



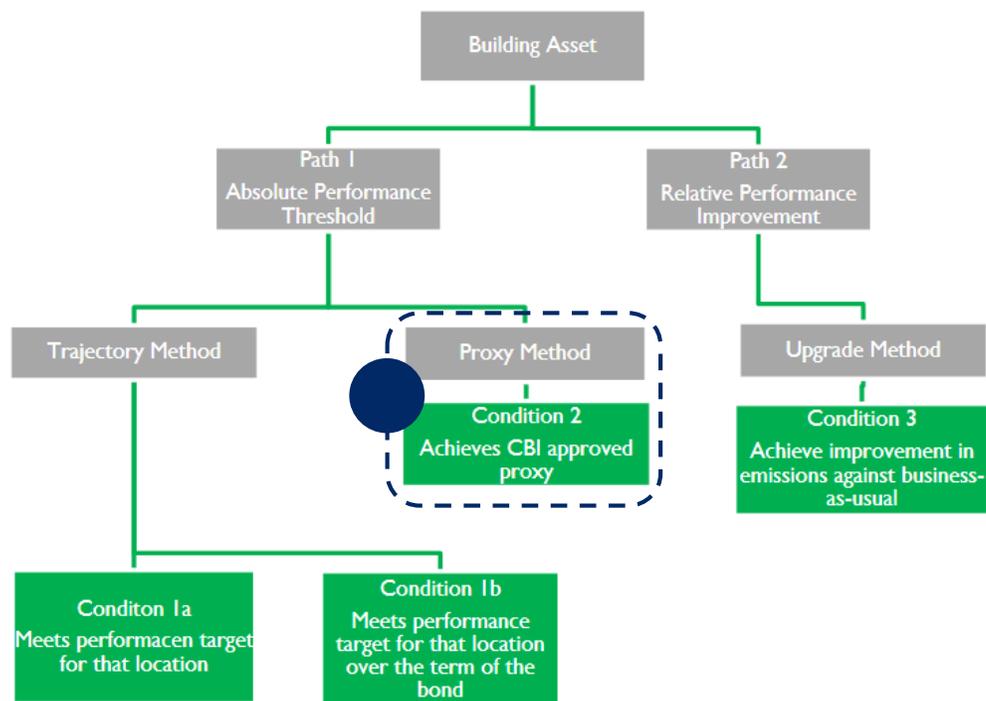
DREES &
SOMMER

GREEN BONDS SUSTAINABILITY CONSULTING SERVICES mBANK HIPOTECZNY

Methodology – 24.04.2020 – Claudio Tschätsch

GREEN BONDS

Method & Process



Climate Bonds Initiative – Low Carbon Buildings

Low Carbon Buildings (Commercial and Residential)

