

**ENERGY
EFFICIENT
MORTGAGES**
Netherlands



Zorgeloos Vastgoed Inspiratiesessie – 24 October 2023

Energy Efficient Mortgages NL Hub



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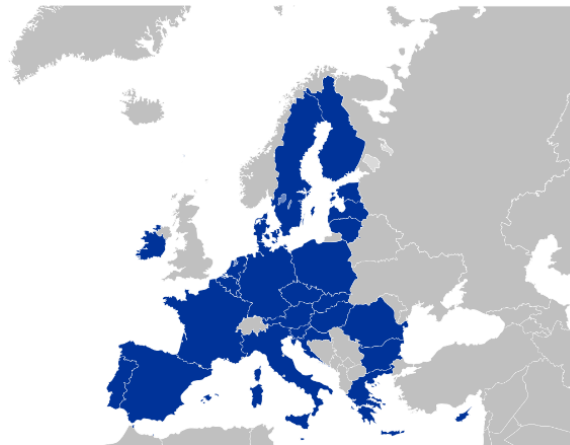
*Energy efficiency in the
Dutch market*

Energy Efficiency of the EU Building Stock

In the EU 27 there are...



445
million people



247 million
dwellings



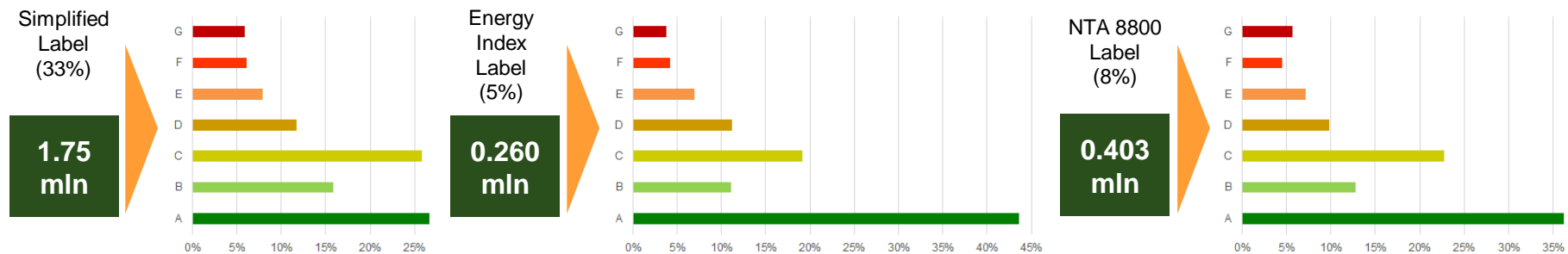
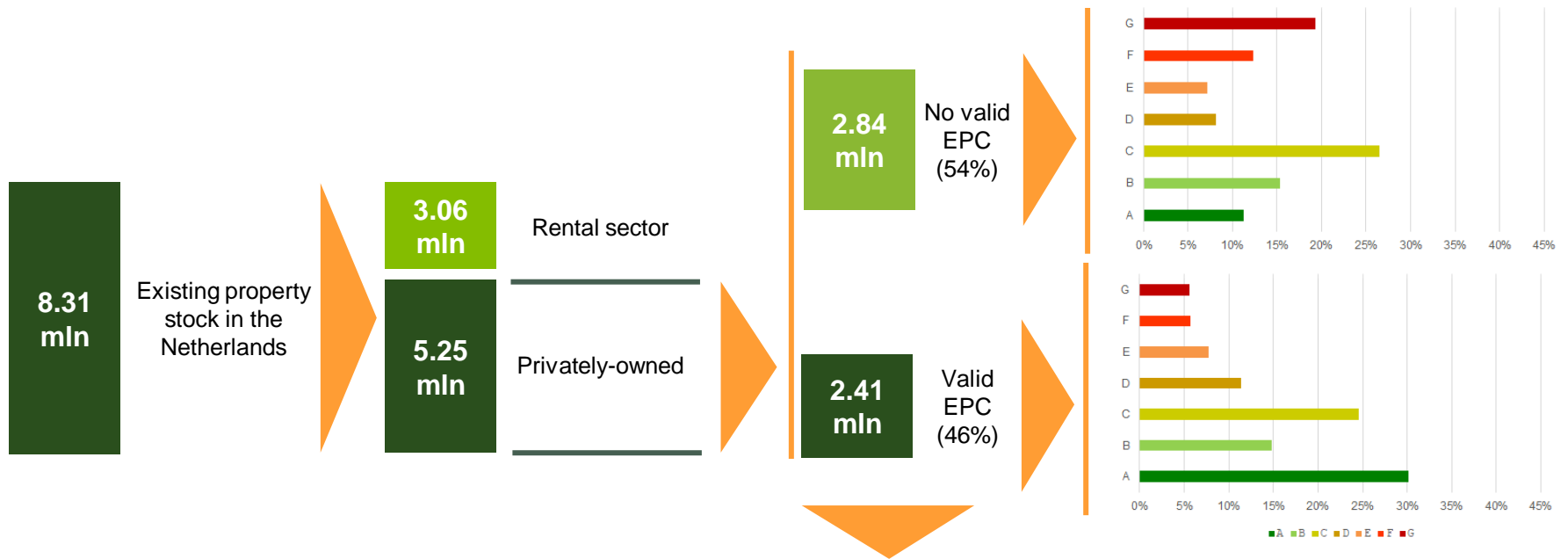
**Buildings account for
40% of EU energy use
& 36% of total CO₂
emissions**



**More than 220
million dwellings
were built
before 2001**

- Currently, roughly 75% of the EU building stock is energy inefficient.
- Almost 85-95% of today's buildings will still be in use in 2050.
- Only 1% of buildings undergo an energy efficient renovation every year (as of June '21, formal ambition is a 2% renovation rate).
- Improving the energy efficiency in buildings therefore has a key role to play in achieving the ambitious goal of zero-emissions by 2050, as set out in the European Green Deal.

Composition of the Dutch property stock





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Introduction EEM NL Hub

Energy Efficient Mortgages NL Hub

Members of the EEM NL Hub support and promote the acceleration and adaptation of energy efficient housing in the Netherlands.

Leden



Aangesloten



Why local Hubs? Why the EEM NL Hub?

