



Dutch Energy Efficient Mortgage Framework

On the application of the
Substantial
Contribution
Criteria
of the EU Taxonomy

December 2023



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Date	11 December 2023
Website	www.energyefficientmortgages.nl
Contacts	<p>Vincent Mahieu Vincent.mahieu@eemnl.com</p> <p>Piet Hein Schram Piet.hein.schram@eemnl.com</p>

The Energy Efficient Mortgages NL Hub (“EEM NL Hub”) is an association set up with the aim of supporting and promoting the acceleration and adaptation of energy efficient housing in the Netherlands and the financing thereof. The Dutch Energy Efficient Mortgage Framework (“DEEMF”) is available to all parties directly or indirectly involved in financing Dutch (residential) properties, be it by granting mortgage loans to consumers or investing therein, or otherwise.

The EEM NL Hub has no formal capacity when it comes to interpreting (EU or other) legislation. The interpretation of the EU Taxonomy as presented in this document is only that: an interpretation, specific to the Dutch residential real estate market. Applying the framework is voluntary, and the framework is intended to work on a ‘comply or explain’ basis¹.

DEEMF has been composed based on the input from members and affiliated members of the EEM NL Hub collected as feedback during working group sessions. This document is therefore a summary as composed by the EEM NL Hub but is not necessarily the official position of any of the individual institutions participating in the EEM NL Hub.

Great care has gone into compiling this document. However, it could contain mistakes. We welcome any observations and recommendations for improvement. Please feel free to submit them at: info@eemnl.com.

¹ The option for an institution to “not comply and explain” on individual line-items is intended to leave sufficient flexibility to accommodate those institutions that look to apply stricter criteria than included in DEEMF and to those institutions that are still in the process of working towards a full application of DEEMF.

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1 Introduction

This document is an update of the DEEMF v1.0 Part II document² of the Energy Efficient Mortgages NL Hub and it describes how the EU Taxonomy – Substantial Contribution Criteria (“SCC”), listed in the Climate Delegated Act (“CDA”) can be interpreted and applied for the financing of Dutch residential real estate. This Dutch Energy Efficient Mortgage Framework document (“DEEMF 2023”) describes the interpretation, analysis and definitions that the EEM NL Hub working group has established.

This 2023 update of DEEMF contains updated guidance provided by the European Commission and renewed insights obtained by the working groups. In addition, compared to the first publication the scope of this document has been widened as the SCC for the top 15% criterium has been added. In Box 1 we summarise the most important updates in this publication.

Box 1: Summary of updates in this document.

- For the financing of residential real estate under construction, from the perspective of the homeowner, the SCC 7.1 is not directly applicable, as SCC 7.7(2) can be used.
- Additional details on the application & interpretation of SCC 7.7.
- Inclusion of the interpretation of SCC 7.7.1(B) (Top 15%) and an overview of potential application(s).
- For the application of SCC 7.7, the criteria applicable at the time of the construction permit application should be used (i.e. the date of the complete application for receiving the construction permit).
- Other smaller updates.

For a full overview see also Table 2.

Structure of this document

The structure of this DEEMF 2023 document is similar to the structure of the previous version: Section 2 contains the scope, design and process of development of the Dutch Energy Efficient Mortgage Framework. Section 3 contains an overview of relevant Data & Definitions. In Section 4 we provide an overview of the most relevant items in the updated European Commission (“EC”) guidance for the interpretation & application of the SCC for residential real estate. In Section 5 we cover activity 7.2 and in Section 6 we cover activity 7.7.

Note that part of the SCC analysis that was described in the previous version with respect to activity 7.1 has been moved to activity 7.7 (see Section 4 for more background). In addition, the top 15% analysis has been included in Section 6 and the annexes. In Sections 5 and 6 where we analyse the SCC, we have summarised the changes for the specific section in dedicated text boxes.

One could interpret the EU Taxonomy criteria as ‘standardised’ criteria applicable to all EU member states. However, upon closer reading of the wording in Section 7 “Construction and real estate activities” of the CDA, it becomes clear that it contains many direct and indirect references to existing local or national building code and energy performance methodologies. Therefore, we recommend reading Sections 9.1 and 9.2, which contain a brief overview of the Dutch energy labelling methodology and the Dutch building code.

DEEMF 2023 replaces the previous version of DEEMF³.

² Published in October 2022.

³ Known as DEEMF Part II.

2 Scope, design and development of DEEMF

2.1 Scope

This document is the outcome of the analysis of the EEM NL Hub working group sessions, where we have discussed in much detail the sub-sections of the EU Taxonomy and its application to existing residential mortgage lending practices and related regulations⁴. It covers the Substantial Contribution Criteria documented in Sections 7.2 and 7.7 of the Climate Delegated Act for the environmental objective ‘Climate Change Mitigation’ (“CCM”) and describes the analytical process, methodology and assumptions that the working group(s) have applied in creating DEEMF 2023. The other economic activities of Section 7 will be covered in future updates of DEEMF and are currently being analysed. Figure 2 provides a summary of the analysis and interpretation of the sections of the CDA that are in scope of this document.

As we will see in the section covering SCC 7.2 and the conclusion, our conclusion is that renovations as described in section 7.2 can be challenging to apply in practice. We want to highlight the importance of this conclusion upfront as it uncovers and identifies some of the practical challenges in applying the EU Taxonomy to renovation (mortgage) loans. The main challenges lie in data availability and the fact that the Dutch energy performance certification methodology and information set that are inadequate to fully accommodate SCC 7.2.

DEEMF does not only serve as a document to explain how certain sections of the EU Taxonomy can be applied in practice but also aims to identify areas of improvement.

The working group of the EEM NL Hub follows a phased approach, where we have first focussed on the analysis and interpretation of the most relevant sections of the EU Taxonomy, i.e. those sections that cover existing buildings, renovations and the construction of new buildings as they represent the largest loan volume and the largest financial potential to be EU Taxonomy aligned. In Figure 1 we depict the set of documents published by the EEM NL Hub in 2023 which consist of i) the DNSH (Appendix A.) Overview Paper, ii) a DEEMF document on Minimum Safeguards and iii) this DEEMF 2023 document describing the SCC⁵.

Figure 1: DEEMF 2023 and related publications published by the EEM NL Hub.



⁴ Commercial real estate is (currently) not in scope for analysis of the EEM NL Hub, on purpose, any (regulatory) references that are relevant for commercial real estate are omitted in this document.

⁵ The DNSH overview paper describes DNSH Appendix A (partially) but is not meant to contain any formal guidance and does not contain a comply or explain checklist.

Figure 2: Summary of SCC analysis as per the three perspectives, in scope of this document.

7. Construction and Real Estate Activities Section(s)		Subsection	Quick Read	In analysis scope for this version	Perspective 1: Interpretation and application	Perspective 2: Data availability and quality	Perspective 3: Application to mortgage loan level	Guidance Incorporated in DEEMF Definition
7.1	Construction of new buildings		Section 7.1 is not directly relevant for homeowners. Only the SCC of 7.1 are relevant in the application of 7.7(2).		Revised, see 7.7(2)			Revised, see 7.7(2)
7.2	Renovation of existing buildings	Major Renovations	Major Renovation: the building renovation complies with the applicable requirements for major renovations as implemented in the Dutch building code.*	✓				✗*
7.2 alternative		Reduction of (net) Primary Energy Demand	Renovation with (net) PED improvement condition: when it can be demonstrated that a 30% reduction of PED is achieved (without considering the improvement realised through renewable energy sources). In most cases not possible to identify from an NTA 8800 EPC if the improvements have been realised without renewables.	✓				✓**
7.7(1A)	Acquisition and ownership of buildings	Buildings built before 31/12/ 2020	For buildings built before 31 December 2020: a valid Energy Performance Certificate (EPC) of class A should be available to be considered aligned.	✓				✓
7.7(1B)		Buildings built before 31/12/ 2020 - Alternative: building is within Top 15%	We analyse the EU Taxonomy wording and interpretation. Additionally we refer to several (third party) methodologies that provide top-15% studies. In addition we provide some suggestions for the public documentation of such top-15% studies.	✓				✓***
7.7(2)		Buildings built after 31/12/ 2020	For buildings built after 31 December 2020: SCC of Section 7.1 apply and the '10% better than threshold value' criterion must be met to be considered SCC aligned.	✓				✓

Legend

	Available
	Available, some identified challenges
	Available, many identified challenges
	Not Available
	Not Covered (yet)

*As this point in time there is no central national database in the Netherlands, where major renovations (and if the underlying conditions are being met) are centrally registered ('geen afmeldplicht'). It is thus currently not possible to determine if the applicable requirements have been met, based on publicly available data.

** Several data availability and EPC methodology shortcomings

*** Different methods are referenced. This document describes the analysis and guidelines for documentation of such analysis.

2.2 Design

A DEEMF ‘definition list’ has been included in Section 8 of this document which allows users to indicate, per DEEMF definition, if the interpretation or definition as included in DEEMF has been applied or not. It describes the baseline interpretation of the EU Taxonomy in the Netherlands, as created by the EEM NL Hub working group(s).

DEEMF 2023 is made publicly available to all interested parties but is expected to be most relevant to those parties directly or indirectly involved in financing Dutch (residential) properties, be it by granting mortgage loans to consumers, investing therein or otherwise.

DEEMF is designed to work on a ‘comply or explain’ basis: if applied by an institution, for each definition included in the checklist, the institution can indicate whether it applies the common or baseline interpretation of DEEMF, or, if not, the institution is to provide an alternative definition or application of the relevant term. The general expectation is that the members of the EEM NL Hub will consider applying DEEMF from 2024 onwards.

By making DEEMF a voluntary standard on a comply or explain basis, the members of the EEM NL Hub aim to create transparency by providing one common interpretation that can be used by as many institutions as possible: by i) not excluding institutions that are not (yet) able to fully apply the framework and that are still in the process of working towards a full application of the DEEMF, and ii) enabling those institutions that are more ambitious than the applicable version of the framework to indicate where they apply stricter criteria than included in DEEMF.

The option for an institution to ‘not comply and explain’ on individual line-items is intended to leave sufficient flexibility to accommodate both types of institutions. In addition, the comply or explain nature of DEEMF allows those institutions that are more ambitious than the applicable version of the framework, to make this transparent to its stakeholders by clearly indicating this where relevant.

2.3 Development

DEEMF 2023 has been compiled by the EEM NL Hub with extreme care and after extensive consultation with i) the participants in the relevant EEM NL Hub working groups, and ii) other stakeholders. The framework document has been presented to the members of the EEM NL Hub for approval taking into account the currently applicable:

- 1) EU and national regulations;
- 2) Sustainability and mortgage loan data; and
- 3) Market best practices in respect of mortgage lending, energy labelling and reporting thereof.

The EEM NL Hub will be monitoring relevant regulatory developments and improvements in respect of data availability or EPC labelling methodology with a view to update the DEEMF for any relevant developments after careful analysis, consideration and evaluation. The exact content of future revisions of the DEEMF will be determined by and subject to approval of the members of the EEM NL Hub.

Working group analysis

DEEMF 2023 has been established by the EEM NL Hub working group members building on three key perspectives:

1. Interpretation & application:

Do we understand the Technical Screening Criteria as laid down for the Climate Change Mitigation environmental objective and can we apply them to the Dutch situation?

Although this might sound like a basic question to ask, it is important to realise that the process of drafting the EU Taxonomy has taken several years and reflects input from many member states and is thus a document full of (political) compromises and local perspectives. Application of this EU-level wording in a specific jurisdiction is therefore less straightforward than one would expect, particularly given the fact that construction, energy labelling and mortgage lending are highly jurisdiction specific activities.

2. Data availability:

Do we think there is data available to demonstrate compliance with the Technical Screening Criteria?

At this stage, the objective of the EEM NL Hub working group has explicitly not yet been to collect the actual data to demonstrate compliance of a specific economic activity with the EU Taxonomy. Instead, the focus has been on identifying possible data-sources and establishing if the necessary data is likely to be available and what the obstacles are for obtaining this data in the future (including limitations as a result of GDPR regulation). As further discussed below, whether or not certain data is or is expected to be available was taken into consideration in setting the definitions as included in DEEMF.

3. Application to mortgage loan level:

Can the mortgage loan or mortgage loanpart that is linked to the relevant economic activity, be identified?

One of the most tangible expressions of EU Taxonomy alignment is the reporting of Taxonomy Alignment and the Green Asset Ratio, as mandated by the Disclosure Delegated Act. Therefore, determining the loan attached to a sustainable activity is an essential component of the analysis and the calculation underlying the determination of the Green Asset Ratio ("GAR").

In the Netherlands we have the somewhat special situation that most residential mortgage loans are composed of multiple loan parts, depending on the redemption profile, interest fixed rate period and loan purpose selected by the borrower. This has also been taken into consideration in determining the definitions as included in the DEEMF.

Figure 3 provides an overview of the three above perspectives that were discussed and considered in numerous EEM NL Hub working group sessions for each of the subsections of Section 7 of the EU Taxonomy.

Figure 3: Three perspectives applied in the DEEMF analysis.

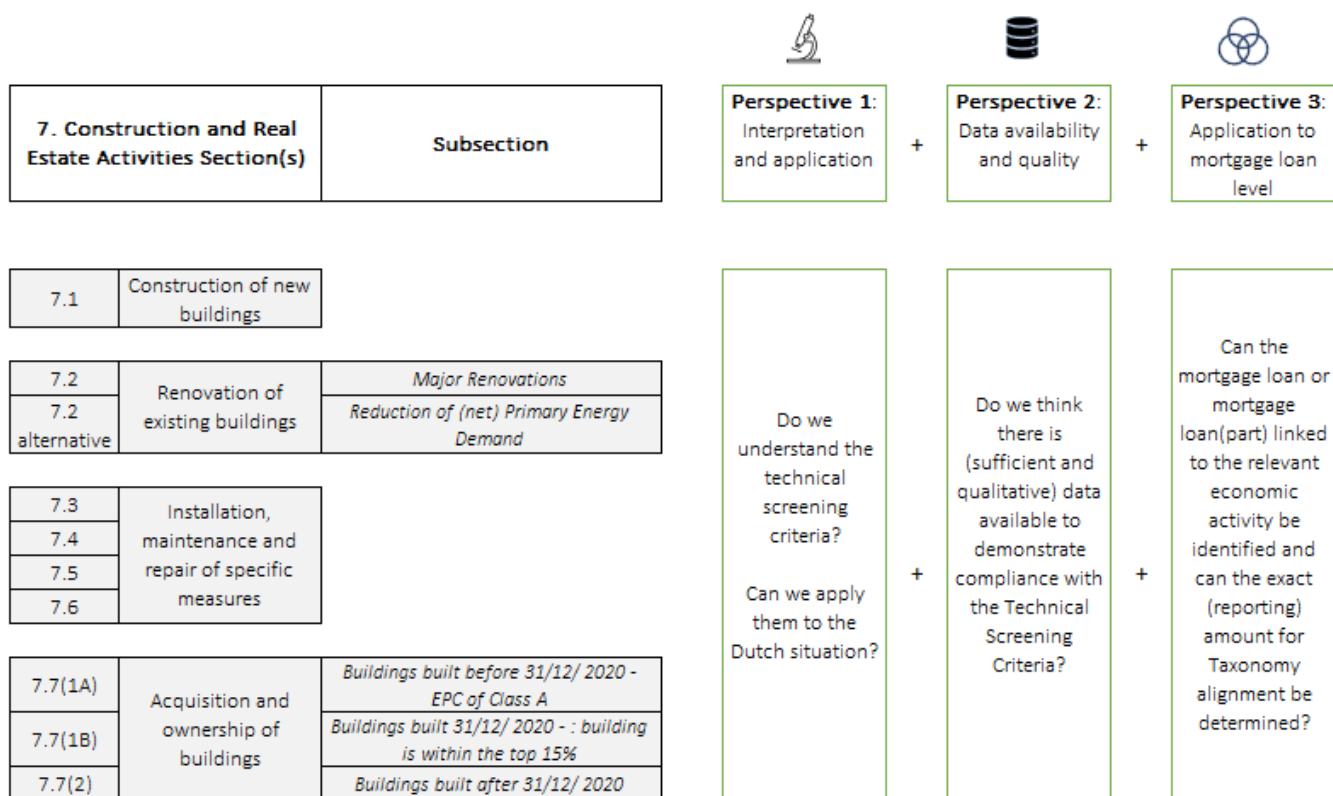


Figure 4 provides an overview of the criteria in scope of this DEEMF document and the three perspectives applied. Inclusion in the scope does not entail that a DEEMF definition or application has been determined in all cases. For instance, due to data limitations this is not always the case. To this end, DEEMF does not only describe what ‘works in practice’ but also what ‘doesn’t work in practice’, as of the time of writing. The DEEMF Definition List lists (sub)-sections where a definition has been determined by the EEM NL Hub working group.

Figure 4: DEEMF 2023 scope and documents.