Green Bond asset is within the **Top 15%** of its local market

DRAFT

Climate Bonds INITIATIVE

Residential Property Climate Bonds

Certification methodology

Low Carbon Buildings Technical Working Group

Version 1.0

Climate Bonds Initiative

Method 1: Benchmarking against local market carbon performance

Method 2: Relative stringency of energy labels and rating tools

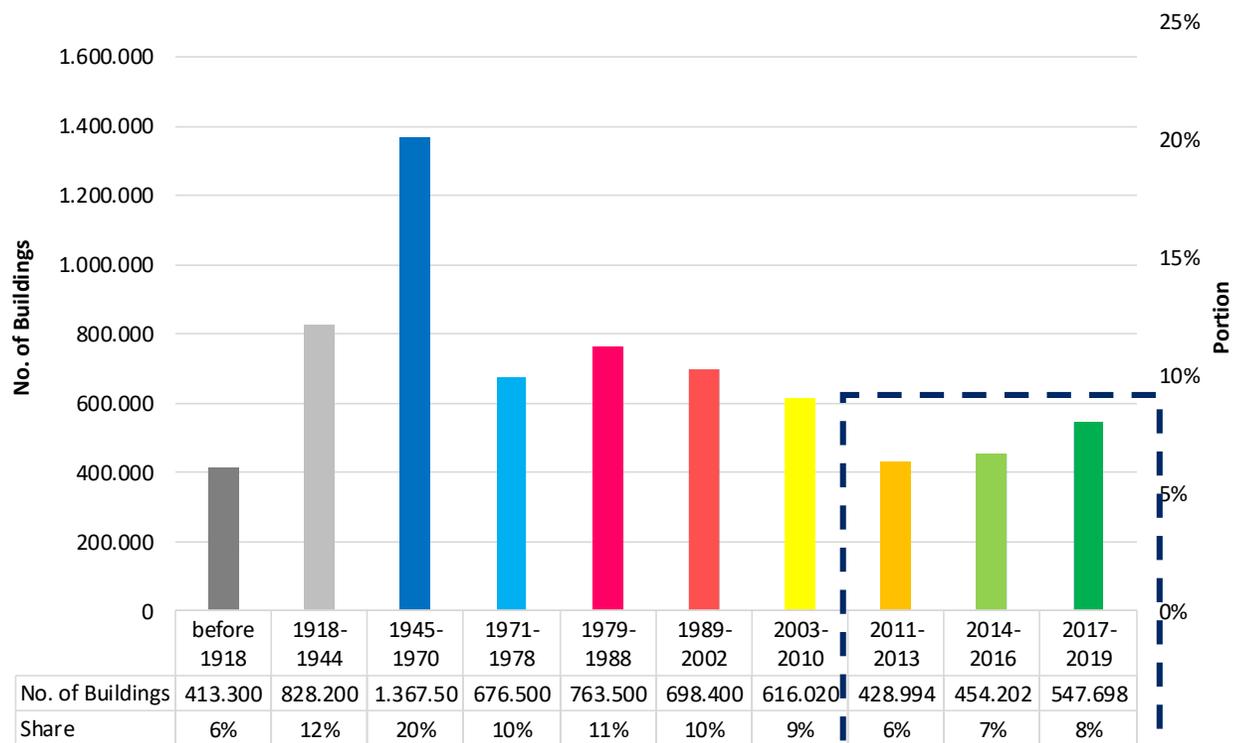
- Identification of a Database,
- Confirmation of sufficient sample size,
- Confirmation of representative Database,
- Determination of Minimum Criteria for Climate Bonds Certification.

GREEN BONDS

Poland's residential building stock and energy building codes

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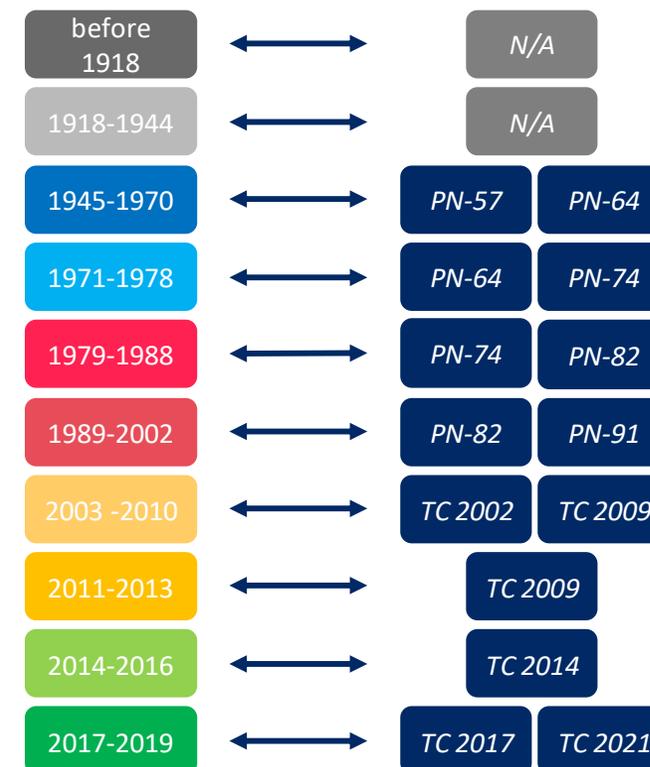
Number of Buildings



Drees & Sommer figure based on NEEAP 2017, TABULA/NAPE 2012, BPIE 2016, Central Statistical Office 2013, with extrapolated data from Statistics Poland 2019