Global Initiatives

UNFCCC Paris Climate Agreement
UN Sustainable Development Goals

EU Regulation & Initiatives

EU Taxonomy Regulation
EU Bauhaus
EU Renovation Wave
Near Zero Energy Buildings (NZEB)
Energy Performance of Buildings Directive (EPBD)
EBA Mortgage Credit Directive

National Regulation & Initiatives

National Climate and Energy Plans
Klimaatakkoord
Klimaatwet
Klimaat commitment
Wet Bouwbesluit 2012

National Building Code & Finance

Practices
NTA 8800
BENG
Implementation of NZEB, BENG, EPBD III
Application of EU Taxonomy (Climate Delegated Act)
NIBUD (Financial code of conduct)

National Building & Finance Practices

National Regulation & Initiatives

EU Regulation & Initiatives

Global Initiatives

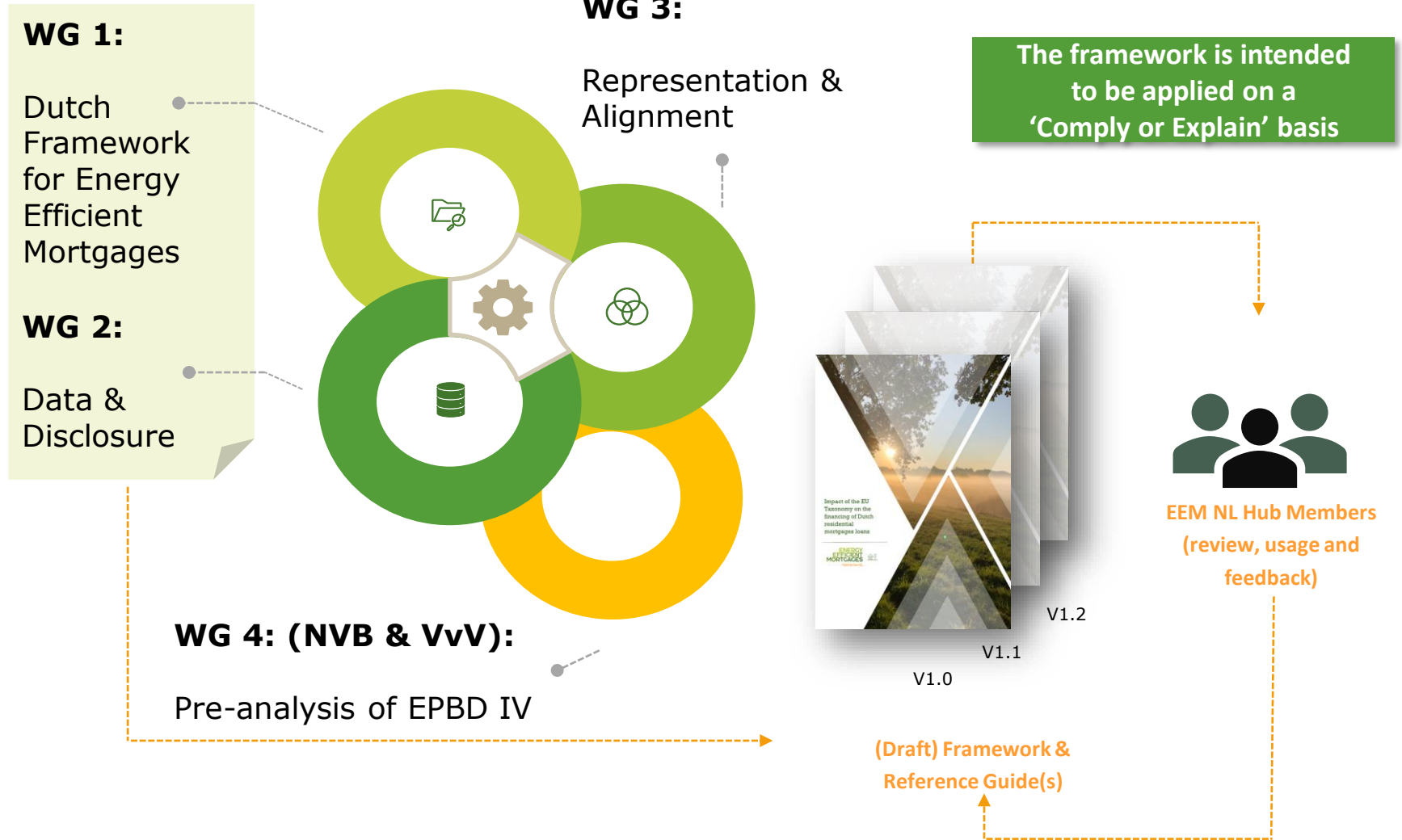


European & Global initiatives ultimately need to be 'translated' into local (national) regulation in accordance with (national) building code & financing practices.

National hubs play a crucial role in the application & roll-out of EU policy at national levels.

We work closely with EMF-ECBC / EEMI.

Working Group(s) – The Bigger Picture





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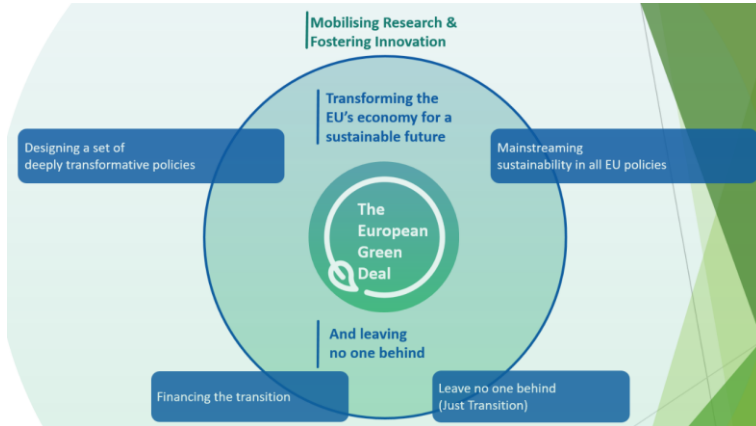
*Overview relevant
sustainability regulation*