			Technical Screening Criteria of Climate Delegated Act for Climate Change Mitigation - Annex I							
7. Construction and Real Estate Activities Section(s)			Subsection	Substantial Contribution Criteria	Do No Significant Harm					Minimum Safeguards
					(2)	(3)	(4)	(5)	(6)	
7.1	Construction of new buildings			Updated*						DEEMF MS - 2023 ****
7.2(1)	Renovation of existing buildings	Major Renovations	DEEMF SCC 2023***							
7.2(2)		Reduction of (net) Primary Energy Demand								
7.3	Installation, maintenance and repair of energy efficiency equipment		Pending RVO Discussion & Analysis not covered or analysed in DEEMF							
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									
7.7(1A)	Acquisition and ownership of buildings	Buildings built before 31 December 2020: building has at least an Energy Performance Certificate (EPC) class A.	DEEMF SCC 2023	DNSH Overview Paper **						
7.7(1B)		Buildings built before 31 December 2020 - Alternative: building is within Top 15%	DEEMF SCC 2023							
7.7(2)		Buildings built after 31 December 2020	DEEMF SCC 2023							

* Revised due to Q&A Guidance, see SCC 7.7(2). ** An overview is given of climate risk assessment methods and the EUT Wording. *** Described in DEEMF SCC 2023 but several data availability and EPC methodology issues. **** DEEMF MS: in this document we deem perspective 2 and 3 not applicable.

3 Data & Definitions

3.1 Data (availability) assumptions

In considering data availability, several data sources have been considered:

- 1) 'Typical' mortgage servicing data: data commonly used for underwriting, origination and servicing of residential mortgage loans and reporting on residential mortgage loan portfolios.
- 2) The government database EP-Online, which contains data on energy performance of building units, maintained by the Netherlands Enterprise Agency ("NEA" or "*Rijksdienst voor Ondernemend Nederland*").
- 3) The Land registry ("kadaster") which contains other datafields related to properties such as the date of the application for a construction permit.

The analysis contained in this document is focused on the ability to demonstrate compliance with the SCC. In practice, these are the criteria that are to be applied on loan and/or building unit level ("*verblijfsobject-niveau*") and then linked to the relevant outstanding mortgage loan amount. In the sections below we explain the relevant data categories as they are relevant in the practical application of the SCC in respect of residential (mortgage) loans.

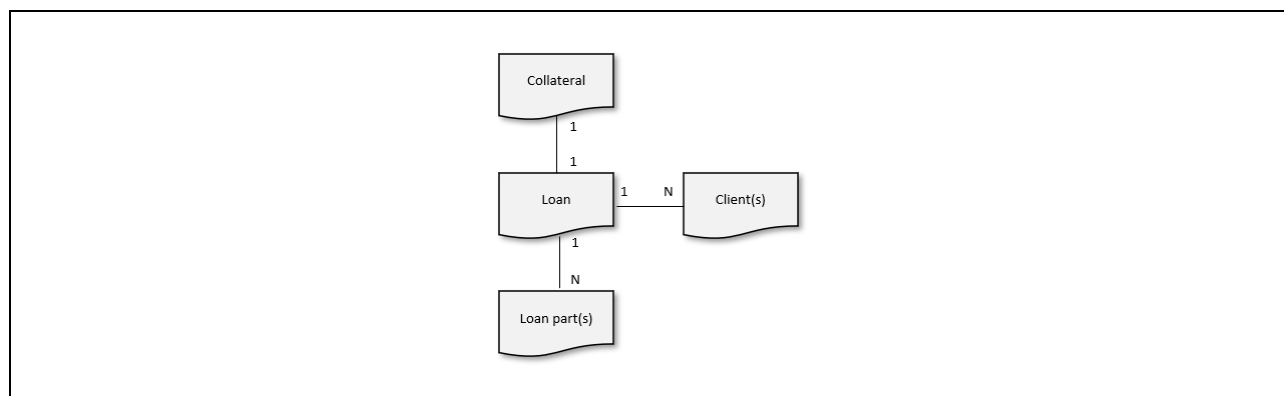
Mortgage (underwriting & servicing) data

In the Netherlands, mortgage lenders either perform the underwriting and mortgage loan servicing activities for their mortgage loan book themselves or alternatively, outsource these activities to a third-party. Either way, the IT systems used by either the mortgage originators or the third-party servicer typically capture only the data required for the current mortgage loan underwriting and servicing processes, including data on loan level, collateral level, customer level or financial level. In most cases, all data relevant for the underwriting and servicing of a mortgage loan is collected and stored according to a logical hierarchy. In other words: data about the collateral (i.e. the building unit) that is relevant, is often stored separately in a table or data set reflecting data solely about the collateral. This aspect is called 'normalisation' in data science. An example of a data hierarchy and relations between data entities is given in Figure 5.

Making this distinction is relevant in considering the (sustainability) data that is needed in *applying* the EU Taxonomy as it is not only relevant to identify what data is missing and where to possibly source it but also to have an understanding of how the missing data can be obtained and linked to the relevant mortgage loan(part) or put differently, be able to *use* the sustainability data.

In both the development and maintenance of DEEMF it is relevant to distinguish these hierarchical (data) levels. This is relevant particularly when calculating the potential EU Taxonomy aligned amounts. As often not the whole outstanding balance of a mortgage loan can be designated to be meeting the SCC, but fractions of the mortgage loan (in the Netherlands often structured as a loan part). In addition, the amounts that can be attributed to be in line with the SCC can change over time (for example: before, during or after the economic activity under consideration).

Figure 5: Simplified diagram showing the typical (data) relations of a Dutch mortgage loan.



Energy Performance data in EP-Online

EP-Online is the official database managed by the Dutch government, via the NEA, that contains valid energy labels and energy performance metrics. The database is (currently) publicly available, free of charge and lists all legally valid EPCs (and additional underlying data in respect of the relevant property, if available) in the Netherlands. Section 9.7 lists the information that is available per EPC methodology.

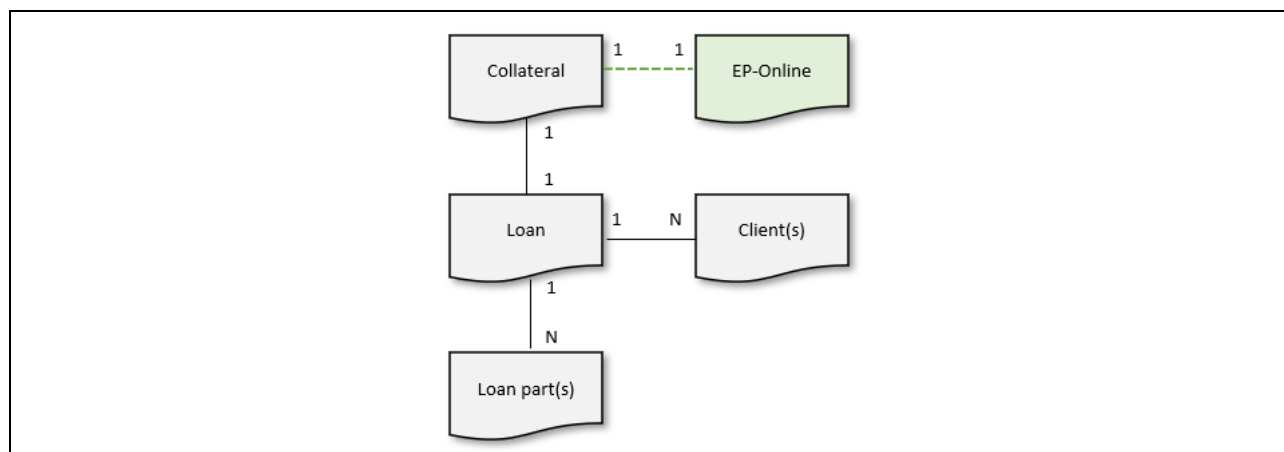
Under the currently applicable NTA 8800 calculation methodology, in order to obtain a valid EPC, a registered energy performance advisor is required to inspect the building unit and to calculate the energy efficiency of the property using the NTA 8800 calculation methodology. As part of the energy performance assessment, under the NTA 8800 methodology, approximately 200 data points are collected for the property and subsequently loaded into an IT module that performs the assessment and determines the energy performance status of the building unit.

These data points are consequently loaded into the EP-online database (but not all made publicly available). In total, per property up to 37 data fields (depending on status, building type, method) are made publicly available through EP-Online (and are thus accessible). As part of the EPC registration by the energy performance advisor, this information must be published in EP-online. Data in EP-Online is stored on building unit level and is published for the duration of the validity of the EPC.

In the description of DEEMF and the corresponding selection rules we make extensive use of the actual EP-Online data field names. In the [Annex](#) a glossary can be found that describes these (37) data fields (with names, definitions and data types). The EP-Online information is stored, in most cases, on a building unit level and can be identified and linked with existing mortgage data via the address. In Figure 6 we have depicted the *connection* between EP-Online data and mortgage servicing data. In some cases, for instance for properties under construction, alternative methods can / have to be employed⁶.

⁶ Alternatives such as matching on BAG_ID, registration_number, project name or project object description can also be employed but pose more (operational) technical challenges.

Figure 6: Simplified⁷ diagram showing the typical (data) relations of a Dutch mortgage loan including EP-Online.



3.2 Definitions used in DEEMF 2023

In this section several definitions that have been used in the EEM NL Hub working group are further explained.

NACE⁸

The EU Taxonomy lists an overview of eligible economic activities and corresponding criteria that must be complied with. These (economic) activities are qualified according to NACE codes. It is important to note that this activity-level qualification scheme, does not directly list mortgage lending but it does list the financing of the economic activities related to construction, renovation or purchase/acquisition of (residential) properties – to which a financial product (mortgage loan or another financial instrument) can be applied.

Energy performance data & EP-Online

In the Netherlands, all energy performance data of the total property stock is recorded in a database maintained by NEA and made accessible through an online portal called “EP-Online”.

In this database all information on all valid EPCs is available. In total, there are, 37 data fields available in EP-Online. The quantity of information, in number of data fields varies greatly depending on the:

- **Building Type:** family house vs apartments (see example for the box below).
- **Label Methodology:** for instance; an EPC based on the most recent methodology NTA 8800 (EP-Online lists many EPCs that are still valid⁹ based on older (previous) methodologies).
- **Label Status:** for instance: construction permit, completion or existing building¹⁰.

These differences in data (in)availability have been taken into account explicitly in the description of DEEMF and the corresponding definitions. See Section 9.7 for an overview.

⁷ The diagram is simplified in terms of entities (cashflows, offers, special servicing, etc. are typically managed separately) and cardinality (relationships between entities). Typically, a loan is tied to one collateral although variations on this relation are common.

⁸ Nomenclature statistique des Activités économiques dans la Communauté Européenne.

⁹ We assume *valid* means it is listed in EP-Online, as of the assessment date.

¹⁰ This distinction was introduced as of 1 January 2021 with the introduction of NTA 8800.

Building types and NZEB thresholds

Table 1 lists the different building types as distinguished by the NEA in EP-Online. In the table we have only listed buildings that are classified as residential (“*met woonfunctie*”). We have added, in the second column if the building type is classified as either “*grondgebonden*” (fixed to the ground) or “*niet-grondgebonden*” (not fixed to the ground), the latter term is used for building units and the former to indicate buildings.

Table 1: Building types distinguished in EP-Online, building type according to the building code and associated BENG2 thresholds.

Building Sub-type (“ <i>pand_gebouwttype</i> ”)	Building Type (“ <i>Grondgebonden of niet-grondgebonden</i> ”)	Residential designation (“ <i>Woonfunctie</i> ”)	BENG2 Threshold (“ <i>BENG2 eis</i> ”) ^{11, 12}	BENG2 Threshold (10% lower)
Detached house (“ <i>Vrijstaande woning</i> ”)	House (“ <i>grondgebonden</i> ”)	yes	30	27
Terraced House (“ <i>Rijwoning tussen</i> ”)	House (“ <i>grondgebonden</i> ”)	yes	30	27
Semi-detached/corner Terraced House (“ <i>Twee-onder-een-kap/rijwoning hoek</i> ”)	House (“ <i>grondgebonden</i> ”)	yes	30	27
Apartment (“ <i>Appartement</i> ”)*	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes	50	45
Shared dwelling (“ <i>Woongebouw met niet-zelfstandige woonruimte</i> ”)	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes		
Holiday Home (“ <i>Logieswoning/vakantiebungalows</i> ”)	Holiday Home (“ <i>grond gebonden</i> ”)	yes		
Mobile home (“ <i>Woonwagen</i> ”)	Not in scope	yes		
Houseboat new berth (“ <i>Woonboot nieuwe ligplaats</i> ”)	Not in scope	yes		
Houseboat existing berth (“ <i>Woonboot bestaande ligplaats</i> ”)	Not in scope	yes		
Apartment house-other (“ <i>Flatwoning (overig)</i> ”)*	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes	50	45
Porch house (“ <i>Portiekwoning</i> ”)*	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes		
Maisonnette (“ <i>Maisonnette</i> ”)*	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes	50	45
Flat (“ <i>Galerijwoning</i> ”)*	Apartment or other (“ <i>niet-grondgebonden</i> ”)	yes	50	45

* For these building types an additional “subtype” exists: “*Pand_gebouws subtype*” with the following domains: Appartement, Hoekvloer, Hoekdak, Tussendak, Tussenvloer, Hoekmidden, Tussenmidde, Tussendakvloer, Hoekdakvloer

¹¹ Remarks:

- Houses and apartments with a light-weight construction structure will receive a surcharge of 5 kWh/m²/yr for BENG-1 (see also Comments below).
- A house is officially ‘other residential function’ in this context and, e.g. a terraced house (row house), corner house, semi-detached, detached house.
- A residential building is (for instance an apartment complex or a building for student housing).
- A residential building does not have to meet the minimum value for the share of renewable energy insofar as it is not possible to meet this due to location-specific circumstances.

¹² These values are taken from “*Wet Bouwbesluit*” (2012) in Table 5.1A.

4 EC Guidance

4.1 Introduction

In December 2022 the European Commission published the ‘*Commission notice on interpretation and implementation of certain legal provisions of the EU Taxonomy Climate Delegated Act*’, a set of documents together informally known as the Q&A document (“Q&A Document”). Analysing these documents helps stakeholders navigate potential ambiguities and apply the regulations correctly, minimising the risk of misinterpretation or non-compliance due to uncertainties.

The Q&A Document provides answers to questions¹³ in respect of different sections of the CDA including additional guidance for the SCC. Although the Q&A Document lists that its content has been approved by the European Commission ‘in principle’, there are some important disclaimers listed in the introduction of the document – on the status of this guidance¹⁴.

The remainder of this Section 4 contains the Questions and Answers that the working group members of the EEM NL Hub deemed relevant for the interpretation of Section 7 of the CDA. And although useful guidance is provided in a number of SCC interpretation & application concerns, significant items (questions) remain open for interpretation and classification or have not been addressed.

4.2 Summary of relevant Q&A’s

In Table 2 we highlight the 22 (most) relevant answers and assess their usability. We use the word ‘answer’ to relate to the guidance provided in the Q&A Document. We have only included answers relevant for the SCC of section 7 of the Climate Delegated Act environmental objective I (Climate Change Mitigation)¹⁵ and we have indicated if the answer provided in the Q&A Document has led to an update in DEEMF compared to v1.0 of DEEMF as published in October 2022. Many of the answers provided in the Q&A Document confirm the interpretation that was included in v1.0 of DEEMF. Where relevant we have highlighted this as well below.

Table 2: Summary of relevant items listed in the Q&A of 15 December 2022.

#	Answer	Short description	Relevant for SCC	Update in DEEMF
1	104	Underlying method in EPC standard.	7.2 / 7.7	yes
2	105	National NZEB application.	7.7(2) / 7.1	yes
3	106	The date of submission of the permit application is the relevant date for deciding which TSC to apply.	7.7 / 7.1	yes

¹³ In the first half of 2022, the EEM NL Hub has gathered some (practical) questions on the interpretation and application of the EU Taxonomy in respect of residential real estate and conveyed these to the European Commission (EC). In late December 2022 the EC published a Q&A addressing some questions that they had received, including some of the ones submitted by the EEM NL Hub.

¹⁴ “This Notice contains technical clarifications responding to FAQs on the technical screening criteria set out in the Climate Delegated Act. The purpose of this Notice is to facilitate the effective application of the Climate Delegated Act. This Notice does not address the many questions and proposals regarding the reasoning and evidence for the choice of criteria. On these issues, the Commission points out that the impact assessment accompanying the Climate Delegated Act contains further explanations on the development of this act, notably on the reasoning and the balance between the requirements of the Taxonomy Regulation for setting the technical screening criteria. The replies to FAQs contained in this Notice clarify the provisions already contained in the applicable legislation. They do not extend in any way the rights and obligations deriving from such legislation nor introduce any additional requirements for the operators concerned and competent authorities. The FAQs are merely intended to assist financial and non-financial undertakings in the implementation of the relevant legal provisions. Only the Court of Justice of the European Union is competent to authoritatively interpret Union law. The views expressed in this Notice cannot prejudice the position that the Commission might take before the Union and national courts.” page 2.