2011: ≈ 6 million residential buildings and ≈ 13.7 million residential dwellings

Referenced Building energy codes

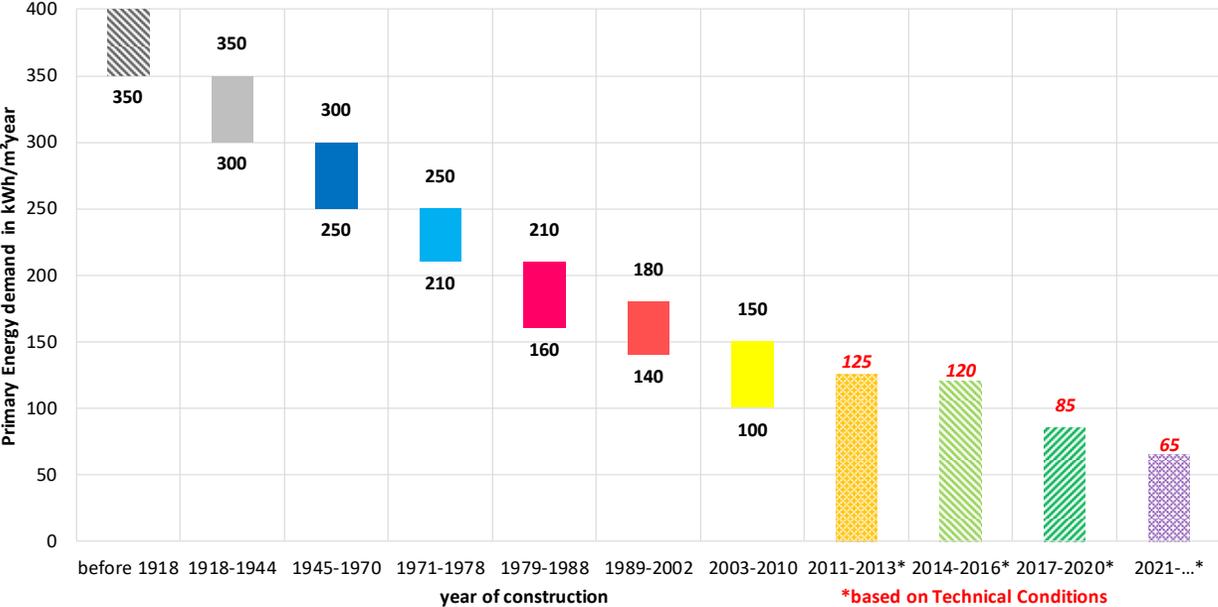


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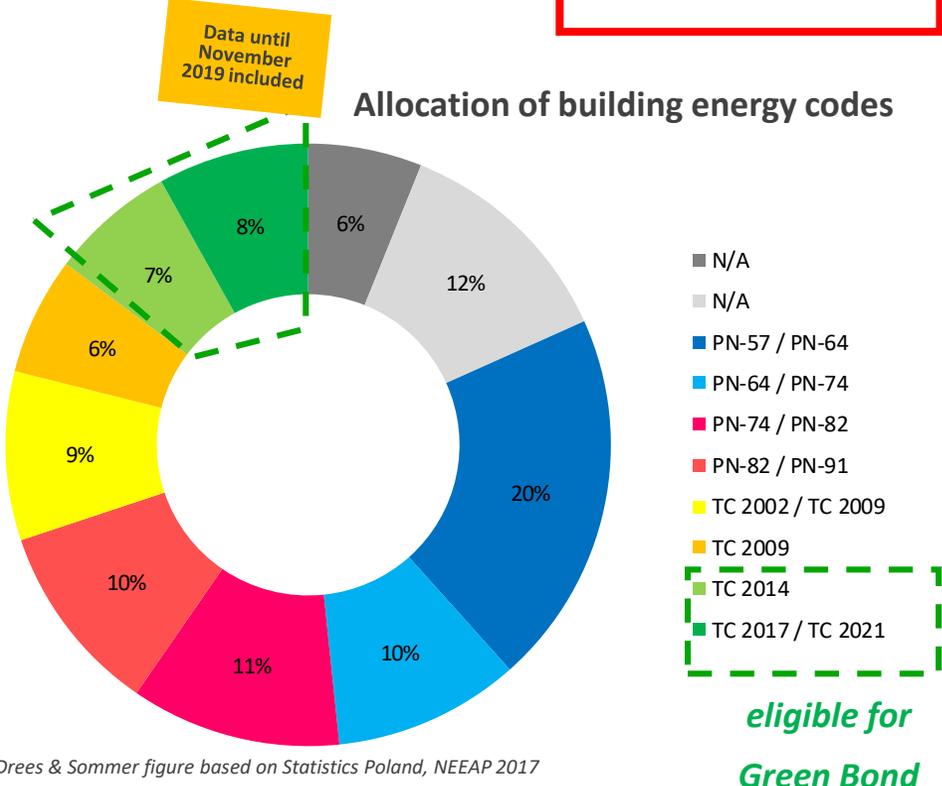
GREEN BONDS

Primary energy demand and allocated building energy codes

range primary energy demand



Drees & Sommer figure based on NEEAP 2017, TABULA/NAPE 2012, BPIE 2016



Drees & Sommer figure based on Statistics Poland, NEEAP 2017

Non-renewable primary energy demand:

- Heating,
- Hot Water,
- Cooling,
- Lighting (excluded for residential buildings),
- processing and delivery of an energy carrier.