Sustainability in a European context

12 December 2015: Paris Agreement

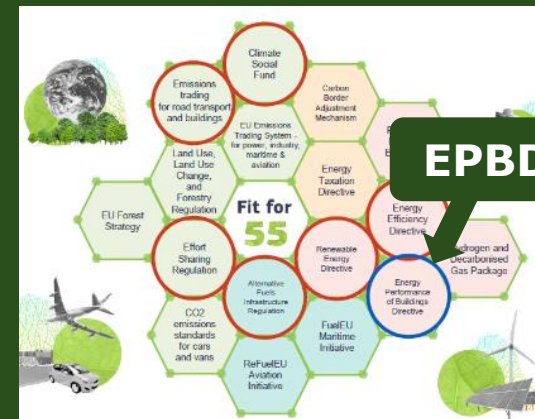


11 December 2019: European Green Deal



EU Renovation Wave

14 July 2021: Fitfor55



EPBD IV

Action plan for financing sustainable growth

22 June 2020:

EU Taxonomy

17 May 2023:
EU Green Bond Standard

25 May 2023:
RTS for securitisation

Relevant European sustainability regulations

EU Taxonomy

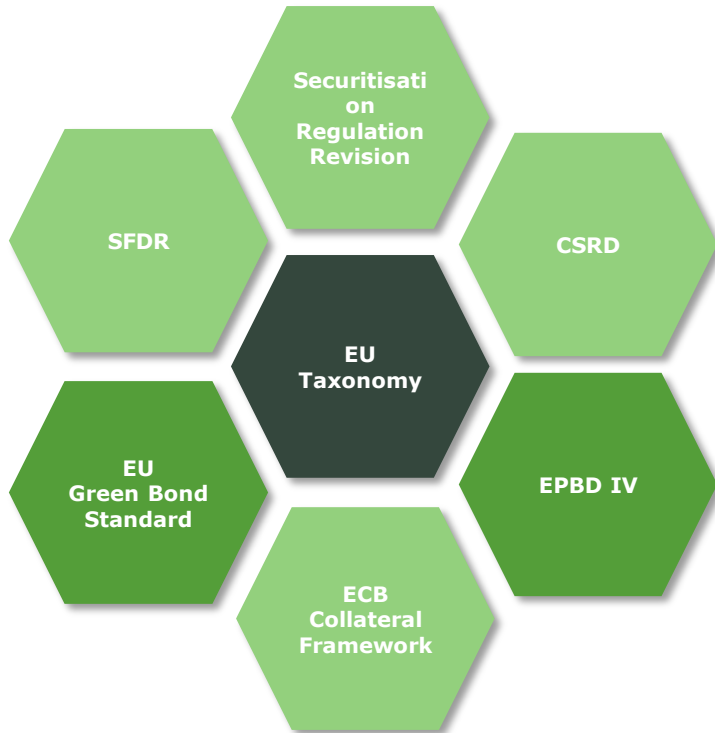
1. Defines which economic activities qualify as sustainable (very wide remit: whole economy).
2. With the aim of directing capital flows to these sustainable activities = **indirect regulation**.
3. EUT = regulation and thus immediately (without translation into local law) applicable in EU member states.
4. In force since 1 January 2022 but 'transition period' of two years.
5. Financial institutions will be required to report the so-called '**Green Asset Ratio**': the part of total assets invested in sustainable (EUT Aligned) activities.

EPBD IV

1. Limited to the built-up environment.
2. Very concrete descriptions on what (and how) sustainability improvements are to be realised to meet the objectives of realising a climate neutral built-up environment = **direct regulation**.
3. Despite the fact that EPBD is legislation for the construction sector, the EPBD IV also applies to countries, financial institutions and consumers.
4. The final version is expected to be agreed in the trilogue process in Q4 2023 and will then need to be translated into local legislation.

Both are aimed at improving the energy efficiency of the European housing stock and the financing of the required renovation

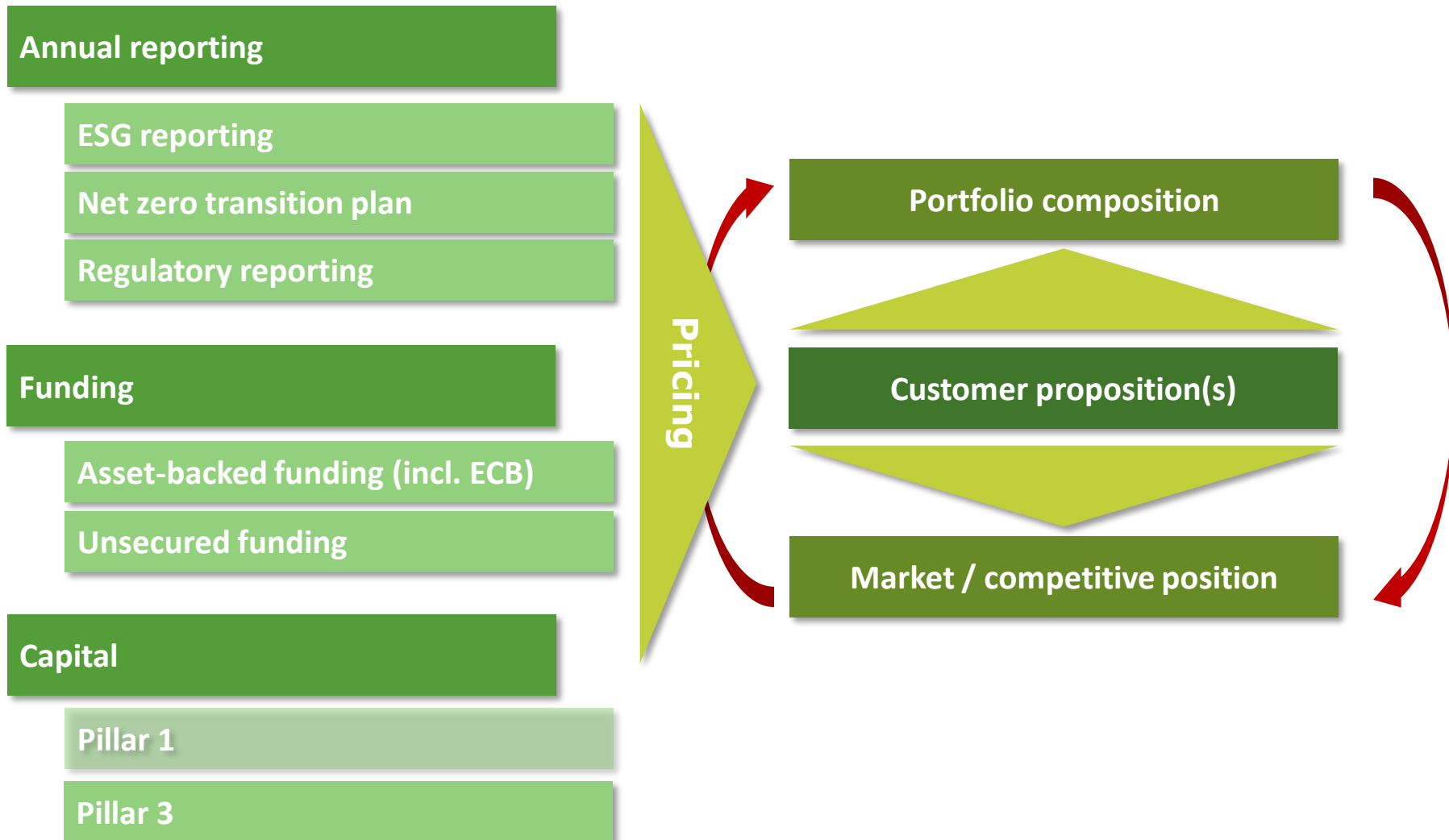
The EU Taxonomy at the core of numerous other regulations



- EU Green Bond Standard = EU Taxonomy Criteria = **GAR & Use of Proceeds**.
- Pillar 3 ESG disclosure based on EU Taxonomy criteria.
- Securitisation regulation to be updated with climate related disclosure applicable to all securitisations.
- ECB Climate risk and collateral disclosure based on EU Taxonomy.
- EBA advice on green mortgage definition based on EU Taxonomy foreseeable.
- EPBD IV Renovation Wave to be based on EU Taxonomy alignment Criteria.