¹⁵ No Q&A has been published for the TSC of the other environmental objectives, at the time of writing of this document.

4	107	Acquisition and ownership of buildings including new constructions, for the entity owning the building (i.e. the homeowner) it is also possible to use the relevant criteria of 7.7.	7.7 / 7.1	yes
5	109	If only one PED is available for a whole building, that value can be used for an individual apartment if the national regulation permits this.	7.7(2)	yes
6	114	The SCC applicable at the time of the construction permit application should be used.	7.7	yes
7	115	The PED on building level can be used when it is not available on building unit level (often the case for apartments (in the Netherlands)). Unfortunate use of the word Provisional in this answer. We understand it to mean that the PED as noted in the construction permit status = “vergunningaanvraag” might be used before / during construction.	7.7(2)	yes
8	129	(Confirmation of) Major Renovation definition.	7.2	yes
9	130	The answer given provides for a definition of ‘primary energy’ and clarifies that the measures that can be take Section 7.6. – “Installation, maintenance and repair of renewable energy technologies”, are to be interpreted “energy from renewable sources”.	7.2	yes
10	132	The calculation of reduction should be based on the values in an EPC before and after the renovation, based on the numeric indicators in kWh/m2 indicated in the EPC.	7.2	yes
11	133	Mainly repeat of regulation wording (footnote 300)	7.2	yes
12	134	All renovation measures taken during a three-year period be counted to determine the 30% reduction.	7.2	yes
13	141	We do not have to take into account the DNSH criteria for SCC 7.1 only the SCC (of 7.1) when applying SCC 7.7(2).	7.7(2)	yes
14	143	For the application of the SCC, the date of the application for a construction permit is relevant. This is useful so one can assess if for a building (unit) the SCC of section 7.7(1(B) or 7.7(2) should be applied.	7.7	yes
15	144	Lending to a (prospective) homeowner is a SCC 7.7 activity. SCC 7.1 does not need to be applied. This has a significant impact as the DNSH criteria of activity 7.7 differ from activity 7.1.	7.7	yes
16	147	Lending to a (prospective) homeowner is a SCC 7.7 activity. SCC 7.1 does not need to be applied. This has a significant impact as the DNSH criteria of activity 7.7 differ from activity 7.1.	7.7	yes
17	148	EPBD (III) has nationally been implemented in the EPC methodology. BENG2 in the Netherlands.	7.7	yes
18	150	In large part this answer is a repeat of the wording in the regulation. However certain elements are emphasised.	7.7	yes
19	151	It is not possible to use proxies, such as the year of the construction of the building. We assume this answer should be read in conjunction with answer 143.	7.7	yes
20	152	No grandfathering in the CDA and TSC. The Disclosure Delegated Act (“DDA”) lists provisions akin to grandfathering such as Article 7(5) thereof.	all	no
21	153	As incorporated nationally with the implementation of EPBD (III). In the Netherlands BENG2 is related to the EPC Class.	7.2 / 7.7	yes
22	157	No special clause for monuments but there is a section in one of the DDA Annexes to explain a certain approach.	7.7	no

Reference	Excerpt
104	<p>104. As of today many Energy Performance Certificates (EPC) in some Member States are based on energy consumption rather than energy demand. Can these consumption-based energy certificates be used as an equal basis to prove Taxonomy-alignment?</p> <p>If it is an officially produced EPC, it can be accepted, and used on equal terms.</p>
Comment on answer	EPC methodologies differ per country or sometimes within a country. Some jurisdictions use energy demand instead of energy consumption. As long as it is an official Energy Performance Certificate this does not matter.

Reference	Excerpt
105	<p>105. What are the actual Nearly Zero-Energy Buildings (NZEB) thresholds in each Member State (region)?</p> <p>This information can be obtained from national authorities. Any new building in the EU should have an Energy Performance Certificate (EPC), and the EPC indicates the relevant value for the respective building and how it compares to reference values, such as NZEB.</p>
Comment on answer	This confirms our interpretation that in the Netherlands we should look at NTA 8800 as this is the official methodology that determines the EPC threshold values including NZEB.

Reference	Excerpt
106	<p>106. For the activity “Construction of new buildings” in Section 7.1., is the date of submission of the building application decisive for the technical screening criteria to be applied?</p> <p>Yes, the date of submission of the complete application is the relevant date for deciding which TSC apply at that point in time.</p>
Comment on answer	These answers confirm the interpretation as included in v1.0 of DEEMF. The date of submission of the application is the relevant date for deciding which SCC to apply. Particularly relevant for new construction. This is also relevant for the top 15% analysis. This is relevant in determining which criteria to apply of SCC 7.7 before and after 31-12-2020. This answer has overlap with A143.

Reference	Excerpt
107	<p>107. Is the scope of the activity “Construction of new buildings” in Section 7.1. only limited to companies constructing the new buildings or also companies, which commission the construction of buildings (e.g. car manufacturing company which contract a construction company to build an office building)?</p> <p>This applies to both construction companies and entities that commission a new building. However, the way they can claim relevant turnover/CapEx/OpEx as Taxonomy-eligible/aligned may differ, and for the entity owning the building it is also possible to use the relevant criteria in Section 7.7. of Annex I.</p>
Comment on answer	Overall conclusion is that the SCC allow for a residential property under construction to be considered under Section 7.7 (from the consumer / user perspective) and not require it to be considered under Section 7.1.

Reference	Excerpt
109	<p>109. For residential buildings, can compliance with the technical screening criteria of the activity “Construction of new buildings” in Section 7.1. be demonstrated by using a limited sub-set of apartment units, instead of checking compliance for the whole property? Does this possibility also apply in non-residential buildings?</p> <p>For the energy threshold, this depends on national regulations, i.e. if the EPC applies to the whole building, or to each apartment. Whichever is the requirement at national level, it should apply for both residential and non-residential buildings. The correct EPC will be provided in any case, in line with the national regulations. For identical apartments, having normally identical EPCs, a limited sub-set can be used. However, if there are different types of apartments, with different EPCs, all types need to be checked.</p>
Comment on answer	<p>This is a topic that was also addressed in v1.0 of DEEMF: if only one PED is available for a whole building, can that value be used for each individual apartment? – see also answer 115. In the Netherlands it can be the case that the energy performance for the status construction permit (“vergunningsaanvraag”) is only available on building level and not on building unit level.</p>

Reference	Excerpt
114	<p>114. Point 1 of the substantial contribution criteria of the activity “Construction of new buildings” in Section 7.1. provides that “the Primary Energy Demand (...) is at least 10 % lower than the threshold set for the nearly zero-energy building (...) in national measures implementing Directive 2010/31/EU (...)”. Where national legislation related to Energy Performance of Buildings Directive and the NZEB concept has recently changed, should compliance with this criterion be performed using the legislation applicable at the time of the building licensing (the old one) or the legislation currently in force?</p> <p>The TSC applicable at the time of the building permit should be used (i.e. the date of the complete application for receiving the building permit).</p>
Comment on answer	<p>This is relevant in determining which criteria to apply of SCC 7.7 before and after 31 December 2020. This question and answer confirm the interpretation as used in v1.0 of DEEMF that we should consider the PED as required under NTA 8800 for new buildings (with permit application date after 1 January 2021 – the date of implementation of NZEB in the Netherlands).</p>

Reference	Excerpt
115	<p>115. The substantial contribution criteria of the activity “Construction of new buildings” in Section 7.1. indicate that the energy performance is certified using an ‘as built Energy Performance Certificate (EPC)’. What is meant by ‘as built’? Can during the construction phase a calculated estimated primary energy demand (PED) be used to determine Taxonomy-alignment until the final energy performance assessment has been performed? If during the construction phase the calculated estimated PED value is only available on building level and not on individual building unit level (which is often the case for apartments), can the PED value for the total building be used as a proxy for the PED of the individual apartment during the construction phase?</p>

	<p>For new buildings, either an EPC (valid for 10 years) or an EPC as-built are valid. It is understood that often for construction projects the loan is provided before the works start and funds are made available as the works progress. Since it is not possible to obtain the EPC as-built until the very end of the project, it should be possible as a provisional measure to obtain and use an EPC as-designed. This would allow the building process to start. However, upon completion of the works, there needs to be an EPC as-built to certify that indeed the building complied with the criterion 10% better than NZEB.</p> <p>This depends also on the availability of the EPCs and the scope of the project as such. When the project concerns a whole building, there is no need to check the EPC for each individual apartment. When the project is about construction or acquisition/ownership of an apartment, the EPC for the respective apartment can be used.</p>
Comment on answer	<p>We can use the PED on building level when it is not available on building unit level (often the case for apartments (in the Netherlands)). Unfortunate use of the word <i>provisional</i> in this answer. We understand it to mean that the PED as noted in the construction permit status (“<i>vergunningaanvraag</i>”) might be used before / during construction.</p>

Reference	Excerpt
129	<p>C. Renovation of existing buildings in Section 7.2.</p> <p>129. For the activity “Renovation of existing buildings” in Section 7.2., what is the definition of major renovation in each Member State?</p> <p>According to Article 2(1)(10) of the Energy Performance of Buildings Directive, “<i>major renovation</i>” means the renovation of a building where:</p> <p>(a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the building, excluding the value of the land upon which the building is situated; or</p> <p>(b) more than 25 % of the surface of the building envelope undergoes renovation.</p> <p>Member States may choose to apply option (a) or (b) or both. The information can be checked with the Member State concerned.</p>
Comment on answer	<p>This question and answer confirm the interpretation of a major renovation in the Netherlands as used in v1.0 of DEEMF.</p>

Reference	Excerpt
130	<p>130. Footnote 299 in Annex I Section 7.2. on “Renovation of existing buildings” specifies that “the reduction of the net primary energy demand of energy from renewable sources shall not be taken into account”. How is this to be interpreted?</p> <p>It follows that the reductions in the primary energy demand are to be validated by an EPC, and should be estimated based on the methodology applicable, in line with the provisions of the Energy Performance for Buildings Directive. The directive clarifies that ‘primary energy’ means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process.</p> <p>Improving the energy source to use renewable energy can qualify under Section 7.6. – “Installation, maintenance and repair of renewable energy technologies”.</p>

comment on answer	<p>The answer given provides for a definition of ‘primary energy’ means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process. The answer clarifies that the measures that can be take Section 7.6. – “Installation, maintenance and repair of renewable energy technologies”, are to be interpreted “energy from renewable sources”.</p> <p>(Unfortunately) this answer confirms the interpretation as included in v1.0 of DEEMF – making it difficult under the currently existing energy labelling methodology to demonstrate the improvement to PED excluding the reduction of the net primary energy demand resulting from renewable energy sources.</p>
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Reference	Excerpt
132	<p>132. To determine whether or not a 30% reduction in Primary Energy Demand (PED) will be/has been achieved, a starting-PED-value and an end-PED-value needs to be determined. Does the term “validated through an Energy Performance Certificate” as included in the technical screening criteria of the activity “Renovation of existing buildings” in Section 7.2. mean that the end-PED-value is only valid / acceptable if it is a PED value as included in a new EPC? Is the preceding sentence (‘is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method’) also applicable to the end- PED-value (post-renovation PED value)?</p> <p>The calculation of reduction should be based on the values in an EPC before and after the renovation, based on the numeric indicators in kWh/m2 indicated in the EPC.</p>
comment on answer	<p>This answer appears to leave even less room in determining the pre-renovation PED than one would initially think when reading footnote 300. This answer appears contradictory to answer 133 where an (almost) verbatim copy of footnote 300 is repeated.</p>

Reference	Excerpt
133	<p>133. For the activity “Renovation of existing buildings” in Section 7.2., does the wording ‘is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method’ mean that to determine the starting Primary Energy Demand (PED) value in addition to an on-site measurement of the PED, alternative methods are acceptable as long as they are ‘transparent and proportionate’? Would it be acceptable to determine (e.g. by using property characteristics and year of construction) upper and lower estimated PED-values for existing energy labels and use the upper PED-values as the starting-PED-value to determine the starting point of a renovation?</p> <p>Where an Energy Performance Certificate (EPC) is not available or cannot be generated, the initial primary energy demand and the estimated improvement can be based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method. The 30 % improvement should result 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>
Comment on answer	<p>The answer is a word-for-word repetition of the actual SCC wording – potentially not completely consistent with answer to question 132.</p>

Reference	Excerpt
134	<p>134. For the activity “Renovation of existing buildings” in Section 7.2., can all renovation measures taken during a three-year period be counted to determine if the 30% reduction (compared to the starting-PED-value as at the beginning of the three-year period) has been realised?</p> <p>Yes.</p>
Comment on answer	This has influence on the ‘size’ of the portion that can be allocated to be aligned with SCC 7.2(2) – in line with what was incorporated in v1.0 of DEEMF.

Reference	Excerpt
141	<p>141. The substantial contribution criteria of the activity “Acquisition and ownership of buildings” in Section 7.7. state that ‘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’. Does this refer both to the substantial contribution and DNSH criteria of Section 7.1 (“Construction of new buildings”)?</p> <p>As this text is included under the substantial contribution criteria, and there are specific criteria listed below for DNSH, the text refers only to the relevant criteria specified in Section 7.1. for substantial contribution to climate change mitigation. Where the DNSH criteria under Section 7.7 indicate N/A it means there are no specific requirements for the respective environmental objective.</p>
Comment on answer	This is very useful (and relevant) input for our DNSH analysis (i.e. N/A indeed not applicable to existing build, even if built after 1 January 2021). We do not have to take into account the DNSH criteria for SCC 7.1, only the SCC (of 7.1) when applying SCC 7.7(2).

Reference	Excerpt
143	<p>143. For the activity “Acquisition and ownership of buildings” in Section 7.7., to determine when a property was ‘built’, which date should be used:</p> <ul style="list-style-type: none"> • the date a property was actually completed and delivered to the owner / occupier; • the date of the application for a construction permit; or • the date of the confirmation of completion of a construction permit? <p>For the application of the Taxonomy criteria, the date of the application for a construction permit is relevant.</p>
Comment on answer	For the application of the SCC, the date of the construction permit application is relevant. This is useful so one can assess if for a building (unit) the criteria of section 7.7(1) or 7.7(2) should be applied.

Reference	Excerpt
144	<p>144. For buildings built after 31 December 2020, can the construction phase of a newly constructed property be considered as being part of the acquisition process? Can the drawn part of a construction mortgage loan therefore be considered under Section 7.7 (“Acquisition and ownership of buildings”), paragraph 2? Put differently: should Section 7.7 paragraph 2 only be used for buildings that have been completed or also for buildings that are being built? Or alternatively, should the consumer be seen as the entity undertaking the economic activity of Section 7.1 (“Construction of new buildings”) and the realised part of a property be considered for EU Taxonomy alignment according to 7.1 only?</p> <p>In the case of the construction of a new building, for the construction company (and for its revenues to be considered under the EU Taxonomy), the criteria under Section 7.1. apply. For the owner of the new building (whether it acquires the building through an acquisition, or if it is building its own building), the value of the building can be considered under the EU Taxonomy based on the criteria under Section 7.7.</p>
Comment on answer	Lending to a (prospective) homeowner is a SCC 7.7 activity. SCC 7.1 does not need to be applied in respect of homeowners. This has a significant impact as the DNSH criteria of activity 7.7 differ from activity 7.1.

Reference	Excerpt
147	<p>147. Can the construction of a building for own use count towards the activity “Construction of new buildings” in Section 7.1. or “Acquisition and ownership of buildings” in Section 7.7.?</p> <p>Yes, the construction of a new building for own use can be covered under Section 7.1 “Construction of new buildings”, or Section 7.7 “Acquisition and ownership of buildings”.</p>
Comment on answer	Lending to a (prospective) homeowner is a SCC 7.7 activity. SCC 7.1 does not need to be applied. This has a significant impact as the DNSH criteria of activity 7.7 differ from activity 7.1.

Reference	Excerpt
148	<p>148. Does the Energy Performance Certificate (EPC) class A in the substantial contribution criteria for activities related to the construction and real estate sector refer to primary energy demand or total energy demand?</p> <p>The Energy Performance Certificate (EPC) ‘class A’ that is required under the substantial contribution criteria of activity in Section 7.7. (“Acquisition and Ownership of buildings”) refers to the EPC class of the EPC scheme in the relevant Member State. The numerical indicator expressed in kWh/m2, mentioned in the EPC, is relevant and should be considered.</p>
Comment on answer	As EPBD (III) has nationally been implemented in the EPC methodology. BENG2 in the Netherlands.