Green Bond asset is within the **Top 15%** of its local market, if:

Technical Condition is TC 2014 or newer

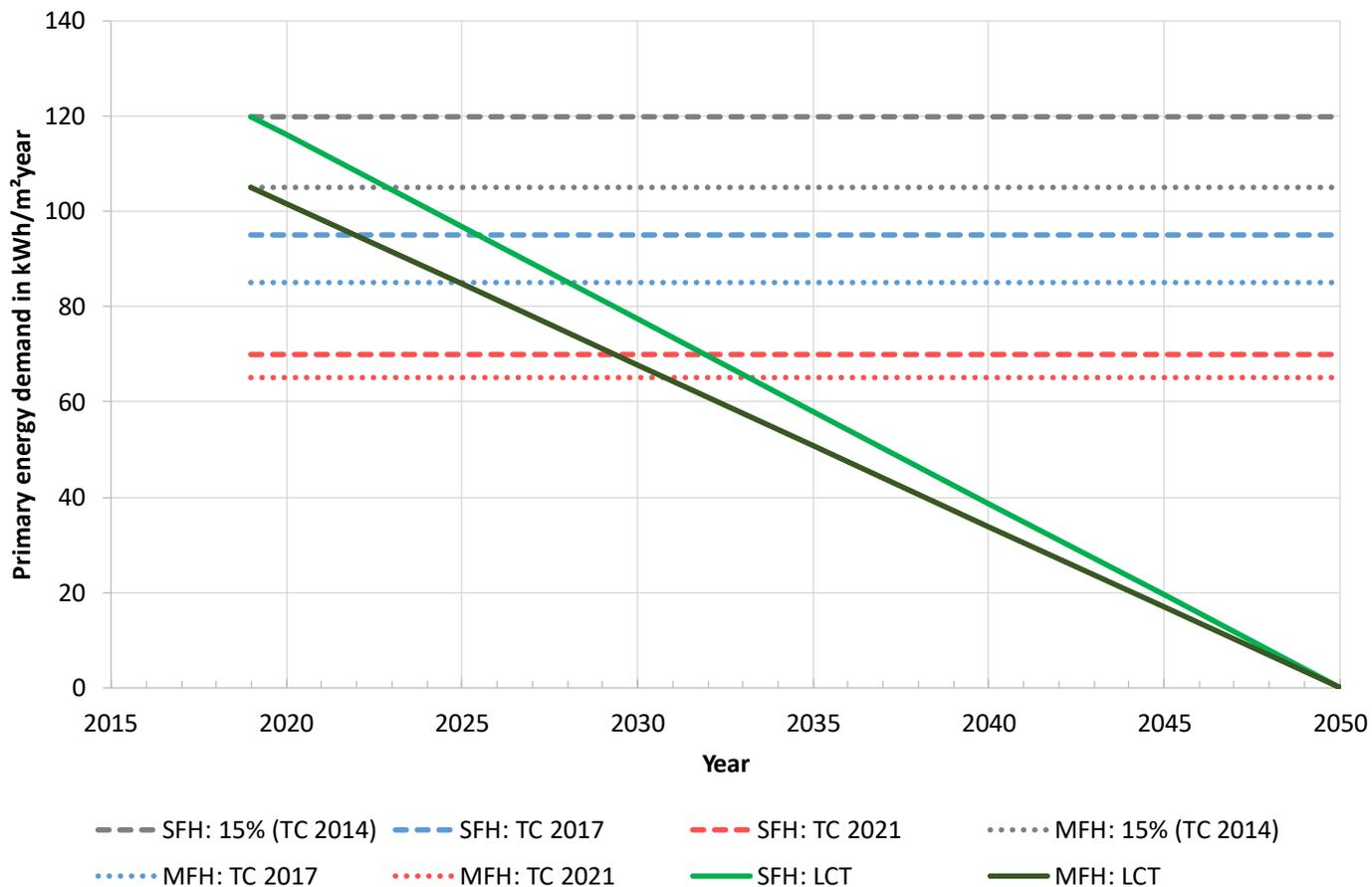
(TC 2009 positions the assets within the top 16% to 21% of the local market and does not qualify.)



GREEN BONDS

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Future primary energy demand requirement – Low carbon trajectories (LCTs)



A **low carbon trajectory (LCT)** connects:

- the basis requirements of TC 2014 (SFH: PE ≤ 120 | MFH: PE ≤ 105 kWh/m²/year) as the start in the year **2019**

towards

- the **Zero-Emission-Goal** in **2050** with zero non-renewable primary energy.