Where in origin the EU Taxonomy was developed to steer capital flows to 'sustainable' activities, it has quickly become the benchmark for what is 'green' in many other European regulations

EU Taxonomy is impacting real business



EU Taxonomy alignment vs reducing CO₂ emissions

Client A

- Current energy label: **B**
- New mortgage loan:
 - Property purchase € 250.000
 - New kitchen € 15.000
 - Retrofit € 10.000
- Final energy label: **A**

- Full € 275.000 is EU Taxonomy aligned because final EPC = A
- Green Asset Ratio is 100%..
- ..but only results in marginal CO₂ emission reduction...

- Clients can easily be identified
- Much 'easier' to realise

Client B

- Current energy label: **F**
- New mortgage loan:
 - Property purchase € 250.000
 - Retrofit € 25.000
- Final energy label: **B**

- Only € 25.000 is EU Taxonomy aligned because final EPC = B and therefore only the renovation loan is EUT aligned
- Green Asset Ratio is 'only' 9%..
- ..but has a vastly higher CO₂ emission reduction

- Very large part of portfolio
- Relatively difficult to complete

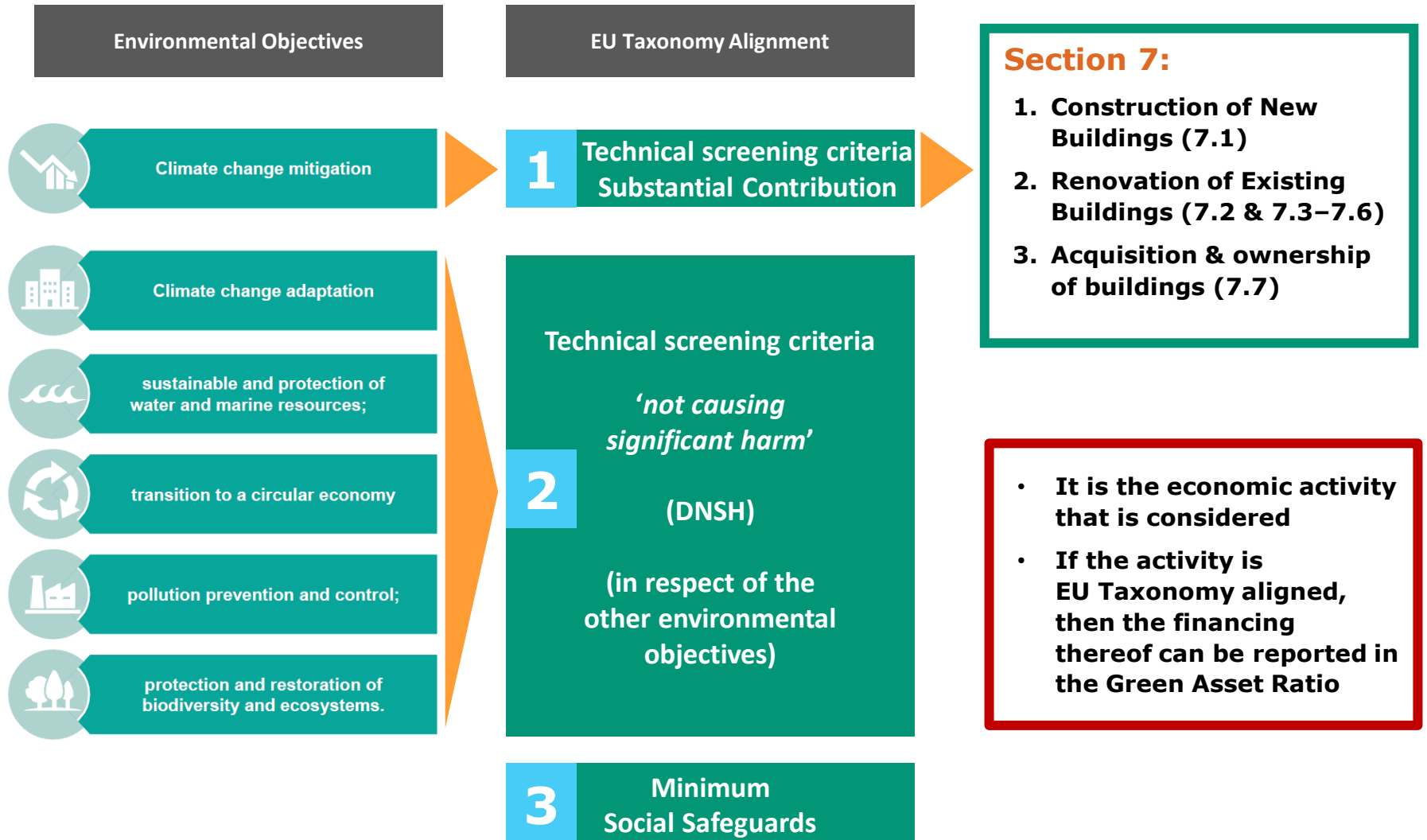


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EU Taxonomy

The construct and objectives of the EU Taxonomy



EU Taxonomy application to Dutch residential properties

Climate Delegated Act		Translation actual text and application to Dutch situation	Data availability	Application to mortgage loan level
7.1	New-build	<p>Do we understand what the EUT means?</p> <p>Can we apply it to the Dutch legislation and practice?</p>	<p>Do we think there is data available to demonstrate alignment of the economic activity?</p>	<p>Can we apply it at mortgage loan(part) level?</p>
7.2	1 Major renovation			
	2 30% reduction PED			
7.3	Specific measures			
7.4				
7.5				
7.6				
7.7	1 EPC = A			
	2 Top 15%			
	3 >31/12/2020			
		Dutch Bouwbesluit	Required data	Whole loan vs loan part
		NTA 8800 vs other methodologies	Possible data sources	Loan data vs sustainability data
		Real life practicalities	For existing and new properties	GAR calculation

Paragraph 7.7 of EU Taxonomy Climate Change Mitigation

Climate Delegated Act		
7.1	New-build	
7.2	Renovation	
	1	Major renovation
	2	30% reduction PED
7.3	Specific measures	
7.4		
7.5		
7.6		
7.7		
	2	Top 15%
	3	>31/12/2020

Substantial contribution to Climate Change Mitigation

1. For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A.

As an alternative, the building is within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.
2. For buildings built after 31 December 2020, the building meets the criteria specified in Section 7.1 of this Annex that are relevant at the time of the acquisition.