Reference	Excerpt
150	<p>150. What should be done if it is currently not possible to quantitatively name the top 15 % of the building stock before 31.12.2020, and there is no corresponding national evaluation of the Energy Performance Certificates (EPCs) already issued, and there is no valid data based on the operating energy demand of the existing building stock? As a first simplification, can calculated energy efficiency data (e.g. from energy performance certificates with standardised energy requirements for household electricity / operating electricity) be used as opposed to real consumption data (from buildings in operation) to determine Taxonomy-alignment with the substantial contribution criteria of the activity “Acquisition and ownership of buildings” in Section 7.7.?</p> <p>In order to use the option of demonstrating that the building is within the top 15% of the national or regional building, adequate evidence should be provided (e.g. a recent study), 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. If such data is not available, a study can be conducted to perform such an assessment. Alternatively, the option of an EPC class A can be used.</p> <p>There is no requirement to conduct the assessment based on real consumption data for demonstrating that a building is within the top 15% of the building stock. In fact, it is recommended to use estimated energy consumption, which better reflects the energy performance of the building (being less influenced by occupancy and behaviour patterns). Only for large non-residential buildings (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems or systems for combined air-conditioning and ventilation of over 290 kW), it is required to show that the building is also efficiently operated through energy performance monitoring and assessment.</p>
Comment on answer	<p>In large part this answer is a repeat of the wording in the regulation. However, certain elements are emphasised: the distinction between residential and non-residential and the distinction of buildings built before 31 December 2020 (keep in mind answer 143 here). It is recommended to use estimated energy consumption. This is contrary to how EPC methods in the Netherlands work (“gebouwgebonden energieverbruik”) which are based upon calculations made on the basis of building, installation and material characteristics, thus not based on characteristics of the inhabitants or actual energy usage.</p>

Reference	Excerpt
151	<p>151. Is it permissible to use a weighted requirement value based on the valid new building regulations of the last 15 years for the definition of the necessary requirement value for “the best 15 % of the stock” as referred to in substantial contribution criteria of the activity “Acquisition and ownership of buildings” in Section 7.7.?</p> <p>The technical screening criteria require “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” if the option of the “top 15% of the national or regional building stock” is used. It is not possible to use proxies, such as the year of the construction of the building.</p>
Comment on answer	<p>We assume this answer should be read in conjunction with answer 143.</p>

Reference	Excerpt
152	<p>152. The top 15% is a dynamic metric. Is grandfathering guaranteed for properties, e.g. over the entire term of a green bond, if they were among the top 15% at the time of issue?</p> <p>There is no grandfathering of the technical screening criteria themselves. If the criteria are revised and changed, or an activity falls out of compliance with criteria that are dynamic, a new assessment of (and where relevant effort to ensure) compliance is needed, as of the date when the criteria apply. This is distinct from the grandfathering of financial instruments or transactions on the basis of the criteria at the time of issuance or conclusion of a loan, where separate rules apply. (see for instance Article 7(5) of the Disclosures Delegated Act which allows financial undertakings to report financed Taxonomy-aligned activities as such for up to five years after the application of revised criteria/changed coverage of criteria).</p>
Comment on answer	No grandfathering in the CDA and SCC. The DDA lists provisions akin to grandfathering, such as Article 7(5) thereof.

Reference	Excerpt
153	<p>153. What is the definition of operational Primary Energy Demand (PED)?</p> <p>The Annex I to the Delegated Act clarifies in footnote 281 that the Primary Energy Demand is ‘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>The Energy Performance of Buildings Directive defines in Article 2(5) primary energy as “energy from renewable and non-renewable sources which has not undergone any conversion or transformation process”. It also explains in Annex I that “the energy performance of a building shall be determined on the basis of calculated or actual energy use and shall reflect typical energy use for space heating, space cooling, domestic hot water, ventilation, built-in lighting and other technical building systems”.</p>
Comment on answer	As incorporated nationally with the implementation of EPBD (III). In the Netherlands BENG2 is related to the EPC Class.

Reference	Excerpt
157	<p>157. Are heritage or protected buildings that are exempt from the Energy Performance Certificates (EPC) under national law, also exempt from demonstrating compliance with the EPC or Primary Energy demand requirements specified in Section 7.7 (“Acquisition and ownership of buildings”)?</p> <p>Section 7.7 does not provide a derogation for buildings with heritage or protected status. Therefore, in order to qualify as making a substantial contribution to climate change mitigation, all buildings that are built before 31 December 2020 must have at least an Energy Performance Certificate of Class A or be within the top 15% of the national or regional buildings stock expressed as operational Primary Energy Demand.</p> <p>However, entities have the option to explain in the narrative part of their reporting under Section 1.2.3. of Annex I to the Disclosures Delegated Act why certain assets are not Taxonomy-aligned, e.g. because they are heritage buildings.</p>
Comment on answer	No special clause for monuments but there is a section in one of the DDA Annexes to explain a certain approach.

4.3 Takeaways from the Q&A for DEEMF

4.3.1 New constructions

- In the previous version of DEEMF we had incorporated a (separate) analysis on Section 7.1 as we had taken the view that the financing of new constructions is a Section 7.1 activity. We already included a comment that if Section 7.7 would possibly be more appropriate for private homeowners. With the guidance received through the Q&A we have clarity that for residential mortgage loans indeed we do not have to apply Section 7.1 for new constructions, but that Section 7.7(2) can be applied if it involves private homeowners. Therefore, we have moved large parts of the original 7.1 guidance to Section 7.7(2). In the latter there is a reference to the 10%-criterium of Section 7.1 that remains applicable.
- Only the DNSH criteria of Section 7.7 are relevant for new constructions in the context of residential homeowners not those of Section 7.1.
- For the application of the Taxonomy criteria, the date of the application for a construction permit is relevant. This is useful so one can assess if for a building (unit) the criteria of Section 7.7(1) or 7.7(2) should be applied.
- Answers 109 and 115 are relevant when assessing data availability.
- In addition, answer 114 is relevant as it confirms that the criteria applicable at the moment of building permit application are to be applied.

4.3.2 Renovations

- Answer 130 provides an indication to what renewable energy definition we can apply in considering Section 7.2(2) (footnote 300).
- Answer 134 states that 'all' renovation measures taken during a three-year period can be counted to determine the 30% reduction.

4.3.3 Existing properties

- For the application of the SCC, the date of the application for a construction permit is relevant. This is useful so one can assess if for a building (unit) the criteria of Section 7.7(1) or Section 7.7(2) should be applied.
- Some (less concrete) indications have been given on the application of the top 15% criterium.

We conclude therefore that additional weight or emphasis has been put on the criteria of activity 7.7 as these now also incorporate the financing of new constructions. We believe that also in determining Taxonomy Alignment or calculating the Green Asset Ratio, activity 7.7 will be the most important and relevant activity of Section 7 of the CDA.

Activity 7.7 will now encompass:

- For buildings built before 31 December 2020, buildings with an EPC of Class A
- For buildings built before 31 December 2020, buildings within the top 15% criterium.
- For buildings built after 31 December 2020, the 10% check as described in SCC for activity 7.1 has to be applied.

Note that the criteria for activity 7.7(2) (built after 31 December 2020) do not state anything (explicitly) about the status of the house (pre-construction, under construction or in use).

5 DEEMF Analysis: Renovation of existing buildings (Annex I TSC SCC, Section 7.2)

Quick Read

Section 7.2 contains two alternatives to determine if a renovation meets the SCC:

- **Renovation with (net) PED improvement condition:** when it can be demonstrated that a 30% reduction of PED is achieved (without considering the improvement realised through renewable energy sources). An EPC (based on the NTA 8800 method) both before and after the renovation, is needed to assess the improvement in net PED.
- **Major Renovation:** the building renovation complies with the applicable requirements for major renovations as implemented in the Dutch building code.

As (at this point in time) there is no central national database where major renovations (and if the underlying conditions are being met) are recorded. Major renovations are not centrally registered (*“geen afmeldplicht”*). It is thus currently not possible to determine if the applicable requirements for a major renovation (*“ingrijpende renovatie”*) have been met, based on publicly available data.

DEEMF 2023 Update Summary

For major renovations:

- With this updated version of DEEMF we have not updated the interpretation of the theoretical application guidance of SCC 7.2(1) (major renovations).
- Commentary: We still deem the application of this criterium troublesome and theoretical in practice as major renovations are not (centrally) registered or identified in EP-Online.

For the alternative, a 30% reduction of the PED:

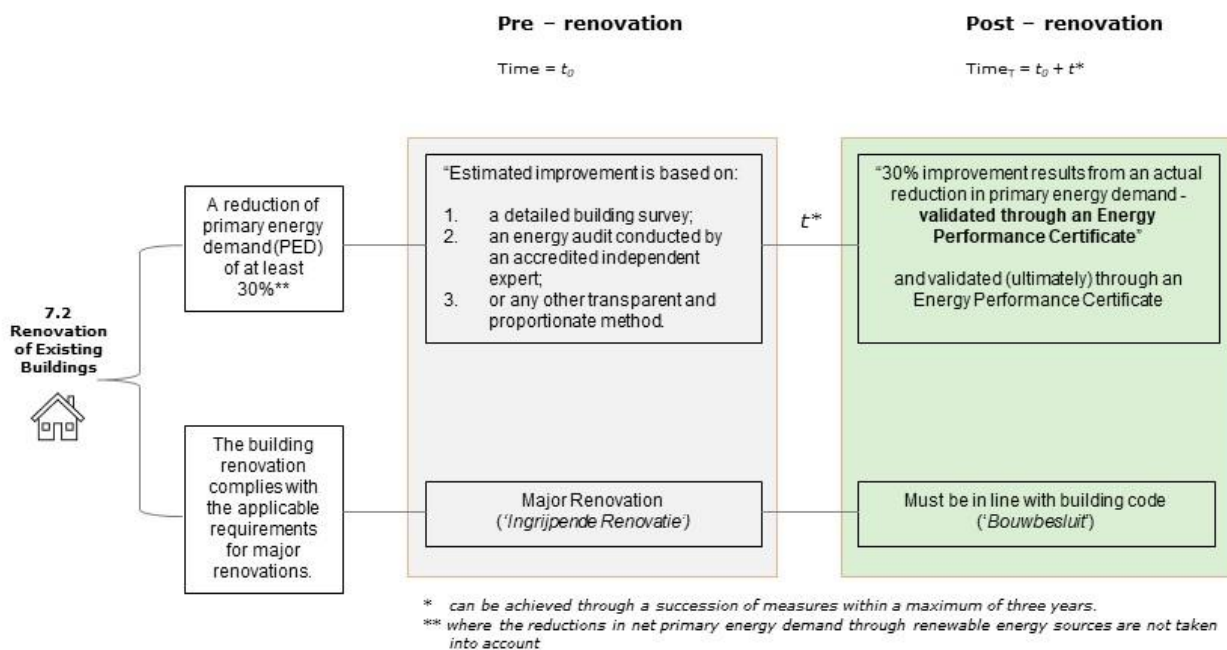
- We were correct in the previous DEEMF document in assuming that the measures that are listed in the criterium for activity 7.6 can be regarded as renewables, as explained in answer 130.
- Answer 134 states that all renovation measures taken during a three-year period be counted to determine the 30% reduction. We have highlighted this point.

In this section the ways to identify and apply the SCC of Section 7.2: renovation of existing buildings, are explored. Although the wording and technical description of Section 7.2 is relatively brief at first sight, relevant and technical explanations are provided in the footnotes. Following careful review of the SCC, the schematic overview as presented in the Figure 7, presenting the different routes that can be taken in the application of Section 7.2, was compiled.

We distinguish the following alternatives presented in the SCC of Section 7.2:

- Option I: an estimate of net PED reduction must be performed (pre-renovation) and validated through an energy performance certificate (post-renovation). Within option I, an improvement in energy efficiency must be realised and the footnotes provide three different options of estimating this (ex-ante) improvement.
- Option II: The building renovation complies with the applicable requirements for major renovations as implemented.

Figure 7: Overview possible options for renovation under EU Taxonomy.



5.1 Perspective 1: Interpretation and application

Table 3: Wording of Activity 7.2 in the Climate Delegated Act.

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.2 Renovation of Existing Buildings	F41, F43	<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>	<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>

Table 4: Linguistic decomposition and interpretation of key words & phrases of Section 7.2(1) - 'Major Renovation'.

Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
<i>building</i>	See section building	<p>We use the distinct categorisation of buildings as can be found in EP-Online combined with the metrics of Table 5.1A (<i>bouwbesluit 2012</i>) and a categorisation in building type (<i>"grondgebonden en niet-grondgebonden"</i>).</p> <p>A building is a building unit as the energy performance is ultimately calculated and registered in the Netherlands on building unit level. In addition, residential mortgage loans are granted on building unit level in the Netherlands.</p>	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A (<i>"bouwbesluit 2012"</i>) and a categorisation in building type (<i>"grondgebonden en niet-grondgebonden"</i>).
<i>Renovation</i>		<p>In the context of a 'major renovation' the word 'renovation' should be read in reference to the phrase, <i>'the renovated part that is upgraded meets cost-optimal minimum energy performance requirements in accordance with the respective directive'</i> in the footnote.</p> <p>Hence should be interpreted in part of fully as having an effect on energy efficiency. Note that A134 states that all renovation measures taken during a three-year period be counted to determine if the 30% reduction have been realised.</p> <p>In addition, the renovation should apply to the applicable requirements (i.e. as implemented in the Netherlands) corresponding to a Major Renovation definition as implemented in national regulation. Hence in this context the phrase renovation must be interpreted and applied as a 'Major Renovation'.</p>	<p>Where not referring to a 'major renovation', a renovation constitutes:</p> <p>Any (general) work carried out in the renovation irrespective if it (in)directly contributes to the energy performance, as long as some form of energy improvement is intended as a subset of the overall work carried out in the renovation process.</p>
<i>Major renovation reference in Directive 2010/31/EU.</i>		<p>Recital 16 of Directive 2010/31/EU notes:</p> <p><i>'Major renovations of existing buildings, regardless of their size, provide an opportunity to take cost-effective measures to enhance energy performance. For reasons of cost-effectiveness, it should be possible to limit the minimum energy performance requirements to the renovated parts that are most relevant for the energy performance of the building. Member States should be able to choose to</i></p>	<p>Article 2 section 10 notes of the directive, states:</p> <p>'major renovation' means the renovation of a building where:</p> <p>(a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the</p>

		<i>define a 'major renovation' either in terms of a percentage of the surface of the building envelope or in terms of the value of the building. If a Member State decides to define a major renovation in terms of the value of the building, values such as the actuarial value, or the current value based on the cost of reconstruction, excluding the value of the land upon which the building is situated, could be used.'</i>	<p>building, excluding the value of the land upon which the building is situated; or</p> <p>(b) more than 25 % of the surface of the building envelope undergoes renovation;</p> <p>Member States may choose to apply option (a) or (b).</p> <p>Answer 129 of the Q&A confirms that we should apply the definition as implemented in Member States.</p>
<i>As set in the applicable national and regional building regulations for 'major renovation' implementing</i>	Dutch Building code Article 3.2	As set in the Dutch Building code Article 3.2 ¹⁶ . See also Q&A (A129) for the option to use the 25% of the building surface envelope as definition for a Major Renovation.	<p>The conclusion is that in the Netherlands option (b) of Article 2 of Directive 2010/31/EU is implemented:</p> <p>'a major renovation constitutes a renovation of a building where more than 25 % of the surface of the building envelope undergoes renovation.'</p> <p>Answer 129 of the Q&A confirms that we should apply the definition as implemented in Member States.</p>
<i>The energy performance of the building or the renovated part that is upgraded meets cost-optimal minimum energy performance requirements in</i>	Renewable Energy Directive (RED II), Directive (EU) 2018/2001	<p>We assume this phrase refers to the Renewable Energy Directive (RED II), Directive (EU) 2018/2001.</p> <p>The Renewable Energy Directive is the legal framework for the development of renewable energy across all sectors of the EU economy. It has been adopted in December 2020 and states among other things that renewable energy is to be implemented for both the construction of new buildings and when major renovations are performed.</p> <p>Article 15 section 4 states:</p>	<p>The rules for renewable energy for new constructions have been implemented in the BENG framework (wijziging BENG, Stb.2019, 501). Where a minimum share of renewable energy is expressed as the BENG 3 indicator. The rules for renewable energy for major renovations have been implemented in the Bouwbesluit 2012 and in the Besluit Bouwwerken Leefomgeving):</p> <p><i>"In het Bouwbesluit 2012 (artikel 5.6 lid 5 en lid 6) is een eis opgenomen</i></p>

¹⁶ "Met artikel 3.2, ingevoegd via Stcrt. 2013, 16919, is een uitwerking gegeven aan artikel 5.6, vierde lid, van het Bouwbesluit 2012. In artikel 3.2 is bepaald dat van ingrijpende renovatie als bedoeld in artikel 2 van de herziene richtlijn energie prestatie gebouwen sprake is wanneer meer dan 25% van de oppervlakte van de gebouwschil wordt vernieuwd, veranderd of vergroot én deze vernieuwing, verandering of vergroting de integrale gebouwschil betreft. Hiermee wordt bedoeld dat de uitwendige scheidings-constructie volledig, dat wil zeggen met inbegrip van alle constructieonderdelen (binnenblad, spouw-vulling, buitenblad) wordt gerenoveerd. Het voorschrift geldt alleen voor het deel van de gebouwschil dat wordt gerenoveerd en niet voor de gehele gebouwschil van het gebouw. Met deze keuze voor de oppervlakte van de gebouwschil als criterium voor de beoordeling van de vraag of sprake is van ingrijpende renovatie is uitvoering gegeven aan de keuzemogelijkheid zoals deze in artikel 2 onderdeel 10 van de herziene richtlijn is gegeven."

accordance with the respective directive.		<p><i>'Member States shall introduce appropriate measures in their building regulations and codes in order to increase the share of all kinds of energy from renewable sources in the building sector.</i></p> <p><i>In establishing such measures or in their support schemes, Member States may take into account, where applicable, national measures relating to substantial increases in renewables self-consumption, in local energy storage and in energy efficiency, relating to cogeneration and relating to passive, low-energy or zero-energy buildings.</i></p> <p><i>Member States shall, in their building regulations and codes or by other means with equivalent effect, require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation in so far as technically, functionally and economically feasible, and reflecting the results of the cost-optimal calculation carried out pursuant to Article 5(2) of Directive 2010/31/EU, and in so far as this does not negatively affect indoor air quality. Member States shall permit those minimum levels to be fulfilled, inter alia, through efficient district heating and cooling using a significant share of renewable energy and waste heat and cold.'</i></p>	<p>voor een minimumwaarde hernieuwbare energie bij ingrijpende renovaties van gebouwen. De eis treedt per 1 februari 2022 in werking en vloeit voort uit de herziening van de richtlijn hernieuwbare energie (REDII) van 11 december 2018.”¹⁷</p>
complies with the applicable requirements for major renovations	See section major renovations in Dutch regulation	See section major renovations guidance according to NEA.	See section Incorporation of Renewable Energy Directive in the Building Code ¹⁸ .

