimal level	Major renovation meets cost-optimal minimum energy performance requirements in accordance with the Energy Performance of Buildings Directive (EBPD).	
	4		Small SFH: PED ≤ 100 kWh/(m²a) Medium SFH: PED ≤ 95 kWh/(m²a) Large SFH: PED ≤ 090 kWh/(m²a)	MFH: PED ≤ 75 kWh/(m²a)
	5	**Property Upgrade** Relative improvement ≥ 30% in primary energy demand	Relative improvement in primary energy demand ≥ 30% in comparison to the performance of the building before the renovation[1].	

Drees & Sommer building criteria are based on EU Taxonomy (Delegated Act – July 2021). Criteria are valid for assets located in Sweden. |[1] Reductions through renewable energy sources are not taken into account according to the EU Taxonomy.

Vonovia SE – Green Bond
Eligibility criteria – residential assets in Sweden

Economic Activtiy		Screening Criteria	Single-Family	Multi-Family
7.7 Acquisition and ownership of buildings	**6**	**Energy Performance Certificate** EPC at least class A *Built before 31/12/2020*	Energy Performance class A or better	
	7	**Top 15% of the national building stock** *Built before 31/12/2020*	Energy performance class A, B or C A ≤ 50% | B > 50% ≤ 75% | C >75% ≤ 100% of the notional building‘s energy demand	
	8		Primary energy demand requirements of building energy code BBR 12:2006 or better.	

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Benchmarks – residential assets in Sweden

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Ø-Reference values: Energy			Ø-Reference values: CO_2	
Building stock weighted reference benchmarks: End energy: Ø 112.2 kWh/(m²a) Primary energy factor: Ø 1.045 Primary energy: Ø 117.3 kWh/(m²a)	**Label**	**End energy demand**	Building stock weighted reference benchmark: CO_2-Intensity: Ø 0.054 kgCO_2/kWh	Building stock weighted reference benchmark: 6.1 kgCO_2/(m²a)
	A	≤ 50 %		
	B	> 50 - ≤ 75 %		
	C	> 75 - ≤ 100 %		
	D	> 100 - ≤ 135 %		
	E	> 135 - ≤ 180 %		
	F	> 180 - ≤ 235 %		
	G	> 235 %		
	… percentage of the requirement for a new building			

Vonovia SE – Green Bond
Eligibility criteria – residential assets in Austria

Economic Activtiy		Screening Criteria	Single-Family	Multi-Family
7.1 Construction of new buildings	**1**	**Nearly Zero-Energy Building** Primary energy demand minus 10% *Built 2021 or newer*	At least 10% lower than the requirements for the primary energy demand of the "Nearly Zero-Energy Building" standard (NZEB). Based on the "Energy Performance of Buildings Directive (EBPD)", the NZEB is set in "OIB-RL6"-"Nationaler Plan" (OIB-330.6-005/18).	
	2		New Construction: NZEB-10%: $PED_{H,n.ren.} \leq 36.9$ kWh/m²$_{GFA}$a	
7.2 Renovation of existing buildings	**3**	**Major Renovation** Cost-optimal level	Major renovation meets cost-optimal minimum energy performance requirements in accordance with the Energy Performance of Buildings Directive Requirements for total energy efficiency as referenced in "OIB-RL6:2015" (OIB-330.6-009/15) or newer or $PED_{H,n.ren.} \leq 44$ kWh/m²$_{GFA}$a or energy efficiency factor $f_{GEE,(RK)} \leq 1.05$	
	4	**Property Upgrade** Relative improvement ≥ 30% in primary energy demand	Relative improvement in non-renewable primary energy demand ≥ 30% in comparison to the performance of the building before the renovation.	

Drees & Sommer low carbon building criteria are based on EU Taxonomy (Delegated Act – June 2021 – technical criteria for climate change mitigation). Criteria are valid for assets located in Austria. Assets do need to comply only with one of the criteria 1) – 8) to proof eligibility, according to the corresponding asset category and usage.

Vonovia SE – Green Bond
Eligibility criteria – residential assets in Austria

Economic Activtiy		Screening Criteria	Single-Family	Multi-Family
7.7 Acquisition and ownership of buildings	**5**	**Energy Performance Certificate** EPC at least class A *Built before 31/12/2020*	Energy performance certificate with energy efficiency rating of A or better. - heating demand $HWB_{Ref,SK}$ of 25 kWh/m²$_{GFA}$a or less, or - energy efficiency factor $f_{GEE,SK}$ of 0.85 or less, or - primary energy demand PEB_{SK} of 80 kWh/m²$_{GFA}$a or less	
	6	**Top 15% Building Energy Code** *Built before 31/12/2020*	All counties: OIB-R6-2007 (OIB-300.6-038/07) with stringency of 01.01.2010	Burgenland: OIB-R6-2015; Vorarlberg: OIB-R6-2011; All other counties: OIB-R6-2007 with string. 01.01.2010
	7	**Top 15%** Year of construction/ permit *Built before 31/12/2020*	Salzburg: 2012; All other counties: 2010	Burgenland: 2017; Vorarlberg: 2013; Salzburg: 2012; All other counties: 2010
	8	**Top 15%** *Major Renovation*	Oberösterreich: 2018; All other counties: 2017	Oberösterreich: 2018; Burgenland, Vorarlberg: 2022; All other counties: 2017

Drees & Sommer low carbon building criteria are based on EU Taxonomy (Delegated Act – June 2021 – technical criteria for climate change mitigation). Criteria are valid for assets located in Austria. Assets do need to comply only with one of the criteria 1) – 8) to proof eligibility, according to the corresponding asset category and usage.

Vonovia SE – Green Bond
Benchmarks – residential assets in Austria

Ø-Reference values: Energy			Ø-Reference values: CO_2	
Single-Family	Primary energy factor mean residential (heating, hot water): 1.277	Building-weighted reference benchmark: FED_H = 299.4 kWh/m^2_{GFA}a PED_H = 382.3 kWh/m^2_{GFA}a	CO_2 emission intensity mean residential (heating, hot water): 0.135 $kgCO_2$/kWh	Building-weighted reference benchmark (heating, hot water): 40.5 $kgCO_2$/m^2_{GFA}a
Multi-Family		Building-weighted reference benchmark: FED_H = 189.6 kWh/m^2_{GFA}a PED_H = 242.0 kWh/m^2_{GFA}a		Building-weighted reference benchmark (heating, hot water): 25.6 $kgCO_2$/m^2_{GFA}a

FED_H = final energy demand for heating and hot water; PED_H = primary energy demand for heating and hot water; GFA = heated gross floor area