≤ 31/12/2020 = Energy Performance Certificate A (or top 15%)
 > 31/12/2020 = 10% more energy efficient than local building regulations

Paragraph 7.1 of EU Taxonomy Climate Change Mitigation

Climate Delegated Act		
7.1	New-build	
7.2	Renovation	
	1	Major renovation
	2	30% reduction PED
7.3	Specific measures	
7.4		
7.5		
7.6		
7.7		
	2	Top 15%
	3	>31/12/2020

<p>Substantial contribution to Climate Change Mitigation</p>	<p>The Primary Energy Demand (PED)²⁸², defining the energy performance of the building resulting from the construction, is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures implementing Directive 2010/31/EU of the European Parliament and of the Council²⁸³.</p> <p>The energy performance is certified using an as built Energy Performance Certificate (EPC).</p>
<p>Footnote</p>	<p>²⁸²: The calculated amount of energy needed to meet the energy demand associated with the typical uses of a building expressed by a numeric indicator of total primary energy use in kWh/m² per year and based on the relevant national calculation methodology and as displayed on the Energy Performance Certificate (EPC).</p> <p>²⁸³: Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (OJ L 153, 18.6.2010, p. 13).</p>

New-build must be 10% more energy efficient than local building regulations

Paragraph 7.2 of EU Taxonomy Climate Change Mitigation

Climate Delegated Act		
7.1	New-build	
7.2	Renovation	
	1	Major renovation
	2	30% reduction PED
7.3	Specific measures	
7.4		
7.5		
7.6		
7.7		
	2	Top 15%
	3	>31/12/2020

Substantial contribution to Climate Change Mitigation	<p>The building renovation complies with the applicable requirements for major renovations.²⁹⁹</p> <p>Alternatively, it leads to a reduction of primary energy demand (PED) of at least 30%.³⁰⁰</p>
Footnote	<p>²⁹⁹: As set in the applicable national and regional building regulations for 'major renovation' implementing Directive 2010/31/EU. The energy performance of the building or the renovated part that is upgraded meets cost-optimal minimum energy performance requirements in accordance with the respective directive.</p> <p>³⁰⁰: The initial primary energy demand and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method, and validated through an Energy Performance Certificate. The 30 % improvement results from an actual reduction in primary energy demand (where the reductions in net primary energy demand through renewable energy sources are not taken into account), and can be achieved through a succession of measures within a maximum of three years.</p>

Renovation must meet conditions of major renovation or result in 30% improvement of energy efficiency of the property

Paragraphs 7.3-7.6 of EU Taxonomy Climate Change Mitigation

Climate Delegated Act		
7.1	New-build	
7.2	Renovation	
	1	Major renovation
	2	30% reduction PED
7.3	Specific measures	
7.4		
7.5		
7.6		
7.7		
	2	Top 15%
	3	>31/12/2020

Substantial contribution to Climate Change Mitigation	7.3 Installation, maintenance and repair of energy efficiency equipment
	7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)
	7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings
	7.6 Installation, maintenance and repair of renewable energy technologies

Specific measures are very concrete sustainability improvements to the underlying property and 'should be' easily classifiable as EUT aligned

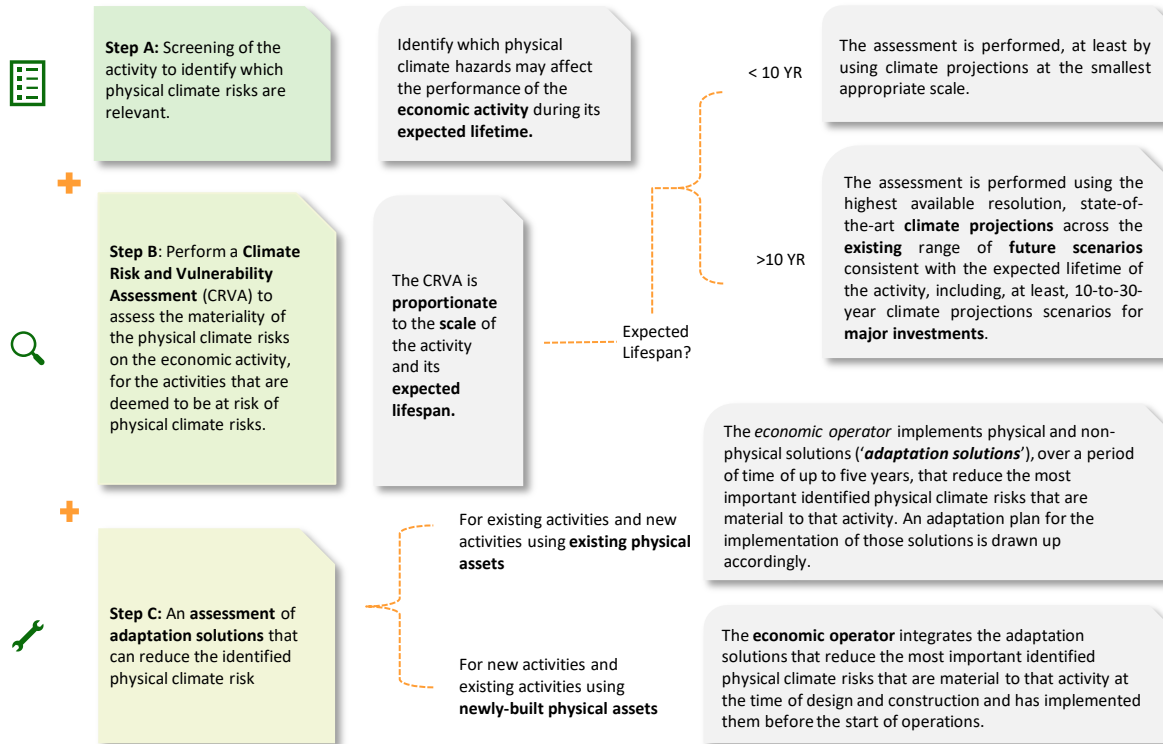
Applying the DNSH criteria to RRE (from perspective of CCM)

- A loan is only EU Taxonomy aligned if both the Technical Screening Criteria **AND** the DNSH criteria are met.