¹⁷ <https://www.rijksoverheid.nl/documenten/richtlijnen/2021/12/02/leidraad-eis-hernieuwbare-energie-bij-ingrijpende-renovatie>

¹⁸ In DEEMF Part I

Linguistic decomposition and interpretation of key words & phrases of Section 7.2 (2) - ‘reduction in net PED’

Table 5: Linguistic decomposition and interpretation of key words & phrases of Section 7.2 (2) - ‘Reduction in net PED’.

Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
<i>alternatively</i>			Meaning instead of the other option, literally the <i>alternative</i> (in this context referring to the alternative Substantial Contribution Criteria for major renovations).
<i>It leads to</i>			The economic activity, that is financed (in this case ‘renovation’) ultimately, will result in.
<i>a reduction of primary energy demand (PED) of at least 30 %</i>		Answer 130 clarifies that: <i>‘primary energy’ means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process.</i>	The BENG 2 indicator, expressed as kWh/m ² /year on building unit level is reduced by at least 30% as a result of the renovation.
<i>The initial primary energy demand</i>			The prime energy demand before the (economic) activity of renovation is carried out (pre-renovation).
<i>Renewable energy sources</i>		In section 7.2 of the CDA or in the corresponding footnotes, no definition is given of renewable energy sources. Answer 130 states that <i>improving the energy source to use renewable energy can qualify under Section 7.6. – “Installation, maintenance and repair of renewable energy technologies”</i> – confirming our initial assumptions.	Renewable energy sources are items that are eligible in section 7.6 ‘Installation, maintenance and repair of renewable energy technologies’ of the Climate Delegated Act – Annex I. These items include (as taken from Section 7.6 of the CDA): <ul style="list-style-type: none">• photovoltaic systems• solar hot water panels• heat pumps contributing to the targets for renewable energy in heat & cool¹⁹• solar transpired collectors• thermal or electric energy storage units• high efficiency micro-CHP (combined heat and power) plant• heat exchanger/recovery systems

¹⁹ In accordance with Directive (EU) 2018/2001.

<p><i>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).</i></p>		<p>The BENG 2 indicator is a measure of the use of primary fossil energy. It encompasses, for residential buildings, the primary energy demand for heating, cooling, ventilation and warm tap water.</p> <p>The primary energy demand in the Netherlands is a measure of fossil prime energy demand, 'net' from renewable energy sources. If renewable energy sources are used (such as solar panels or other renewable energy sources), these will need to be deducted from the primary energy demand definition of BENG 2²⁰.</p> <p>However, bringing down the PED can 'normally' be realised by increasing the share of renewable energy. As there is a direct inverse relation between the BENG 2 and BENG 3 indicators. If the prime energy demand must be reduced in a way where reductions through renewable energy demand are not taken into account, this limits the options to bring BENG 2 down. In general, BENG 2 can be reduced via:</p> <ul style="list-style-type: none"> • Increasing BENG 3 (the share of renewables) • Decreasing the energy demand. <p>In this case we have a restriction where the BENG 2 is to improve due to measures that are not the result of increased use of renewable energy.</p>	<p>The energy efficiency improvement of 30% expressed as a reduction in net PED must be the result of measures that are not regarded as improvements to the building unit, resulting from renewable energy sources.</p> <p>Broadly two cases can be distinguished:</p> <ul style="list-style-type: none"> • Renovation where energy efficiency improvements are made without any 'renewables energy sources': the BENG 2 score (post-renovation) must be lower than 0.7 x BENG 2 score (pre-renovation). • Renovation where energy efficiency improvements are made that include 'renewables energy sources': in this case it is not possible to ascertain that the PED (BENG 2 score) reduction is based on '<i>reductions in net primary energy demand through renewable energy sources are not taken into account</i>'. <p>The post-renovation EPC report lists the 'overall' share of renewables (BENG 3) and the total BENG 2 score of the property. No (net) difference in PED compared to pre-renovation energy performance calculation is included in the post-renovation Energy Performance Certificate.</p> <p>Moreover, it is not possible, based on the actual EPC document or the information in EP-Online to attribute the changes to the BENG 2 or BENG 3 scores to individual measures.</p> <p>Answer 130 clarifies that: '<i>primary energy</i>' means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process.</p>
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²⁰ Source: <https://www.rvo.nl/onderwerpen/wetten-en-regels-gebouwen/beng/primair-fossiel-energiegebruik>

		<p>This could for instance be established by carrying out 7.3 activities²¹.</p> <p>For the avoidance of doubt, our interpretation of ‘actual’ is that it does not refer to energy usage by the inhabitant(s) of the property but that it refers to the PED score of the property post-renovation.</p>	
<p><i>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</i></p>		<p>Three options are presented on which the estimated improvement (in net PED) can be based. Furthermore, no additional requirements or specifications are given towards these possible estimation procedures. We have broken down these estimation procedures below and in Figure 8.</p> <p>Taking the government EP-Online database and NTA 8800 methodology as the starting point of our analysis, we conclude that the options: ‘transparent method’ and ‘detailed building survey’ have not been developed or sponsored by the NEA or government as of yet.</p> <p>Please note, that a (pre-renovation) EPC based on NTA 8800 does not include an estimation or guarantee of the PED impact based on any or a combination of proposed measures.</p>	<p>An independent energy audit (both pre- and post-renovation), carried out by an accredited EPC advisor is, at this stage, the only NEA backed methodology (based on NTA 8800 methodology) to calculate the (net) PED of a property.</p>

²¹ ‘Installation, maintenance and repair of energy efficiency equipment’ of the Climate Delegated Act.

- insulation to existing envelope components, such as walls, roofs, lofts, basements and ground floors.
- replacement of existing windows with new energy efficient windows.
- replacement of existing external doors with new energy efficient doors.
- installation of heating, ventilation and air conditioning (HVAC) and water heating systems.
- installation of low water and energy using kitchen and sanitary water fittings.

And validated through an Energy Performance Certificate			Based on the wording 'validated' and the need for a 'Certificate', the conclusion is that post-renovation, an energy performance must be carried out according to the NTA 8800 methodology to determine the PED of the property after the renovation. The Q&A answer 135 confirms this by stating: <i>"It follows that the reductions in the primary energy demand are to be validated by an EPC"</i> .
And can be achieved through a succession of measures within a maximum of three years			<p>The economic activity that is being financed should be achieved within three years of commencing the economic activity.</p> <p>Not all the work has to be carried out all at once, it can be achieved via a succession of (multiple) measures, within the given time span of three years.</p>

Footnote 300 in Section 7.2(2) presents several options, on how to 'estimate' the potential PED improvement. In Figure 8 and

Table 6 the different options are presented, and the table below contains an assessment of their current readiness for practical use.

Figure 8: Footnote 300 options for estimating PED improvement, depicting different options allowed under Section 7.2 of the EU Taxonomy mapped against complexity and costs.

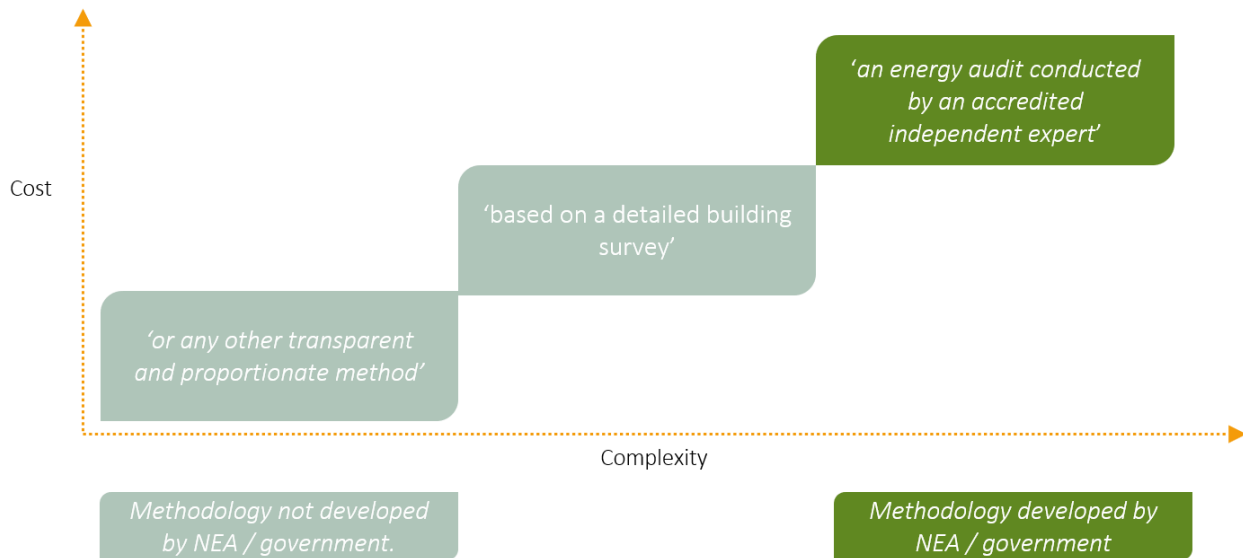


Table 6: A deeper look into footnote 300 of the Climate Delegated Act.

Footnote ³⁰⁰ of 7.2	Considerations	Pro / Con
<i>and validated through an Energy Performance Certificate.</i>	The wording is unambiguous w.r.t. the need to have the post-renovation PED confirmed through an EPC. The Q&A answer 135 confirms this by stating: "It follows that the reductions in the primary energy demand are to be validated by an EPC".	Under the NTA 8800 methodology, an EPC can only be issued following an assessment carried out by an EPC auditor ("vakbekwaam EnergiePrestatie-adviseur") made in accordance with the ("Beoordelingsrichtlijn 9500") which includes an on-site measurement of the property. O.a. due to the on-site visit, obtaining an EPC is relatively costly.
However, to determine the estimated improvement and thus the pre-renovation PED, the TSC wording offers three options:		
<i>an energy audit conducted by an accredited independent expert.</i>	This option requires an EPC to be issued pre-renovation similar to an EPC under the post-renovation determination as described above.	Relatively costly as this option requires an official EPC both before and after the renovation work(s). Particularly for smaller renovations, the fact that twice the costs for an EPC would be incurred, would be prohibitively expensive ²² . Also, the fact that when requesting the initial EPC (and thus the costs being incurred), it is still uncertain if the 30% reduction can be achieved and thus if the TSC will be met through the renovation, make this an undesirable option particularly for the smaller (less costly) renovations.
<i>Based on a detailed building survey</i>	No additional definitions or requirements are given with respect to the content of what a detailed building survey entails. The EEM NL Hub working group members have not checked what building survey methodologies are in existence as of current in the Netherlands and how they relate to the EU Taxonomy SCC.	The interpretation of the EEM NL Hub working group is that still an analysis for each individual building (unit) would be required but that under this option a physical (on-site) inspection of the building (unit) would not be required a priori. This option appears to sit between the two other options in terms of complexity and thus costs. The EEM NL Hub working group looks to explore the feasibility of this option in the future.

²² Further improvements to the EPC issuing process for smaller renovations where a second on-site visit is no longer required are being discussed.

<p><i>Or any other transparent and proportionate method</i></p>	<p>This option appears to allow for the implementation of a more general method where the PED of multiple building (units) is determined without an official EPC being issued and thus an on-site measurement taking place, or a detailed analysis being performed on an individual building (unit) or property level.</p> <p>The requirement for the method to be transparent would imply that it is relatively simple, can be verified by other stakeholders and can be applied consistently over multiple types of properties.</p> <p>The reference to proportionate appears to imply that particularly for the smaller renovations, a relatively simple method to determine the PED of a building(unit) or property before the renovation taking place, can be developed and applied.</p> <p>There are however (commercial) parties that provide PED estimation (of the building and or of the renovation work that is to be carried out)²³.</p>	<p>The EEM NL Hub working group intends to work closely together with the NEA to develop a method that would meet the requirements of being transparent and proportionate and at the same time be consistent and easy to apply to many different types of properties.</p> <p>The aim of such method would be to enable the different stakeholders to determine in a simple way if the 30% reduction in PED can be achieved.</p> <p>Particularly from this perspective, the requirement under the TSC to exclude 'renewables' appears to be counterintuitive and not be in line with most common customer behaviour (e.g. when renovating a property, customers tend to install solar panels as well).</p>
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Table 7: Related EU regulation references.

Related EU regulation reference(s)	Alias	Directive implemented in NL (if applicable)
Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings	The Energy Performance of Buildings Directive version III	Wet Bouwbesluit 2012
Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (Text with EEA relevance.)		

²³ These methodologies have not been analysed in this version of DEEMF.

Table 8: Related Dutch regulation references.

Related regulation reference(s) in Dutch Law or best practice framework(s)	Section(s)
Bouwbesluit 2012	<i>Hoofdstuk 3. Hoofdstuk 5. Technische bouwvoorschriften uit het oogpunt van energiezuinigheid en milieu Afdeling 5.1. Energiezuinigheid, nieuwbouw</i>
Tijdelijke regeling hypotheckair krediet & Besluit Gedragstoezicht financiële ondernemingen Wft	<i>Tijdelijke regeling hypotheckair krediet Artikel 1, 2, 3, 4, 5 en 6 (and corresponding annexes).</i>
Nationaal instituut voor budgetvoorlichting	<i>Advies Financieringslastnormen 2022</i>
Praktijkboek besluit bouwwerken leefomgeving, Ministerie van Binnenlandse Zaken en koninkrijksrelaties	
NEA Guidance on Home Improvement	<i>Energieprestatie-eisen bij verbouw en renovatie</i>
Onderzoek innovatieve opties BENG(Bijna EnergieNeutrale Gebouwen) In opdracht van het ministerie van Binnenlandse Zaken en Koninkrijksrelaties	

5.2 Perspective 2: Data availability

When analysing the data availability in respect of the SCC for Section 7.2 the EEM NL Hub considered the data available in EP-Online and the data generally available in the source systems of mortgage loan servicers. See sections [EP-Online data availability](#) and [relevant mortgage \(servicing\) data for SCC](#) for an overview, in the annex.

Major renovations

It is a requirement under the Dutch building code that major renovations (*“ingrijpende renovaties”*), comply with the building code. However, there is no legal requirement to obtain and (re-)register an EPC following a major renovation and as a result, the energy performance of a property post-renovation is not necessarily recorded in EP-Online (*“geen afmeldplicht in EP-Online bij ingrijpende renovatie”*) unless/until an EPC is required for other reasons such as letting or sale of the property.

No central register exists where major renovations are recorded and as a result (confirmed by own research of the EEM NL hub members), major renovations can currently i) not be directly identified in EP-Online or any other central registry or database, and ii) are virtually impossible to correctly identify in traditional mortgage servicing data (without changes to the processes being implemented) and thus, it is currently impossible to devise a general definition or guidance on how to identify and check, on a case-by-case, basis if the conditions for a major renovation have been met upon completion of the renovation.