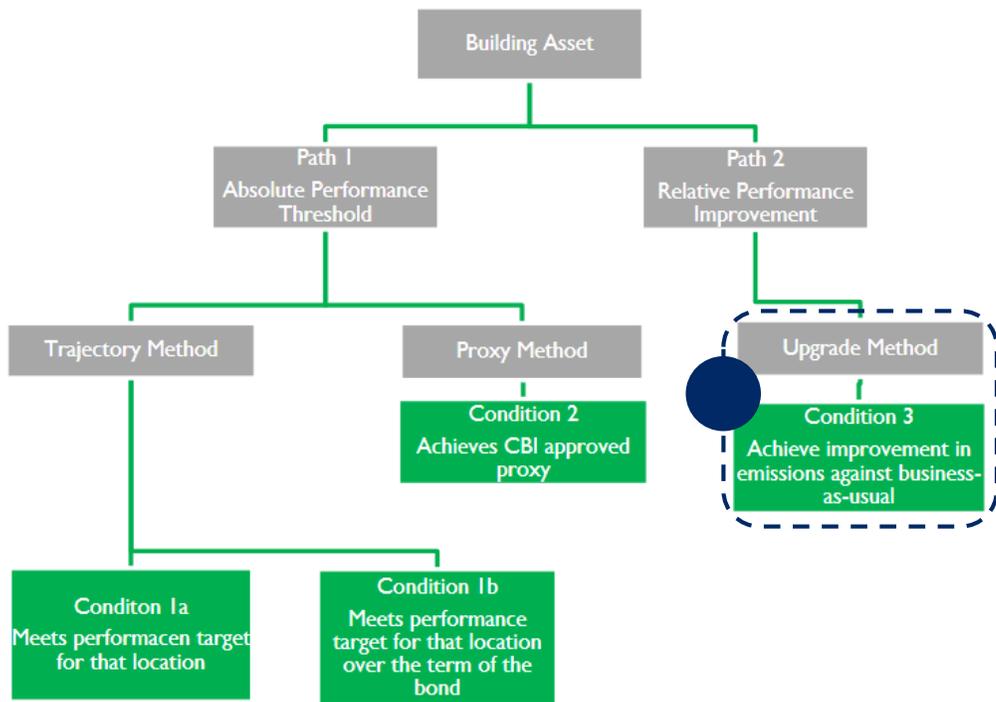
The **low carbon trajectories** for **single-** and **multifamily** houses serve as the **15th percentile** baseline for the local polish residential market.

SFH = Single Family House
 MFH = Multi-Family House
 TC = Technical Condition
 LCT = Low carbon trajectory

GREEN BOND

Process & Eligibility – Property Upgrades

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Climate Bonds Initiative – Low Carbon Buildings



Property Upgrade Climate Bonds

Certification methodology

Low Carbon Buildings Technical Working Group

Climate Bonds Initiative

Version 1.0



Property **Upgrade** include assets which undergo or have undergone

- major renovation,
- refurbishment,
- thermo-modernization,
- or energy efficiency upgrade

Green Covered Bond assets require **improvements** which result in reductions of **30% or more** in:

- carbon emissions (non-renewable primary energy)