Economic Activity vs DNSH Screening Criteria	(2) Climate change adaptation	(3) Sustainable use and protection of water and marine resources	(4) Transition to a circular economy	(5) Pollution prevention and control	(6) Protection and restoration of biodiversity and ecosystems
7.1 Construction of new buildings	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets	At least 70 % (by weight) of the non-hazardous construction and demolition waste generated on the construction site is prepared for reuse, recycling and other material recovery. Compliance with EU Construction and Demolition Waste Management Protocol Building designs and construction techniques support circularity --> ISO 20887:2020, Sustainability in buildings and civil engineering works	Building components and materials used in the construction comply with Appendix C: Generic criteria for DNSH pollution prevention. A set of Building components and material emission standards in line with (EC) No 1907/2006	An Environmental Impact Assessment (EIA) or screening has been completed in accordance with Directive 2011/92/EU. The new construction is not built on one of the following: (a) arable land and crop land with a moderate to high level of soil fertility (b) The land is not on the IUCN European Red List of Threatened Species (c) land matching the definition of forest as set out in national law used in the national greenhouse gas inventory
7.2 Renovation of existing buildings	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets	At least 70 % (by weight) of the non-hazardous construction and demolition waste generated on the construction site is prepared for reuse, recycling and other material recovery. Compliance with EU Construction and Demolition Waste Management Protocol Building designs and construction techniques support circularity --> ISO 20887:2020, Sustainability in buildings and civil engineering works	Building components and materials used in the construction comply with Appendix C: Generic criteria for DNSH pollution prevention. A set of Building components and material emission standards in line with (EC) No 1907/2006	Too many DNSH tests relative to loan amount
7.3 Installation, maintenance and repair of energy efficiency equipment	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	N/A	N/A	Building components and materials used in the construction comply with Appendix C: Generic criteria for DNSH pollution prevention.	
7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	N/A	N/A	N/A	N/A
7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	Complex to prove on property & loan level and too many DNSH tests relative to loan amount			N/A
7.6 Installation, maintenance and repair of renewable energy technologies	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	N/A	N/A	N/A	N/A
7.7 Acquisition and ownership of buildings	The physical climate risks that are material to the activity have been identified by performing a Robust climate risk and vulnerability assessment	Complex to prove on property & loan level			N/A

DNSH analysis for Climate Change Adaptation

Overview of the EU Taxonomy - Climate Delegated Act



By performing

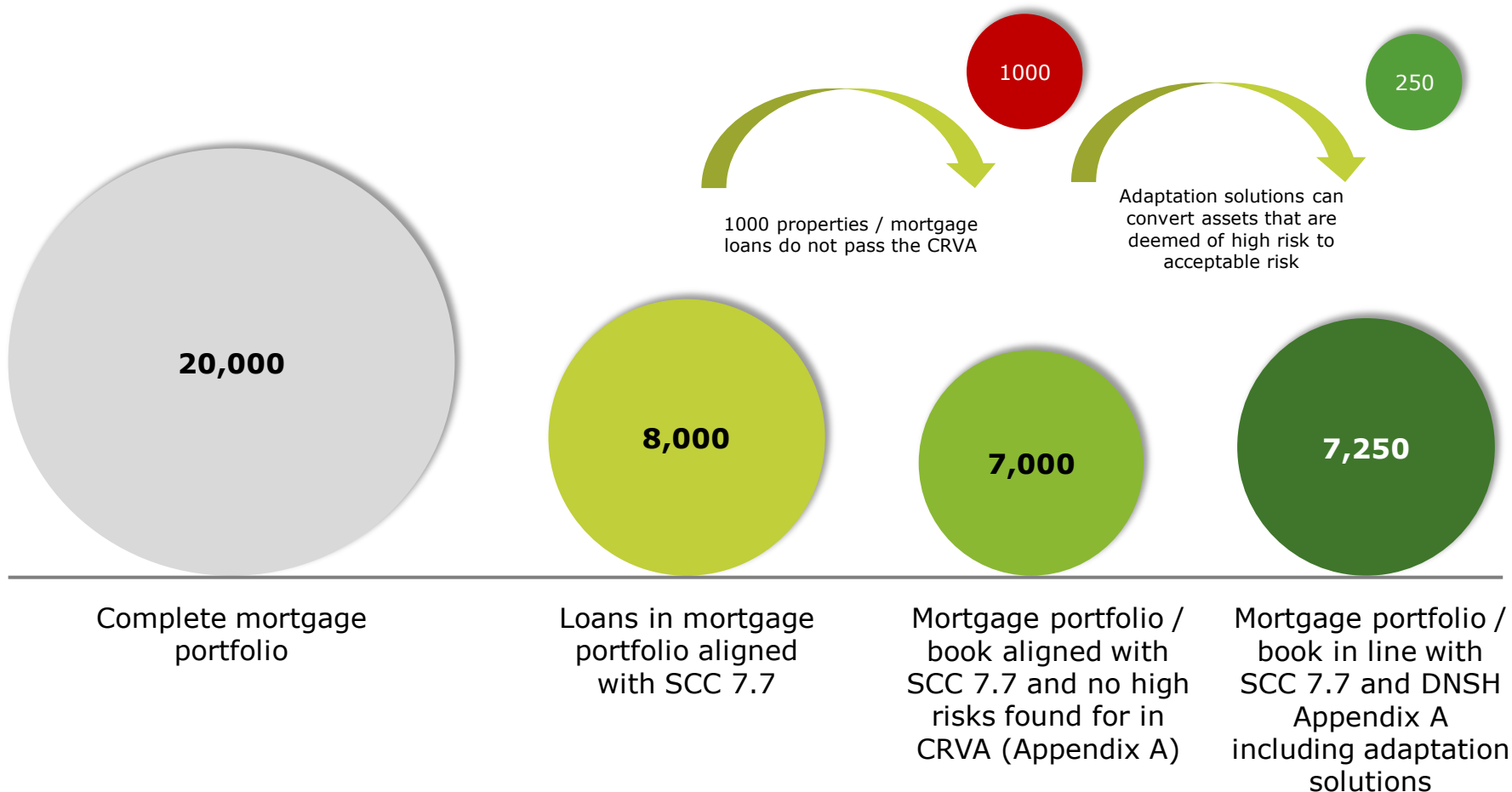
- Step A:**
- Determine relevant physical hazards by either 1) starting from an existing (known) list of relevant hazards or 2) perform a hazard assessment in the given jurisdiction.
 - Plot the exposure of the mortgage portfolio and assess (potential) vulnerability).
 - Assess, per identified hazard, if the economic activity is at risk of one more (physical) climate hazards.

- Step B: Perform a Climate Risk and Vulnerability Assessment (CRVA), for the activities that are deemed to be at risk of physical climate risks in the previous step.**
- Deepen the exposure and vulnerability analysis: assess the physical and functional characteristics of the building that may influence its sensitivity to each climate hazard.
 - Incorporate, where possible adaptive capacity to obtain a net overview vulnerability, exposure and hazards.
 - Create vulnerability maps to visualize and compare the sensitivity of different buildings in various locations. Obtain a sensitivity overview. Perform a likelihood analysis.
 - Perform a risk assessment per identified hazard.
 - If no medium or high climate risks have been identified the DNSH analysis is finished.

Step C: An assessment of adaptation solutions that can reduce the identified physical climate risk.