Research carried out in 2020 confirms these observations, see section 9.3. Therefore, the EEM NL Hub working group has concluded that (although the definition of a major renovation in the Netherlands is relatively clear), for the moment insufficient data is available to further consider the major renovation option to meet the SCC of a renovation, in this version of the DEEMF.

Reduction in net-PED

As of November 2023 1,408,446 of the valid EPCs for residential properties in the Netherlands are based on the NTA 8800 methodology (which was introduced on 1 January 2021) out of 5,186,896 valid EPCs for residential properties in total²⁴. This means that 86% of all the residential properties in the Netherlands with a valid EPC do not have a PED value as this was not provided in EPCs under the legacy methodologies. In addition, approximately 3.67 million building units in the Netherlands do not have a valid EPC²⁵.

Currently only 27.15% of the EPCs are based on the NTA 8800 methodology²⁶. Determining if the 30% reduction in net PED will be achieved, using the available 'pre-renovation' PED values is thus not feasible for the vast majority of properties in the Netherlands without a new EPC being issued or the PED being measured in another way. Over time the availability of PED values as included in EPCs that are based on the NTA 8800 methodology will increase.

EPC classes are directly related to the BENG 2 metric within the NTA 8800 methodology. Therefore, an argument can be made that reverse inference could be possible. For example: an EPC of class C should have a PED of between 190 and 250 kWh/m²/year. This is true for EPCs that have been determined under the NTA 8800 methodology, but not per se for EPCs based on legacy energy performance methodologies. At the time of introduction of the NTA 8800 methodology, calibration studies ("*inijkstudies*") have been performed to determine if EPC class migrations would occur as a result of the introduction of the new energy performance methodology. At this stage it has not yet been analysed if the outcomes of these calibration studies could be used to infer estimated EPC classes under the NTA 8800 methodology from the energy label class under previous methodologies.

Availability of PED data in EP-Online

Of the increasing number of EPCs based on the NTA 8800 methodology as recorded in EP-Online, a very significant part is for newly built properties or properties currently under construction. As of November 2023, 1,085,410 EPCs have been issued for existing (status = "bestaand") properties based on the NTA 8800 methodology (and thus have a PED score). This means that for the existing property stock, 73% have PED data available. Also, EP-Online currently does not record if a renovation has been carried out on a building (unit) and what reduction in PED has been realised over what time period.

An additional challenge is the requirement to determine the reduction in PED without taking into account *the reduction in net primary energy demand through renewable energy sources*. A potential way of doing this is to check if the post-renovation BENG 2 score is 30% lower than the pre-renovation BENG 2 score while the BENG 3 score has not decreased, subject to the boundary condition that the timing between the two moments after issuing the financing is equal or less than three years. Another complexity of this methodology is that it can only be assessed *after the fact*. In practice one wants to know upfront if the renovation is potentially aligned with the Substantial Contribution Criteria of Section 7.2 in order to determine if the loan qualifies for a 'green' funding programme. This is particularly relevant for mortgage customers seeking finance and advice on funding options for energy efficiency improvements.

Availability of PED data in mortgage servicing data

Ideally a financial institution is able to determine before providing the financing for a renovation if the renovation will meet the requirements of the SCC. In practice, in the Netherlands renovation financing is provided in the form of a construction deposit: a short-term (typically one to two year) draw-down facility that can be used to settle the invoices of the renovation.

²⁴ Only the EPCs with a "*woonfunctie*" have been taken into account.

²⁵ There are 8,083,982 residential building units in the Netherlands as of July 2022, according to CBS.

²⁶ These include construction permits ("*vergunningsaanvraag*").

The mortgage servicer verifies the invoices submitted by the borrower and if correctly submitted, the invoice is paid, the construction deposit is drawn, and the mortgage loan amount is increased by the same amount. In most cases, these are 'included' in the overall mortgage loan in the form of a separate loan part. At this point in time, it is not yet customary that within a construction deposit a distinction is made for the type of renovation works: general reconstruction works (that do not enhance the energy efficiency of the property, per se) and sustainability measures ("verduurzamingsmaatregelen") are often combined into one single construction deposit and thus ultimately included in the general mortgage loan.

The use case provided in Box 2 is typical for many mortgage loans with a construction deposit: typically, both the general value-increasing (but not energy efficiency improving) measures are financed together with energy efficiency measures from a single construction deposit.

More recently several mortgage lenders have started promoting the implementation of energy efficient improvement measures by offering specific 'renovation loans', in most cases with beneficial loan conditions. To qualify for these types of loans, the improvements to the property are required to meet specific conditions and general (re)construction works or installations are not eligible. In SCC 7.2 there is no specific reference to the type of renovation and the interpretation of the EEM NL Hub working group is therefore that *any* renovation that meets the SCC qualifies and as a result, the loan related to the whole renovation part would qualify. Note that 'renewable energy sources' can be part of the SCC where a 30% reduction in (net)PED must be established, as long as the condition of net reduction is met in the renovation activity. This assumption has been addressed and confirmed by the Q&A in answer 134, stating that all renovation measures taken during a three-year period can be counted to determine the 30% reduction.

Box 2: Use case renovation construction deposit.

Use case: Example of a mixed renovation financed through a construction deposit "*bouwdepot*".

Situation: A customer requests a mortgage loan for the purchase of a new ("*grondgebonden*") property for a price of € 550,000. The property has an EPC of Class E (recorded in EP-Online) and a pre-renovation PED of 300 kWh/m²/year.

Renovation: The customer also wants to renovate the property by purchasing and installing a new kitchen, a new bathroom and a new wooden floor (estimated cost € 75,000) and insulate the property (at a cost of € 50,000).

Documentation: The consumer has a valuation report ("*taxatierapport*") including the reconstruction / renovation work, with a total property value of € 675,000. The customer requests a mortgage loan of € 675,000 euro (i.e. a Loan-to-Value of 100%).

Mortgage loan structure: On day one, the customer is granted a mortgage loan totalling € 675,000 of which € 125,000 is placed in a construction deposit. The full mortgage loan of € 675,000 can either be structured as one loan for the full amount, or it can be composed of several loanparts, e.g. one loanpart of € 550,000 and a separate loanpart of € 125,000. During the renovation, the customer submits invoices to the mortgage lender, and these are paid out.

New EPC: Once the renovation is completed, a new EPC is obtained demonstrating that the energy performance of the property has improved to EPC Class B (PED of 180 kWh/m²/year) excluding renewables²⁷.

EU Taxonomy alignment: as the net PED of the property has improved by 40% ($180 / 300 \text{ kWh/m}^2/\text{year} = 60\%$), the SCC for a renovation are met and demonstrated in the form of an EPC and the whole renovation (and thus the € 125,000 loan part) would be deemed to be in line with the SCC. Note that in this case the PED reduction was achieved by energy improvements that are not based on renewable energy.

²⁷ Note that in this example we "know" that no renewable measures are implemented: only insulation measures. Otherwise (when also one or more renewable measures are taken) it is difficult to ascertain that the PED improvement was excluding renewables.

Observations in respect of data quality & availability

1. EP-Online is not a usable data source to determine if a renovation qualifies as a major renovation. Given the lack of a central registry, this data can currently only be obtained from the customer.
2. Under the Dutch building code, it is a requirement for a major renovation that it includes the installation of renewable energy sources (where possible) (*“hernieuwbare energie-eis”*).
3. For the calculation of the net PED reduction, the reduction from renewable energy sources cannot be included (i.e. must be excluded from the calculation). The SCC of Section 7.3 provide some insights as most of the measures described in Section 7.3 *“Installation, maintenance and repair of energy efficiency equipment”* do improve the energy efficiency but are not considered as *renewables*. Q&A answer 130 confirms that the activities described in criteria 7.6 can be regarded as *renewables*.
4. Given the current lack of a government approved “transparent and proportionate method” to determine the PED of a property (pre-renovation), our conclusion is that the only workable option for now is to obtain an EPC (with a PED value) under the NTA 8800 methodology pre-renovation. This EPC will automatically be recorded in EP-Online and accessible for mortgage lenders.
5. An EPC based on the NTA 8800 methodology, includes suggestions on energy efficiency improvements. It however does not include any estimation or calculation of what effect the proposed measure or combination of measures (could) have on the BENG 2 and or BENG 3 scores. Set aside any form of guarantee for a building owner that such a measure will have such an energy performance improvement.
6. It is not possible to identify, post-renovation, from an EPC document, based on the NTA 8800 methodology, to what extent the individual types of measures that were implemented since the pre-renovation EPC, have attributed to changing BENG 2 and BENG 3 values (when multiple measures energy efficiency measures have been carried out). In order for Section 7.2(2) to work effectively, the NTA 8800 / BENG protocol needs to be amended in line with EU Regulation (The EU Taxonomy Climate Delegated Act).
7. In applying the EU Taxonomy Technical Screening Criteria in practice, it is needed to accurately identify, track and account for individual energy efficiency measures. Specifically for situations where multiple clauses of the substantial contribution criteria could be (potentially) aligned. For instance, if certain measures are potentially in line with SCC of sections 7.3 or 7.6 (currently out of scope in this document) one wants to track and distinguish these accurately and detailed.
8. In context of SCC 7.2 it is important for financial institutions to have an adequate view of the energy efficient measures that are to be carried out. Specifically, to make an assessment of ‘how reductions in net primary energy demand through renewable energy sources are not taken into account’. Therefore, a granular and detailed overview of the proposed sustainability measures that an institution is financing, should be available. In addition, an assessment should be made per measure what the impact of the individual measure is on the BENG 2 score and/or the BENG 3 score.
9. An EPC based on the NTA 8800 methodology notes, on the second page of the certificate: *‘Renewable energy is derived from the sun, biomass, outside air or ground. Solar panels, solar water heaters, heat pumps and a biomass boiler or heating system increase the share of renewable energy’*²⁸. This is roughly, however not exactly, in line with the wording of the Section 7.6.

²⁸ “Hernieuwbare energie is afkomstig uit zon, biomassa, buitenlucht en bodem. Zonnepanelen, zonneboilers, warmtepompen en biomassaketels vergroten het aandeel hernieuwbare energie.”

10. At this point in time, the EEM NL Hub working group has not extensively analysed the measures as approved under the so-called EBB (“Energiebespaarbudget”) / EBV (“Energie besparende voorzieningen”) scheme, the measures for which subsidies are available known as the ISDE (“Investeringssubsidie duurzame energie en energiebesparing”) and the eligibility of these measures in relation to the EU Taxonomy. In Box 3 we detail the further analysis needed.

Box 3: Further analysis required on EBB / EBV vs EU Taxonomy definitions.

Several mortgage lenders currently offer renovation loans, in most cases with favourable loan-conditions such as reduced interest rates, to stimulate the improvement of the energy efficiency of properties. Often these products are based upon Dutch norms of granting loans for energy efficiency, such as included in the “Tijdelijke regeling hypothecair krediet & Besluit Gedragstoezicht financiële ondernemingen”.

Under this norm a common set of Dutch energy efficiency measures has been established, known as the EBV and EBB. Further investigation is recommended into how the EBB and EBV measures relate to:

- Other regulation: such as the EU Taxonomy (sections 7.3 and or 7.6), the Energy Performance and Building Directive, the Renewable Energy Directive and the Energy Labelling Directive (Regulation (EU) 2017/1369);
- How different measures Influence the BENG 1, 2 and 3 metrics;
- How these relate to different national or municipal subsidy programmes;
- How combinations of EBB and EBV measures impact the above;
- Potential overlap between EBB and EBV eligible measures & ISD eligible measures.

5.3 Perspective 3: Allocation to loan(part(s)).

Static application

Irrespective of which option under Section 7.2(1) (major renovation or 30% reduction in net PED) is selected, only the fraction of the (mortgage) loan that is used for the (major) renovation can be designated as aligned with the substantial contribution criteria if the SCC are met. Within the work carried out in a renovation no distinction is made between elements that have no effect on energy efficiency and the elements that increase the energy efficiency of the property being renovated. Therefore, at most, a fraction of the loan(part) equal to the loan amount used to finance the renovation can be designated in accordance with the SCC of 7.2 unless if, upon completion of the renovation work an EPC Class A is issued in which case (if the property was built before 31 December 2020), the whole mortgage loan can be designated as aligned with the SCC of Section 7.7(1).

Dynamic application

Table 9: Dynamic application of renovation to mortgage loan(parts).

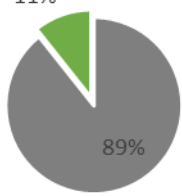
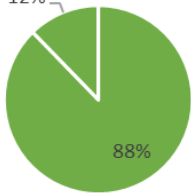
		Economic Activity
		Renovation of Existing Buildings
Financing relative to the Economic Activity	Before	Financing can be approved and granted before the renovation work commences. If an <i>estimate</i> * is present that a reduction of 30% in net PED is going to be met, the financing of the renovation can be attributed to be in line with the SCC, based upon the knowledge (the estimate) as of the assessment time. *Irrespective of the estimation procedure.
	During	Idem above, however the renovation work needs to be carried out within a period of three years.

	After	<p>When the renovation work is completed, a validation through an Energy Performance Certificate needs to be performed. Multiple 'end-states' are possible here:</p> <ul style="list-style-type: none"> • The 30% reduction in net PED (excluding renewables) is confirmed and the EPC Class of the property is < A. In this case the renovation loan is aligned with the SCC for the remainder of the duration of the mortgage loan(part). • A 30% reduction in net PED (excluding renewables) is confirmed and the EPC Class of the property is ≥ A. In this case, based upon the SCC of Section 7.7 the full mortgage loan can be classified as aligned if the building was built before 31 December 2020. We assume a rational actor (homo economicus) would apply SCC 7.7 instead of 7.2 as the former would result in a greater Taxonomy alignment amount²⁹. • The 30% reduction in net PED (excluding renewables) is not achieved: the loan is no longer aligned based on the SCC of Section 7.2. In this case, alternatives can potentially be feasible, for instance: upon close(r) specification of the energy efficiency measures it might be feasible to designate some of the economic activities to be in line with the SCC of Sections 7.3, and or 7.6³⁰ and the specific amounts can be classified as aligned.
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5.4 Potentially undesired policy consequences

Table 10 contains an illustration of different SCC alignment outcomes for possible renovation use cases. It demonstrates that the current SCC for renovation could have the undesired side-effect that renovations to properties that are already relatively energy efficient are preferred over energy efficiency renovations to properties with a poor energy label and that are unlikely to result in a final EPC of class A.

Table 10: Energy Efficient Renovations and Taxonomy Alignment.

#	Example renovation use case	Outcome	Outcome visualised
1	Example 1: (EPC from D to B) Current mortgage loan = € 500K Renovation loan = € 60K In addition to the mortgage loan for the property purchase, the resident takes out a renovation loan to insulate his home (€ 40K) and install a new kitchen (€ 20K). The insulation improves the PED with 31% and after the renovation works the property obtains an EPC of Class 'B'.	'Only' € 60k (11% of total loan amount) is considered aligned with activity 7.2.	 <ul style="list-style-type: none"> ■ Loan existing property = Not SCC Aligned ■ Renovation Loan = 7.2 SCC Aligned
2	Example 2: (EPC from D to A) Current mortgage loan = € 500K Renovation loan = € 70K Same as scenario 1 but solar panels are included (€10K) in the renovation loan. The PED improvement is 41% and after the renovation works the property obtains an EPC of Class 'A'. ³¹	Full loan amount is considered EUT aligned* since EPC = A.	 <ul style="list-style-type: none"> ■ Home loan resulting in EPC = A = SCC 7.7.1 ■ Renovation loan resulting in EPC = A = SCC 7.7.1

²⁹ Not taking into account DNSH and MS criteria.

³⁰ This demonstrates the need for detailed and granular tracking of the "actual" individual measures that are financed by the lender.

³¹ Under the NTA 8800 energy labelling methodology, installing solar panels has a positive effect on the BENG 2 score. So, despite the fact that under the SCC renewable energy sources cannot be considered to determine if a 30% improvement has been realised, solar panels could 'make' the whole property SCC 7.7 aligned.

5.5 Conclusion

Major renovation

It is our assessment that, in practice, the SCC of Section 7.2 will be very challenging to meet or demonstrate. As described, major renovations are not recorded in EP-Online (or any other central database in the Netherlands) as there is no requirement to obtain a new EPC after a major renovation even though the renovation needs to comply with the Dutch building code.

Therefore, we do not elaborate on this alternative in this version of DEEMF as there is (at this point in time) simply no way to determine, based on officially recorded information, if a renovation is a major renovation and if the conditions of a major renovation have been met.

In the short term, using the SCC 7.2 for major renovations, we only see this as feasible if this is based on proprietary information that the consumer would provide to the mortgage lender as there is no central registration system for major renovations³².

If a mortgage originator 'knows' that a customer is to undertake a renovation, it might be worth checking if the consumer plans to change more than 25% of the surface of the building envelope. If this is the case, the consumer is required to abide by the rules of a major renovation and consequentially the regulations for renewable energy need to be followed (*"hernieuwbare energie-eis"*).