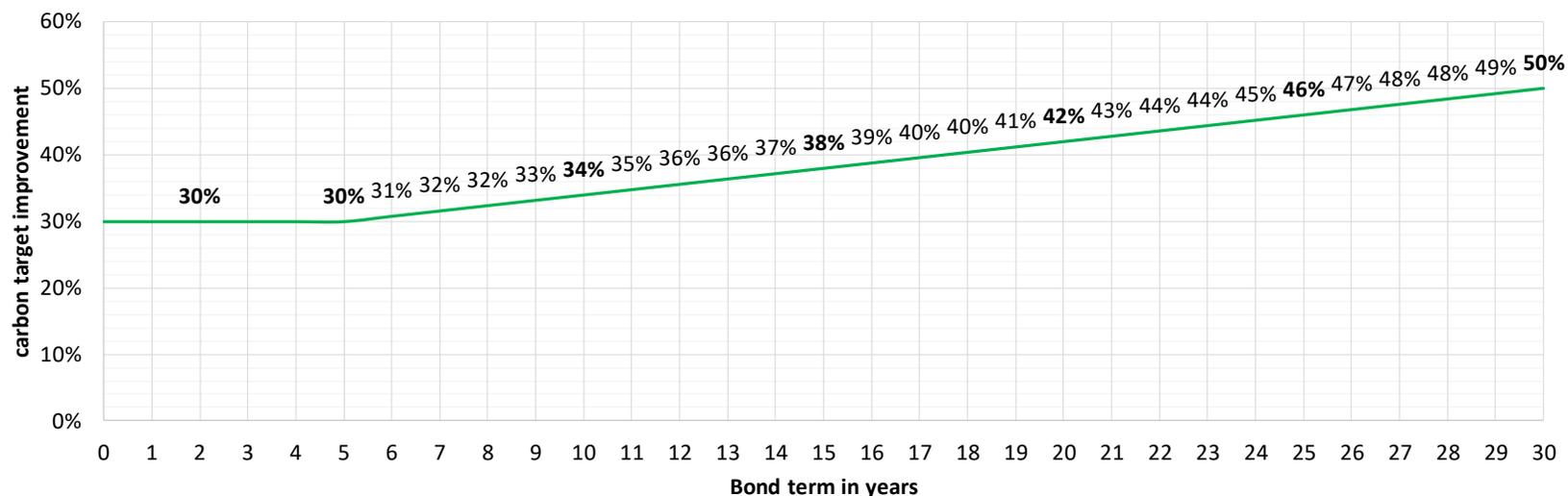
based on green bond duration

GREEN BOND

Property Upgrades – carbon emissions improvement

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Example: Single Family House



Drees & Sommer figure based on CBI's property upgrade guidance

Green Bond assets require **improvements** which result in reductions of **30% or more** in:

- carbon emissions (based on primary energy savings)

depending on the green bond duration.

Before upgrade:

Year of construction = 1992
Technical condition = PN 91
Primary Energy Demand = 160 kWh/m²/year
Carbon Emissions = 61 tCO₂/m²/year

After upgrade:

Year of renovation = 2019
Technical condition = TC 2017
Primary Energy Demand = 95 kWh/m²/year
Carbon Emissions = 36 tCO₂/m²/year

Improvement: ≈ 41%

Eligibility for **Green Bond**:



SUSTAINABLE FINANCE

EU Commission Action Plan– Technical Expert Group

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Action Plan

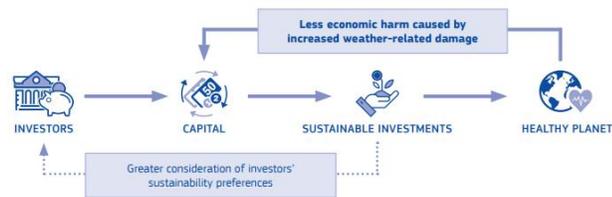
Key Challenges

TEG - Group



SUSTAINABLE FINANCE

- Major investments are needed to transform the EU economy to deliver on climate, environmental and social sustainability goals, including the Paris Agreement and the UN Sustainable Development Goals.
- Sustainable finance makes sustainability considerations part of financial decision-making. This means more low-carbon, energy- and resource-efficient circular projects.
- Integrating sustainability considerations will mitigate the impact of natural disasters as well as environmental and social sustainability issues that can affect the economy and financial markets.



WHAT CHALLENGES DOES THE ACTION PLAN ADDRESS?

KEY CHALLENGES	ACTIONS	
No common definition of 'sustainable investment'	EU classification (taxonomy) for sustainable activities	RELIABLE INFORMATION
Risk of 'greenwashing' of investment products	Standards and labels for 'green' financial products give investors certainty	
Banks and insurers often give insufficient consideration to climate and environmental risks	Study if capital requirements should reflect exposure to climate change and environmental risks	SUSTAINABILITY AND RISK MANAGEMENT
Investors often disregard sustainability factors or underestimate their impact	Clarify institutional investor duties to consider sustainable finance when allocating assets	
Too little information on corporate sustainability-related activities	Enhancing non-financial information disclosure	LONG-TERMISM IN GOVERNANCE



Home > Publications > Technical expert group on sustainable finance (TEG)

Technical expert group on sustainable finance (TEG)

- EU Taxonomy
- EU Green Bond Standard
- EU climate benchmarks
- EU guidance corporate disclosures

SUSTAINABLE FINANCE

EU Taxonomy for climate change mitigation and climate change adaptation

December 2018 – January 2019:

TEG published an early **feedback report** which contained a first set of climate change mitigation activities and their **technical screening criteria**, together with a call for feedback on the proposed criteria.

Begin 2019:

Development of **technical screening criteria - taxonomy**

June 2019:

Draft Technical report with an overview of all of the proposed activities, taking on board the feedback received on the 1st round of activities and the input from the additional experts.

The report also provides more details on what the taxonomy is, what it is not, and how to use it in practice. The June 2019 report was accompanied by a call for feedback over the summer.

December 2019:

The **European Green Deal** is introduced as an overarching framework and programme of actions to **transform** the **European economy**. Key component is the **“Climate Law”** to achieve **climate neutrality** by **2050**.

March 2020:

The TEG has analyzed the feedback received and provided its **final recommendations** to the European Commission by mid of March 2020.