DNSH analysis is highly complex to perform on property & loan level

Example DNSH (Appendix A) calculation



Conclusion w.r.t. application of EU Taxonomy in the Netherlands

Climate Delegated Act		Ready for EUT alignment based on TSC for Climate Change Mitigation	
7.1	New build	10% more energy efficient than local building regulations	
7.2	1 Major renovation	Requirements under 'major renovation' are met	Definitions & data challenges
	2 30% reduction PED	Primary Energy Demand improves by 30% through renovation	
7.3	Specific measures	Client installs specific energy efficiency measures and finances these through (mortgage) loan	
7.4			
7.5			
7.6			
7.7	1 EPC = A	Valid EPC = A	Some remaining data challenges
	2 Top 15%	Property is in top 15% of most energy efficient properties	
	3 >31/12/2020	10% more energy efficient than local building regulations	

- Particularly in respect of properties under construction we think several quick-wins can be realised:
 - In absence of a unique property identifier during (first part of) the construction phase, a market-wide convention could help in mapping properties to loans to information in EP-Online.
 - 10% better than A+++ is impossible to understand for a consumer – practical translation to be agreed!

Conclusion w.r.t. application of EU Taxonomy in the Netherlands

Climate Delegated Act			Ready for EUT alignment based on TSC for Climate Change Mitigation	DNSH
7.1	New build		10% more energy efficient than local building regulations	DNSH (2) – (6)
7.2	1	Major renovation	Requirements under 'major renovation' are met	DNSH (2) – (6)
	2	30% reduction PED	Primary Energy Demand improves by 30% through renovation	
7.3	Specific measures		Client installs specific energy efficiency measures and finances these through (mortgage) loan	DNSH CCA (2) & Pollution prevention (5)
7.4				
7.5				
7.6				
7.7	1	EPC = A	Valid EPC = A	DNSH CCA (2)
	2	Top 15%	Property is in top 15% of most energy efficient properties	
	3	>31/12/2020	10% more energy efficient than local building regulations	

- DNSH analysis for 7.2 & 7.3-7.6 to be completed – relatively small amounts.
- DNSH analysis for 7.7 is key – guidance from Brussels → in the meantime work on data for the Substantial Contribution Criteria!

Main challenges w.r.t. EU Taxonomy

1. Data:

- Availability
 - Vertically: 4% vs 40% / 60%
 - Horizontally: e.g. date permit application
- Property identification during new-build phase
- Data-quality in EP-Online (assurance & liability)
- GDPR

2. Interpretation EU Taxonomy:

- Interpretation of DNSH – Annex A
- Substantial Contribution w.r.t. Climate Change Mitigation for 7.2 and 7.7
- Interpretation of Paragraphs 7.3 – 7.6
- Other climate objectives

3. Macro:

- Renovation does not work in EU Taxonomy – Dis-alignment with EPBD IV
- Application EU Taxonomy & review of EU Taxonomy in 2024/25
- Other regulation coming our way