Reduction of (net) PED

The SCC of Section 7.2 present several options to 'estimate' the reduction in (net) PED resulting from a renovation, each with different pro's and con's. In the Netherlands, currently no transparent and proportionate method to estimate the PED impact of a renovation exists, let alone that it is widely accepted and applied. The building-survey option appears not to be easily applicable to residential properties and would in any case need to be further developed.

An energy audit both before and after a renovation is relatively expensive, particularly for the smaller renovations and does not provide a guarantee that the reduction in net PED will be achieved. An EPC based on NTA 8800 does include a basic summary and suggestions for energy efficiency improvements that can be done to the property but does not 'guarantee' that these measures will actually result in a (net) PED reduction of 30%³³. Another important challenge is the requirement for the reduction in PED not to take into account the reduction through renewable energy sources. The required information is currently not readily available on an EPC and would need detailed interpretation.

The EEM NL Hub advocates the further development of the two alternative estimation procedures with the aim of estimating the pre-renovation PED score of a property in a simplified manner (i.e. without an on-site measurement). An alternative route that could be explored is the use of proxy estimation in energy efficiency renovations: for instance, an improvement of two or three EPC classes could be regarded as an energy efficient renovation. The EEM NL Hub has not (yet) investigated if, in practice, it can be substantiated that these improvements by two or three EPC classes will result in the reduction of the net PED by 30%. Such a business rule and corresponding substation might be very useful for EU Taxonomy purposes and, maybe more importantly, would be very transparent for consumers as well. However, the requirement that renewable energy sources are not to be taken into account when determining the improvement in PED is a significant obstacle in developing such method, particularly given the fact that from a consumer perspective the installation of solar panels is most often included in an energy efficiency renovation.

³² At the moment of writing we are not aware of any developments in this area in the Netherlands. The introduction of a central registry for major renovations could significantly improve the applicability of the SCC over time. Potentially with the implementation of a future EPBD recast in national regulations and policies this is feasible.

³³ Several (commercial) parties are introducing estimation tooling & expertise and offer complementary 'guarantees' that the energy performance will improve to an estimated point.

6 DEEMF Analysis: Acquisition & ownership of buildings (Annex I TSC SCC, Section 7.7)³⁴

Quick Read

- For buildings built before 31 December 2020 (or with a construction permit application dated before the NZEB norm (in the Netherlands applicable as of 1 January 2021) was introduced): a valid Energy Performance Certificate (EPC) of class A should be available to be considered aligned.
- For buildings built after 31 December 2020 (and with a construction permit based on the NZEB norm): SCC of Section 7.1 apply and the '10% better than threshold value' criterion must be met to be considered SCC aligned.

DEEMF 2023 Update Summary

- In the 2022 version of DEEMF we had incorporated a (separate) analysis and section on the criteria for activity 7.1 as we had taken the interpretation that financing a new construction is a 7.1 activity. However, we already described that an alternative interpretation could be that new constructions are also classified as a 7.7 activity. With the guidance provided by the EC we now have clarity that for residential mortgage loans Section 7.1 is not to be applied for new constructions, but Section 7.7(2) (which contains a direct reference to the SCC of Section 7.1). Therefore, we have moved large parts of the original 7.1 guidance over to 7.7(2).
- The EC guidance confirms that the date of application for a construction permit is the date that is to be used to assess if for a building (unit) the criteria of section 7.7(1A/B) or 7.7(2) should be applied. And also that the SCC applicable at the time of the construction permit should be used (i.e. the date of the complete application for receiving the construction permit).
- The EC guidance confirms that we do not have to take into account the DNSH criteria for SCC 7.1 only the SCC (of Section 7.1) when applying SCC 7.7(2).
- We have incorporated an analysis of the (linguistic) wording of 7.7(1.B) (i.e. the top 15%) criterium. In the appendix we have incorporated a description of some parties that offer such a study for the Netherlands.
- We can use the PED on building level when it is not available on building unit level (often the case for apartments (in the Netherlands)). Unfortunate use of the word Provisional in this answer. We understand it to mean that the PED as noted in the construction permit status = "vergunningaanvraag" might be used before / during construction.

In this section we explore ways to identify if a building(unit) complies with the SCC of Section 7.7 (Acquisition and Ownership of Buildings). The SCC contains different criteria depending on when the building was built (before or after 31 December 2020). We are interpreting the economic activity of exercising ownership or buying real estate as described in the CDA, see Figure 9.

³⁴ The criteria for large non-residential building have been left out of scope.

Figure 9: Description of activity 7.7 as described in the Climate Delegated Act.

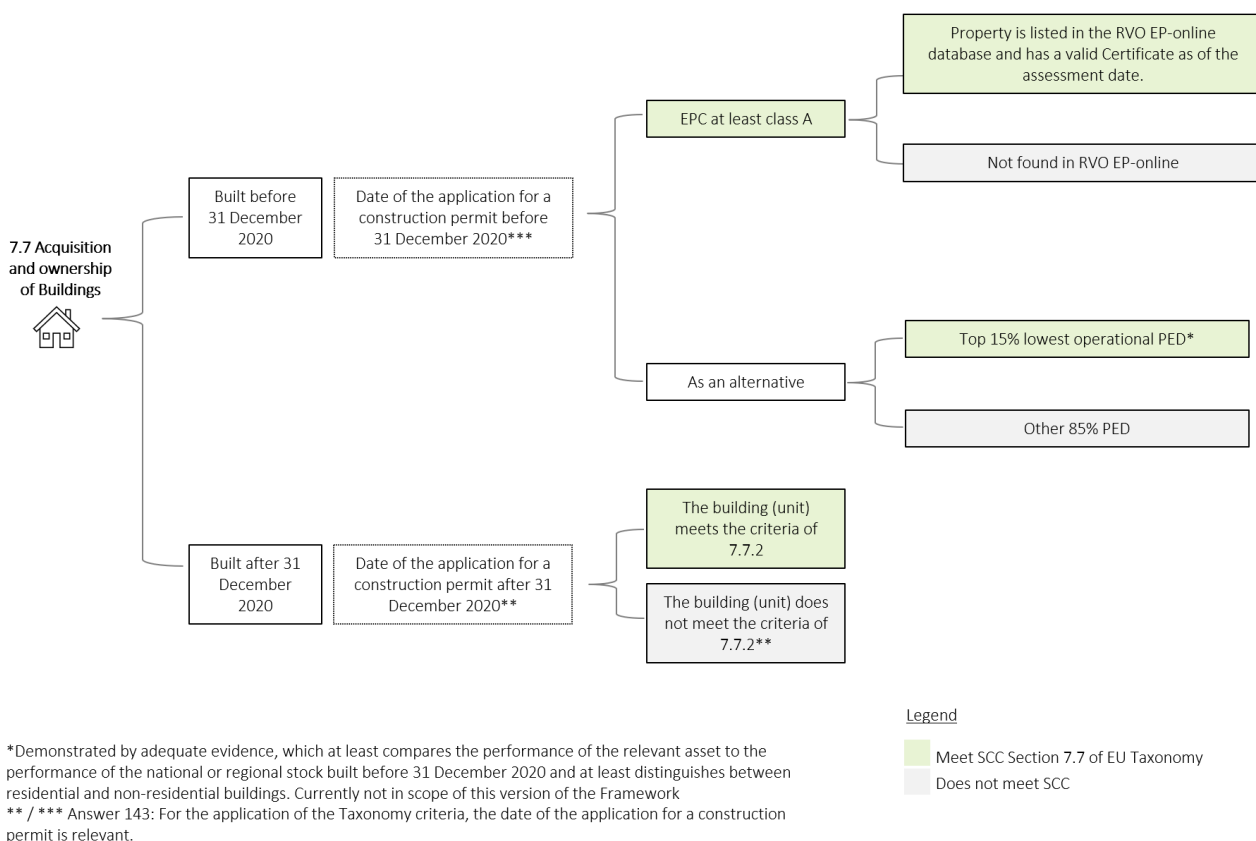
7.7. Acquisition and ownership of buildings

Description of the activity

Buying real estate and exercising ownership of that real estate.

For buildings built before 31 December 2020 two options are provided to determine if the SCC are met. As an alternative to the EPC Class A criterion, it is also allowed to provide evidence that the building is within the top 15% of operational Primary Energy Demand of buildings built before 31 December 2020. This is depicted in Figure 10.

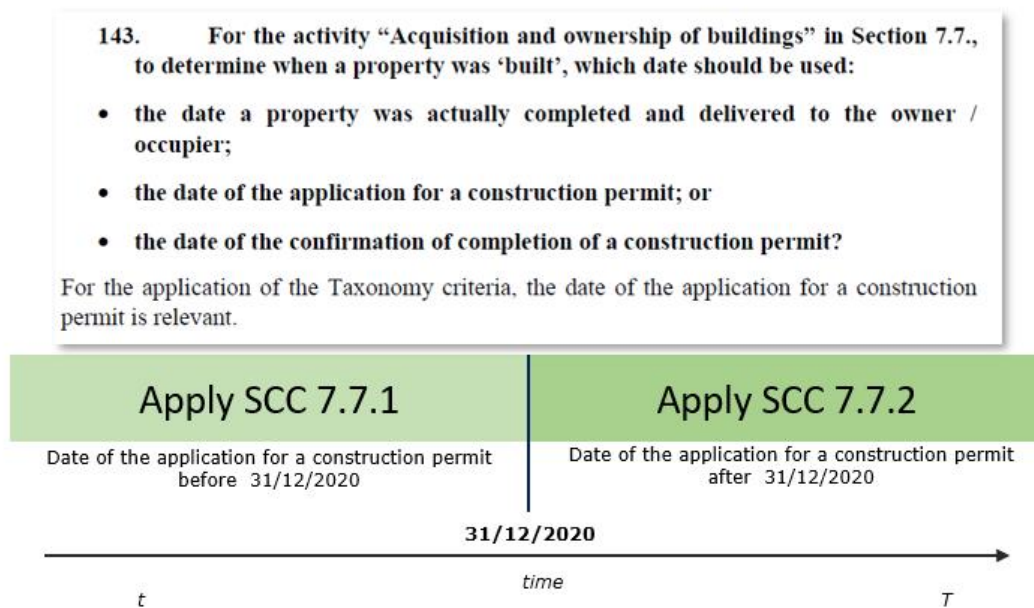
Figure 10: Overview SCC of Section 7.7.



To assess if the criteria of SCC 7.7(1A/B) or 7.7(2) are to be applied, the European Commission has noted that the date of the application for a construction permit is relevant³⁵. This is depicted in Figure 11

³⁵ See answer 143.

Figure 11: Determining the criteria based on definition of built.



6.1 Perspective 1: Interpretation and application

Section 7.7(1) wording in the EU Taxonomy

Table 11: Section 7.7(1) wording in the EU Taxonomy.

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.7 Acquisition and ownership of buildings	L68	<p>1. For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A.</p> <p>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.</p> <p>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.</p>	

Linguistic decomposition and interpretation of key words & phrases of Section 7.7(1A)

Table 12: Wording of CDA 7.7(1A).

Substantial contribution to climate change mitigation of Annex I
For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A.

Table 13: Linguistic decomposition and interpretation of key words & phrases of Section 7.7(1A)

Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
<i>building</i>	See section building	idem definition in Table 4	idem definition in Table 4
<i>Built before 31 December 2020</i>		<p>Only as of 1 January 2021 is it a requirement for a building to be constructed according to the NZEB regulations. All construction permit applications ('<i>vergunningaanvraag</i>') before that date did not have to meet the NZEB requirements.</p> <p>As noted in the Q&A (A143): For the application of the Taxonomy criteria, the date of the application for a construction permit is relevant. In (many) cases it is clear that the building has been built (long) before 31 December 2020.</p>	The application date of the construction permit is on or before 31 December 2020.
<i>Energy Performance Certificate</i>		We want to emphasise the importance of the abbreviation Energy Performance Certificate (EPC) which is not to be confused with an " <i>Energie Prestatie Coefficient</i> ", a term that has been used often on Dutch energy performance certificates based on older calculation methodologies.	<p>Energy Performance Certificate (EPC): a document or digital record describing the energy performance of the building(unit).</p> <p>A certificate should be present with a valid validity date, as of the assessment date, irrespective of the methodology.</p>
<i>Energy Performance Certificate (EPC) class A</i>		See for a Section 9.2 for a diagram with EPC classes of the NTA 8800 methodology that depicts the ordinal scale of energy performance classes in the Netherlands.	<p>Irrespective of the EPC methodology all valid Energy Performance Certificates with any of the following values (A, A+, A++, A+++, A++++).</p> <p>Note that all EPCs Class A with a valid certificate or registration in EP-Online are deemed eligible, thus including those based on older (legacy) EPC methodologies.</p>

Linguistic decomposition and interpretation of key words & phrases of 7.7(1B) (Top 15%)

Table 14: Taxonomy Wording on top 15%.

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.7 Acquisition and ownership of buildings	L68	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.	

Table 15: Linguistic decomposition and interpretation of key words & phrases of 7.7(1B) (Top 15%).

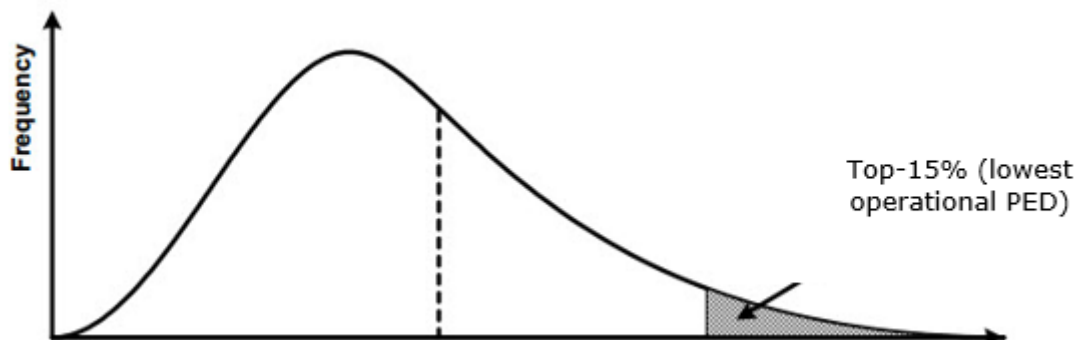
Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
<i>As an alternative</i>		As an alternative to using the EPCs of Class A. Per building unit (reference asset) an alternative assessment of the Substantial Contribution Criteria can be applied. This could be an interesting alternative when no EPC is available. At the moment of writing there is some discussion on how the word ‘alternative’ should be interpreted and applied. ³⁶ The working assumption of the EEM NL Hub is that it is to be applied as per relative asset (per building (unit)).	As an alternative to using the EPCs of Class A. Per building unit (reference asset) an alternative assessment of the Substantial Contribution Criteria can be applied.
<i>Building</i>	See section building	idem definition in Table 4	idem definition in Table 4
<i>Within the top 15%</i>		Within the top 15% of most energy efficient building stock of residential building units in the Netherlands built before 31 December 2020. See the paragraph below and also Q&A (A150). Also note Q&A (A152): if a building unit is within the top 15% at a certain date, it does not automatically mean that it is considered to meet the SCC during its full lifetime: when the top 15% is recalculated, it could be that an individual	Within the top 15% of most energy efficient building stock of residential building units in the Netherlands built before 31 December 2020.

³⁶ In the working group it was extensively discussed how the word “alternative” can be interpreted: Can it be applied as per “relevant asset”, meaning that per relative asset one should assess if there is an EPC of class A or if it is in the Top-15%, or put differently, per asset a different method (either EPC = class A or Top-15%) can be used and applied. Or should the word “alternative” be interpreted and applied per portfolio, meaning that a choice is made for the total (mortgage) loan portfolio of an institution: all building(unit)s in a portfolio are assessed (for EU Taxonomy alignment based on Section 7.7(1A/B)) either on the criterium that they have an EPC of class A OR all building(unit)s in a portfolio are assessed based on the Top-15% criterium. Additional guidance on the interpretation of the word ‘alternative’ has been sought from the EC by the EEM NL Hub, but at the moment of writing no response has been received.

		building unit is no longer within the top 15% (e.g. if the composition of the building stock (and thus the top 15% threshold value) has changed. Also note Q&A (A157).	
<i>of the national or regional building stock</i>		In the Netherlands no differentiation is made in the EPC methodologies and building code according to geographic areas.	Of the Dutch residential building stock
<i>operational Primary Energy Demand (PED)</i>	Hoofdstuk 5. Technische bouwvoorschriften uit het oogpunt van energiezuinigheid en milieu Afdeling 5.1. Energiezuinigheid, nieuwbouw	Primary Energy Demand (PED) is interpreted as BENG 2 indicator as mentioned in Article 5.1 as “ <i>Primair fossiel energiegebruik</i> ”. Considering the answer to Q153, our interpretation is that the BENG 2 value is to be used and there is no particular reason the word <i>operational</i> has been included here.	Primary energy demand expressed in kWh/m ² /year on building unit level. EP-Online definition: Pand_primaire_fossiele_energie
<i>adequate evidence</i>		Other than Q&A (A150) where the words ‘(e.g. a recent study)’ have been inserted after the words ‘adequate evidence’, there is no concrete wording on what ‘adequate evidence’ means. Q&A (A151) provides some further guidance on methodologies acceptable to compare the performance of the relevant asset to the performance of the national or regional stock. In addition the study should be public.	A public study that contains a description of the methodology applied and the data used to determine the distribution of operation Primary Energy Demand over the national building stock and the value determined for a specific building unit.
<i>The performance of the relevant asset</i>		See also Q&A (A150 and 151).	The operational Primary Energy Demand of the relevant building unit as determined in the analysis applied vis-à-vis the reference population.
<i>To the performance of the national or regional stock</i>		See also Q&A (A150 and 151).	The operational Primary Energy Demand of the national building stock as determined in the analysis applied.
Built before 31 December 2020		idem definition in Table 13	idem definition in Table 13
Distinguishes between residential and non-residential buildings.	EP-Online	EP-Online contains a classification for different types of building units. A building unit classified as “ <i>met woonfunctie</i> ” is considered residential for the purpose of Section 7.7.	The building unit is classified as a type of property that is listed as “ <i>met woonfunctie</i> ” in EP-Online.