→ **Classification** system for sustainable activities (short: **Taxonomy**)



Summary



Methodology

*Mitigation, Adaptation
+ DNSH*



Spreadsheets & Tables

SUSTAINABLE FINANCE

EU Taxonomy (March 2020)

Buildings	
Sector classification and activity	
Macro-Sector	F – Construction
NACE Level	2
Code	F41, F43
Description	Construction of new buildings. This relates to activities under NACE codes F41.1 - Development of building projects and F41.2 - Construction of residential and non-residential buildings.
Mitigation criteria	
Principle	<p>The construction of new buildings designed to minimise energy use and carbon emissions throughout the lifecycle can make a substantial contribution to climate change mitigation by saving large part of the energy and carbon emissions that would be associated with conventionally designed buildings.</p> <p>Condition for non-eligibility: to avoid lock-in and undermining the climate mitigation objective, the construction of new buildings designed for the purpose of extraction, storage, transportation or manufacture of fossil fuels is not eligible.</p> <p>Use of alternative schemes as proxies: outside EU Member States, established schemes such as 'green building' certifications or building regulations and standards may be used as alternative proof of eligibility, provided that this is verified by the Sustainable Finance Platform. The organisation responsible for the scheme will be able to apply for official recognition of its scheme by presenting evidence that a specific level of certification/regulation can be considered equivalent (or superior) to the taxonomy mitigation and DNSH threshold for the relevant climatic zone and building type. The Sustainable Finance Platform will assess the evidence and approve or reject the application.</p>
Metric and threshold	<p>The metric is Primary Energy Demand (PED), defining the energy performance of a building: the annual primary energy demand associated with regulated energy use during the operational phase of the building life-cycle (i.e. 'module B6' as defined in EN15978), calculated ex-ante according to the national methodologies for asset design assessment, or as defined in the set of standards ISO 52000, expressed as kWh/m² per year.</p> <p>The threshold is based on 'nearly zero-energy building' (NZEB) requirements, which are defined in national regulation implementing the EPBD and are mandatory for all new buildings across EU Member States from 2021. To be eligible, the net primary energy demand of the new construction must be at least 20% lower than the primary energy demand resulting from the relevant NZEB requirements.⁴¹⁸ This reduction can be met through a direct decrease of the</p>

⁴¹⁸ The PED is either directly expressed by NZEB requirements or is derived by applying those requirements and calculating the resulting PED. When NZEB requirements specify a PED, the percentage improvement should be applied to this figure.



Mitigation:

Buildings built after December 31th, 2020:

Compliance with 20% reduction of local Nearly-Zero-Energy Building (NZEB)

Buildings built before December 31th, 2020:

Compliance with best-in-class **Top15% approach**.

Technical Expert Group (TEG) Recommendation:

- The Top 15%-approach is eligible until December 31th, 2025.
- Until the end of 2024, the Top 15% needs to be expressed in representative energy & carbon emissions thresholds.

Drees & Sommer:

The Top15%-approach can be proofed to be either:

- Energy or carbon performance based on energy demand or consumption,
- Energy performance certificate with certain EPC label/rating,
- Building energy code,
- Year of construction,
- Green Building certificates as proxies (e.g. DGNB, LEED, BREEAM...).

GREEN BOND

Climate Bonds Initiative (CBI)-certified eligibility criteria

Green Bond criteria <i>The object fulfills one of the following criteria:</i>			Residential <i>Single-Family</i>	Residential <i>Multi-Family</i>
Climate Bonds Initiative	New Construction	1)	New buildings complying with Technical Note 2017 or later by year of construction are automatically eligible for qualification for bonds where the mid-point of the bond term is no later than 2025.	
	New Construction or Existing Buildings	2)	<u>Year of bond issuance = 2020 – 2025:</u> TC 2017 with a linear decreasing bond term (mid point) of 6 years in 2020 and 1 year in 2025 or <u>Year of bond issuance = 2026 – 2032:</u> TC 2021 or year of construction = 2021 with a linear decreasing bond term (mid point) of 7 years in 2026 and 1 year in 2032	<u>Year of bond issuance = 2020 – 2025:</u> TC 2017 with a linear decreasing bond term (mid point) of 6 years in 2020 and 1 year in 2025 or <u>Year of bond issuance = 2026 – 2031:</u> TC 2021 or year of construction = 2021 with a linear decreasing bond term (mid point) of 6 years in 2026 and 1 year in 2031
	Existing Buildings	3)	<u>Year of bond issuance = 2020 – 2025:</u> Year of construction = 2017 with a linear decreasing bond term (mid point) of 6 years in 2020 and 1 year in 2025 or <u>Year of bond issuance = 2026 – 2032:</u> Year of construction = 2021 with a linear decreasing bond term (mid point) of 7 years in 2026 and 1 year in 2032	<u>Year of bond issuance = 2020 – 2025:</u> Year of construction = 2017 with a linear decreasing bond term (mid point) of 6 years in 2020 and 1 year in 2025 or <u>Year of bond issuance = 2026 – 2031:</u> Year of construction = 2021 with a linear decreasing bond term (mid point) of 6 years in 2026 and 1 year in 2031
	Existing Buildings	4)	Major renovation with an improvement in the CO2 emissions figure from EPC from before and after the retrofit, based on tenor of bond, which meet the requirement of Technical Note 2014 (issued after July 2015). Minimum improvement in carbon emissions ≥ 30% . Term 1-5 years: 30% improvement Term 5-30 years: 30%-50% linear improvement Term ≥ 30 years : 50% improvement	