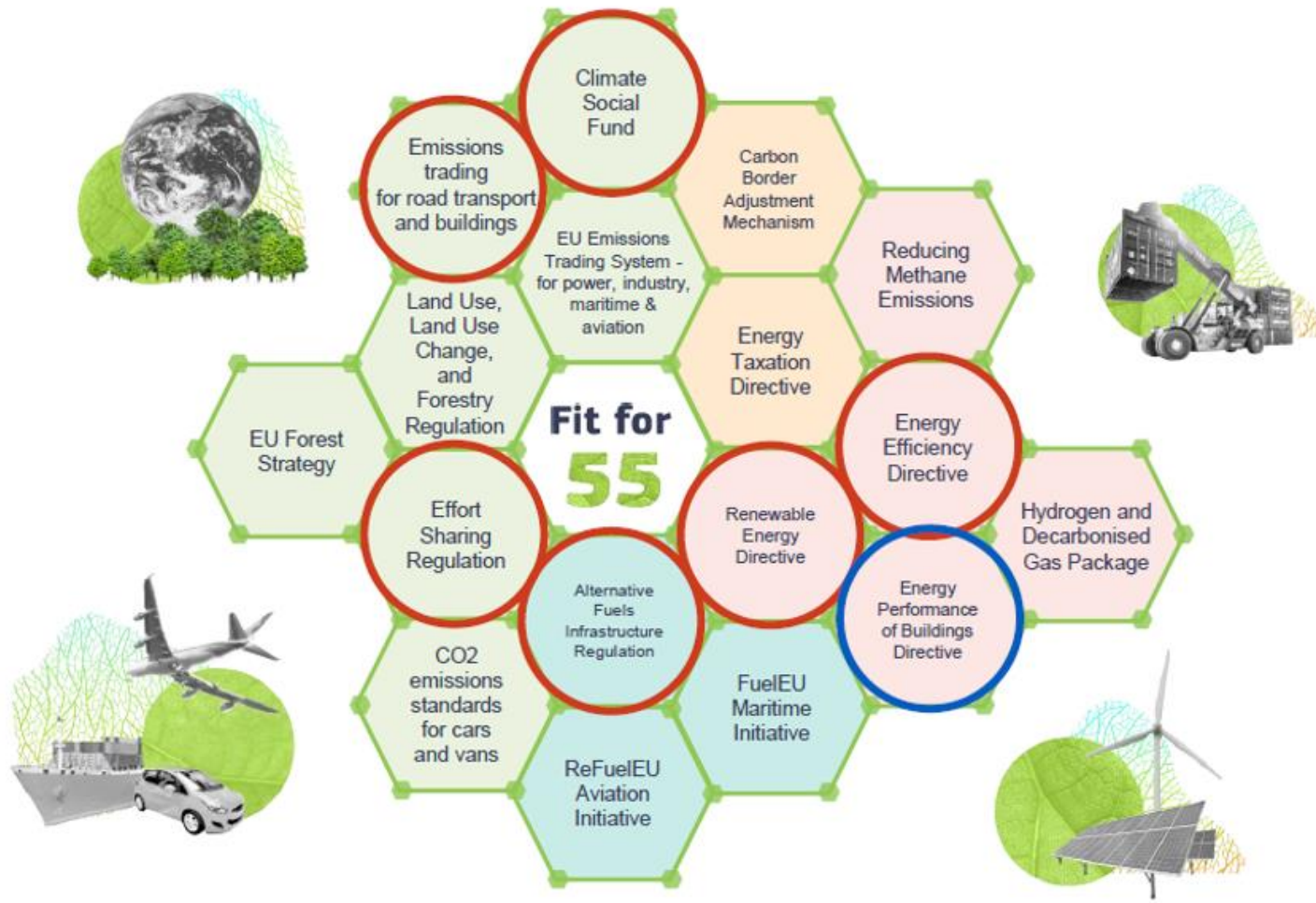


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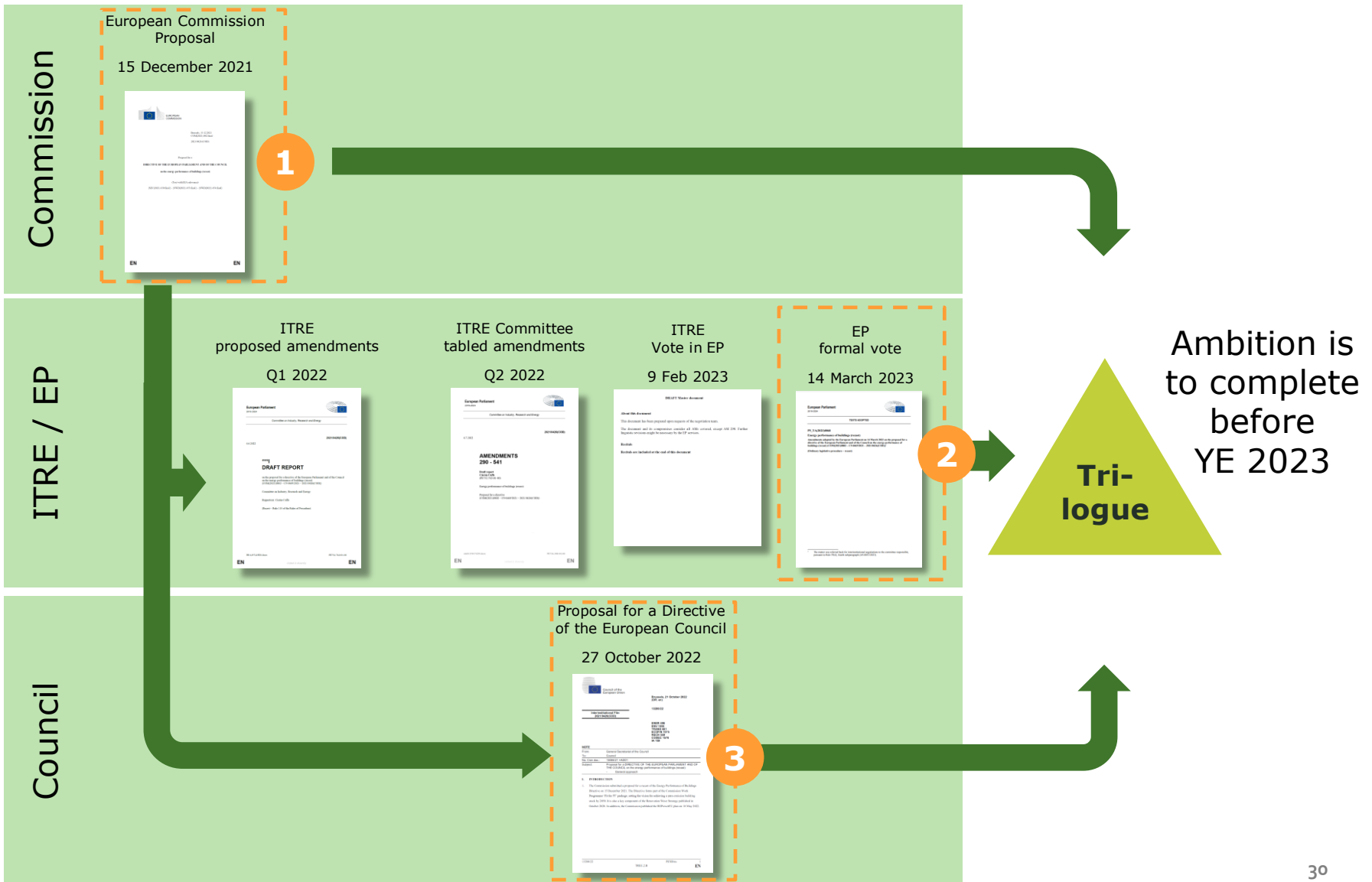
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EPBD IV

Energy efficiency is about much more than just EPBD IV!



EPBD IV timeline – Q4 2023 final version expected



EPBD IV: Key elements

- A. No longer **Nearly Zero Energy Buildings (NZEB)** but **Zero Emission Buildings (ZEB)**.
- B. Minimum Energy Performance Standards (MEPS).
- C. Harmonisation of energy labelling methodologies.
- D. Mortgage Portfolio Standards.



(Very) significant differences between the three different versions of EPBD IV – so the outcome of trilogue is far from certain!



Block

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Questions?

NTA 8800 vs rest of Europe

	DE	FR	NO	DK	FI	AU	IR	BE Brussels	BE Flanders	BE Wallonia	NL
Metric	Final energy kWh/m2/y	Primary energy kWh/m2/y	Energy delivered kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary energy kWh/m2/y	Primary fossil energy use kWh/m2
A+++											≤ 0
A+++											≤ 50
A++				≤ 20		≤ 60	≤ 25			≤ 0	≤ 75
A+	≤ 30			≤ 30		≤ 70	≤ 50		≤ 0	≤ 45	≤ 105
A	≤ 50	≤ 50	≤ 85	≤ 52.5	≤ 75	≤ 80	≤ 75	≤ 45	≤ 100	≤ 85	≤ 160
B	≤ 75	≤ 90	≤ 95	≤ 70	≤ 100	≤ 120	≤ 150	≤ 95	≤ 200	≤ 170	≤ 190
C	≤ 100	≤ 150	≤ 110	≤ 110	≤ 130	≤ 160	≤ 225	≤ 150	≤ 300	≤ 255	≤ 250
D	≤ 130	≤ 230	≤ 135	≤ 150	≤ 160	≤ 280	≤ 300	≤ 210	≤ 400	≤ 340	≤ 290
E	≤ 160	≤ 330	≤ 160	≤ 190	≤ 190	≤ 340	≤ 380	≤ 275	≤ 500	≤ 425	≤ 335
F	≤ 200	≤ 450	≤ 200	≤ 240	≤ 240	≤ 400	≤ 450	≤ 345	> 500	≤ 510	≤ 380
G	≤ 250	> 450	> 200	> 240	> 240	> 400	> 450	> 345		> 510	> 380
H	> 250										

Source: Various national and EU sources, ING

Climate Delegated Act	
7.1	New-build
7.2	Renovation
	1 Major renovation 2 30% reduction PED
7.3	Specific measures
7.4	
7.5	
7.6	
7.7	Existing properties
	1 ≤ 31/12/2020 2 > 31/12/2020

Substantial contribution to Climate Change Mitigation

- For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A.

As an alternative, the building is within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.
- For buildings built after 31 December 2020, the building meets the criteria specified in Section 7.1 of this Annex that are relevant at the time of the acquisition.

≤ 31/12/2020 = Energy Performance Certificate A or top 15%
> 31/12/2020 = 10% more energy efficient than local building regulations

Questions & Contact

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