Residential criteria are based on Climate Bonds Initiative's Low carbon certification methodology. Criteria are valid for assets located in the Republic of Poland. Criteria and Tresholds are subject to change.

GREEN BOND

EU Taxonomy-aligned eligibility criteria

Green Bond criteria <i>The object fulfills one of the following criteria:</i>			 Residential <i>Single-Family</i>	 Residential <i>Multi-Family</i>
EU Taxonomy 	New Construction or Existing Buildings	1) Energy standard & Primary energy demand Buildings built after December 31 th , 2020	20% reduction in Primary Energy Demand (PED) of Nearly-Zero-Energy-Building (NZEB) Standard based on Energy Performance of Buildings Directive (EPBD), implemented in Technical Condition 2021 (TC 2021) NZEB-20%: PED ≤ 56 kWh/m ² year	NZEB-20%: PED ≤ 52 kWh/m ² year
		2) Top 15%-approach (best-in-class) Buildings built before December 31 th , 2020	Primary Energy Demand (PED) of Nearly-Zero-Energy-Building (NZEB) Standard based on Energy Performance of Buildings Directive (EPBD), implemented in Technical Condition 2021 (TC 2021) NZEB: PED ≤ 70 kWh/m ² year Alternative: <i>Climate Bonds Initiative established criteria for Energy standard or newer / Year of construction is equal or newer</i>	NZEB: PED ≤ 65 kWh/m ² year
	Existing Buildings	3) Renovation	Major renovation meets cost-optimal minimum energy performance requirements in accordance with the Energy Performance of Buildings Directive (EPBD). Requirements for primary energy demand as referenced in TC 2014 and cost optimum report for Poland. or Relative improvement in primary energy demand ≥ 30% in comparison to the performance of the building before the renovation.	

Residential criteria are based on EU Taxonomy March 2020. Criteria are valid for assets located in the Republic of Poland. Criteria and Tresholds are subject to change.

GREEN BOND

Green Bond Framework

Low carbon residential buildings

- New or existing residential buildings built after December 31th,2020 complying with 20% reduction in Primary Energy Demand (PED) of Nearly-Zero-Energy-Building (NZEB) Standard in Poland.
- New or existing residential buildings built before December 31th,2020 complying with the requirements in Primary Energy Demand (PED) of Nearly-Zero-Energy-Building (NZEB) Standard in Poland
- New or existing residential buildings built before December 31th,2020 belonging to top 15% low carbon buildings in Poland.
- Refurbished existing residential buildings with primary energy savings of at least 30% against the building performance before the renovation.
- Refurbished existing buildings or renovations designed to fulfill the cost-optimal minimum energy performance requirements of national or regional requirements for ‘major renovation’ as defined in the Energy Performance of Buildings Directive.

Threshold is subject to change, based on EU Taxonomy.

- New or existing residential buildings with an Energy Performance Certificate (EPC) in compliance with CBI’s established Residential Proxy based on year of bond issuance and bond duration:

Single-Family House with an annual energy consumption or demand less than or equal to 95 kWh per square meter per year.

Multi-Family House with an annual energy consumption or demand less than or equal to 85 kWh per square meter per year.

Threshold is subject to change, based on year of bond issuance, bond duration and is mandatory to comply with established 2050 zero-carbon linear trajectories for single-family or multi-family house in compliance with Climate Bonds Initiative’s criteria for low carbon buildings.

- New or existing residential buildings with year of construction in compliance with CBI’s established Residential Proxy based on year of bond issuance and bond duration:
Single-Family or Multi-Family House built after 2017, based on the year of construction.

Threshold is subject to change, based on year of bond issuance, bond duration and is mandatory to comply with Climate Bonds Initiative’s criteria for low carbon buildings.

- Refurbished existing residential buildings with an improved energy efficiency reducing carbon emissions of at least 30% based on bond term.

The background is a blue-tinted photograph of a modern city street. Tall buildings line the street, and a network of white lines and dots is overlaid on the right side, suggesting a digital or infrastructure theme. The text is centered in white, bold, uppercase letters.

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