In an ideal (theoretical) world, all building units in the Netherlands built before 31 December 2020 have an official PED-value and we would *just* have to rank them from low to high and select the top 15% of the frequency distribution, this idea has been reflected in Figure 12.

Figure 12: Theoretical frequency distribution of PED.



The SCC on the top 15% does not provide any actual detail on the possible estimation or assessment techniques. It only prescribes certain differentiations that need to be applied (built before 31 December 2020 and residential versus commercial buildings) and it requires the outcome to be ‘demonstrated by adequate evidence’. As there is no country in the European Union with 100% coverage of EPCs at the moment of writing, all parties that wish to apply the top 15% criterium will need to apply a form of estimation or assessment technique.

Of the buildings with an EPC only a subset has an EPC with a PED-value and therefore an estimation or assessment technique would need to be used to determine the (estimated) operational PED of all the residential building(unit)s in the Netherlands built before 31 December 2020. All building units with an operational PED that is lower than the determined threshold value can then be considered to meet the SCC of 7.7(1B).

The EEM NL Hub does not perform a calculation or estimation of the top 15% and relevant threshold values. We aim to analyse the SCC wording in the context of the Netherlands while taking into account the most recent EC guidance.

The Q&A highlights two elements to be applied in the assessment. Firstly, the requirement that a study describing the top 15% should be public and transparent (*“adequate evidence should be provided (e.g. a recent study)”*). In addition, the answer to Question 151 states that *“it is not possible to use proxies, such as the year of the construction of the building”*³⁷.

In the Netherlands different studies have been performed and are used by financial institutions to determine the top 15% of most energy efficient building units. Originally, the use of these studies has been mainly for green (bond) frameworks and not for demonstrating EU Taxonomy alignment. As a result, the specifics of these studies deviate from the requirements of the SCC as included in Section 7.7 (and can thus not be 1:1 applied for EU Taxonomy purposes). In addition, these *non*-EU Taxonomy based top 15% methods, often do not (need to) distinguish between residential and non-residential and or built before 31 December 2020.

In the EEM NL Hub working group sessions it was decided that it was desirable to create a common linguistic understanding of the SCC w.r.t. to the top 15% in the Netherlands. In addition, the working group members have proposed suggestions, in the form of Building Blocks that they deem meaningful in the description of a top 15% study, see section 9.8. as it can improve transparency of the different studies for relevant stakeholders. Lastly, in the appendix

³⁷ Answer to the question: Is it permissible to use a weighted requirement value based on the valid new building regulations of the last 15 years for the definition of the necessary requirement value for “the best 15 % of the stock” as referred to in substantial contribution criteria of the activity. “Acquisition and ownership of buildings” in Section 7.7(1B)

we have added, as a reference the descriptions by three different vendors that provide a top 15% analyses (see Sections 9.9, 9.10 and 9.11 respectively).

The EEM NL Hub does not have an opinion on these methodologies, content or methods nor is it currently in the scope of this document to analyse these methods. The methods referred in this document are created, governed and owned by the respective entities and can be subject to change. The three entities are (affiliated) members of the EEM NL Hub and part of the top 15% working group. There might be other third-parties offering similar analyses (study) on the top 15% for the Netherlands. This document is not an advice or an endorsement of any method.

Linguistic decomposition and interpretation of key words & phrases of 7.7(2)

Table 16: Activity 7.7(2) of the Climate Delegated Act.

Substantial contribution to climate change mitigation of Annex I
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.

Table 17: Linguistic decomposition and interpretation of key words & phrases of 7.7(2).

Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
<i>building</i>	See section building	We use the distinct categorisation of buildings as can be found in EP-Online combined with the metrics of Table 5.1A (<i>bouwbesluit 2012</i>) and a categorisation in buildingtype (<i>'grondgebonden en niet-grondgebonden'</i>). In our definition a building is a building unit as the energy performance is ultimately calculated and registered in the Netherlands on building unit level. Note that it is important to look into the type of building and building sub-type to determine of the criteria of Section 7.1 are met.	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A (<i>'bouwbesluit 2012'</i>) and a categorisation in building type (<i>"grondgebonden en niet-grondgebonden"</i>).
<i>Built after 31 December 2020</i>		See also Q&A (A143).	The construction permit application is dated (submitted) after 31 December 2020.
<i>Meets the criteria specified in Section 7.1</i>		The SCC of Section 7.1 the '10% better than threshold value' criterion, needs to be checked as reflected in Answer 107.	See SCC of 7.1 as depicted in Table 18 and Table 19.

In the section below we have copied the relevant criterium of Section 7.1 for the application of 7.7(2).

Quick Read

The EU Taxonomy requires building (units) with a construction permit application date after 31 December 2020 to be built according to the NZEB criteria and the Primary Energy Demand (PED) should be 10% less than the locally applicable threshold value.

In the Netherlands PED is expressed as the BENG-2 indicator and for new constructions a threshold value is calculated (*"BENG-2 eis"*), recorded and published.

In the Netherlands, NZEB is incorporated into the building code, the BENG framework and the NTA 8800 calculation methodology as of 1 January 2021. EPC records based on NTA 8800 (with status = 'completion' (*"opgelevering"*) or 'permit application' (*"vergunningaanvraag"*)) list the PED and the applicable PED threshold value.

The PED and applicable threshold value can differ per building type (*"grondgebonden vs. niet-grondgebonden"*).

In this section the ways to identify if a building is being or has been constructed according to the SCC of Section 7.1 are explored. To determine if the SCC have been met (i.e. the requirement of the PED to be 10% less than the locally applicable threshold value), the estimated or measured PED must be compared to the threshold value as required under the Dutch building code. Alternatively, for those buildings with an EPC of A+++, it can be concluded that the '10% better than threshold value' criterion has been met automatically as the EPC Class A+++ is tied to a PED of ≤ 0 kWh/m² per year.

Table 18: Wording of activity 7.1 of the Climate Delegated Act.

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.1 Construction of New Buildings	F41.1, F41.2, F43	<p>Constructions of new buildings for which:</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 Council</p> <p>²⁸³. The energy performance is certified using an as built Energy Performance Certificate (EPC).</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>

Table 19: Linguistic decomposition and interpretation of key words & phrases of 7.1.

Term or key phrase	Source in Dutch regulation and relevant references	Analysis	DEEMF definition
Primary Energy	Hoofdstuk 5. Technische bouwvoorschriften	Primary Energy Demand (PED) is interpreted as BENG 2 indicator as	Primary energy demand expressed in kWh/m ² /year on building unit level.

<i>Demand (PED)</i>	uit het oogpunt van energiezuinigheid en milieu Afdeling 5.1. Energiezuinigheid, nieuwbouw	mentioned in Article 5.1 as “ <i>Primair fossiel energiegebruik</i> ”.	EP-Online definition: Pand_primaire_fossiele_energie
<i>building</i>	idem definition in Table 4	idem definition in Table 4	idem definition in Table 4
<i>Resulting from the construction</i>		The assumption is that a building unit will be constructed in accordance with the permit application.	Up and until the construction is completed (so both before and during actual construction) we refer to the PED in the permit application as recorded in EP-Online as Pand_primaire_fossiele_energie (status is (“ <i>vergunningaanvraag</i> ”)).
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 Council	<p>Hoofdstuk 5. Technische bouwvoorschriften uit het oogpunt van energiezuinigheid en milieu</p> <p>Afdeling 5.1. Energiezuinigheid, nieuwbouw</p> <p>The threshold value is set in the wet bouwbesluit in Table 5.1A (bouwbesluit 2012)</p> <p>and differs per building type.</p> <p>Also see DEEMF part I</p>	<p><i>Primary Energy Demand (PED)</i> is interpreted as the BENG 2 indicator as mentioned in Article 5.1 as “<i>Primair fossiel energiegebruik</i>”.</p> <p>As a result, in the vast majority of cases, the maximum values to meet the 10% lower than the threshold value criterion are 27 kWh/m²/year per year and 45 kWh/m²/year per year respectively.</p> <p>There are however, deviations possible for the threshold value. Possible deviations to the threshold value are incorporated per registration in the data field Pand_eis_primaire_fossiele_energie.</p> <p>For standalone (“<i>grondgebonden</i>”) properties with status ‘construction permit application’ (pand_status = “<i>vergunningaanvraag</i>”), the PED on building level as recorded in EP-Online as part of the construction permit application is used and compared with the threshold value</p> <p>For apartments (“<i>niet-grondgebonden</i>”) properties with status ‘construction permit application’ (pand_status =</p>	<p>For houses (“<i>grondgebonden</i>” building units): The threshold value is defined as threshold value fossil energy (“Pand_eis_primaire_fossiele_energie”)</p> <p>Which corresponds to 30 kWh/m² per year on building unit level in most, but not all, cases³⁸.</p> <p>For apartments (“<i>niet-grondgebonden</i>” building units): The threshold value is defined as (Pand_eis_primaire_fossiele_energie)</p> <p>Which corresponds to 50 kWh/m²/year per year on building level, in most, not all cases.</p> <p>There are, deviations possible for the threshold value.</p> <p>Possible deviations to the threshold value are incorporated per registration in the data field Pand_eis_primaire_fossiele_energie. So these do not have to be calculated when analysing EU Taxonomy alignment.</p> <p>The 10 % lower threshold can be checked by calculating if Pand_primaire_fossiele_energie ≤ 0.9 x</p>

³⁸ Deviations to the NZEB threshold value are applicable in some cases as explained in the previous section.

		<p>“vergunnings-aanvraag”) the two following possible situations can be distinguished:</p> <ul style="list-style-type: none"> • Cases where the PED on building unit level is identical for all the building units in the building. Although most likely incorrect, in this case there is no other option than to take this PED as the estimation of the resulting PED. As explained in A109 <i>If only one PED is available for a whole building, that value be used for each individual apartment if the national regulation allows to do so.</i> In addition A115 states: We can use the PED on building level when it is not available on building unit level (often the case for apartments constructions (in the Netherlands)). We understand it to mean that the PED as noted in the construction permit status = “vergunningsaanvraag” might be used before / during construction. • Cases where the PED differs per building unit in the building. <p>Note: any property with an EPC Class A++++ automatically meets the requirement of ‘10% better than the threshold value’ as the maximum BENG 2 value for A++++ is 0 kWh/m² per year.</p>	Pand_eis_primaire_fossiele_energie per building unit.
<i>The energy performance is certified using an as built Energy Performance Certificate (EPC)</i>		<p>Once a building unit receives an EPC with status ‘completion’ (“oplevering”) this means it has been completed and the on-site inspection has taken place.</p> <p>In the Netherlands, the certification of the energy performance of a property is required to include an on-site inspection of the property.</p>	Before and during the construction phase, the ‘as built’ phrasing is interpreted as: how it will be built, according to the information available up and until the moment of completion (“oplevering”) of the building unit.

		<p>This on-site inspection can only take place once the construction of a property is completed.</p> <p>Before and during the construction phase, the EPC of a building(unit) is based on the technical information provided by the applicant in the construction permit application and therefore envisages the building as to be built.</p> <p>At the moment the final EPC is issued, the status of the property in EP-Online will convert from status 'planning permission' ("vergunnings-aanvraag") to 'completed' ("oplevering").</p>	
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Table 20: Related EU regulation references.

Related EU regulation reference(s)	Alias	Directive implemented in NL (if applicable)
Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings	The Energy Performance and Building Directive version III	Wet Bouwbesluit 2012

Table 21: Related Dutch regulation references.

Related regulation reference(s) in Dutch Law or best practice framework(s)	Section(s)
Bouwbesluit 2012	<i>Hoofdstuk 5. Technische bouwvoorschriften uit het oogpunt van energiezuinigheid en milieu</i> <i>Afdeling 5.1. Energiezuinigheid, nieuwbouw</i>
Besluit energieprestatie gebouwen	
Regeling energieprestatie gebouwen	

6.2 Perspective 2: Data availability

For the application of SCC of Section 7.7 it is important to have collateral identifiers, loan or mortgage balance(s) and the date of application of the construction permit. Especially the last data point can be challenging to obtain as it is, at the moment of writing not contained in EP-Online. The land registry ("Kadaster") offers the date the building permit is granted but not the date that the application was received. The latter data point should be present at the municipality that receives the building permit request. This data field is required to be able to determine if the construction permit application was submitted under the NZEB regime or before, and thus whether or not the SCC of 7.1 need to be applied or if an EPC Class A is sufficient to meet the SCC of Section 7.7(1A).

Data availability considerations for Section 7.7(1A)

In general, the data availability for criterium 7.7(1) can be regarded as sufficiently available, with the mere exception of building permit application date. The central government database EP-Online reflects the valid energy performance certificate registrations and is updated daily for any new EPC issued or changes made. As noted earlier, the date of the application for a construction permit is not available in this resource. It should be sourced separately to be able to determine when a building (unit) was 'built'.

Checking the construction permit application date is only relevant for building units that have been constructed or have been under construction since 31 December 2020. The construction year of a building unit³⁹ can serve as a first proxy to assess whether it is needed to look closely at the construction permit application date. In Box 4 we highlighted some background information on provisional EPCs that have been issued by the RVO in the past but have been discarded.

Box 4: Provisional EPC issued and retracted by the Dutch Government.

In 2015 all building(unit) owners 'received' a temporary or "*voorlopig*" energy label from NEA. This was based on an assessment of the energy performance of the building(unit) based on the NEN 7120 methodology and readily available data⁴⁰. As of 1 January 2021, NTA 8800 replaced the former (legacy) methodologies (NEN 7120) and as a result the validity of all preliminary or "*voorlopige*" energy labels that were issued in 2015 have been discontinued by NEA ("RVO") and its validity has been ended⁴¹.

These aforementioned provisional labels have been issued and widely applied in both many internal and external reporting applications. At this point in time, there is no alternative energy performance indicator provided by the government other than for those building(unit)s that have an officially registered EPC.

Against this background the EEM NL Hub working group members have expressed a desire to broaden, in the future, the strict interpretation as it is currently applied in this version of the DEEMF⁴².

Data availability considerations for Section 7.7(1B) (Top 15%)

As highlighted in Section 5.2 in the Netherlands not all residential properties built before 31 December 2020 have an EPC and therefore a PED is not available for all building units. To perform the top 15% analysis, an estimation approach is required and depending on the estimation approach used, different data quality and availability considerations can be relevant.

There are however some common denominators with respect to data considerations: all methods would need to distil the number of residential building units built before 31 December 2020. Note that this, in practice, is not a static number. As mutations due to market dynamics affect this number of building units built before 31 December 2020, for example:

Box 5: Potential housing market dynamics affecting the number of houses built before 31 December 2020.

- **Buildings that are demolished:** buildings are demolished by municipalities, social housing corporations and homeowners. This is often done to rebuild on the same location.
- **Buildings that are converted:** in recent years commercial buildings have been converted into residential building units with a *woonfunctie* due to a structural shortage of residential housing in the Netherlands.

³⁹ Construction year can have multiple definitions (start of building process, completion of building process, etc.). The construction year is not contained in EP-Online but can be found in mortgage loan (application) documentation or in the land registry ("Kadaster").

⁴⁰ For instance, year of construction and property type. It did not involve a physical assessment of the building unit.

⁴¹ As of this date these preliminary or "*voorlopige*" labels are also not available anymore in EP-Online.

⁴² The EEM NL Hub is awaiting a response on this issue from NEA (at the moment of writing).

- **Buildings that are split:** Existing buildings can be split (to make multiple sub-units) often into smaller apartments or studios. Splitting can increase the number of building units built before 31 December 2020 depending on the interpretation of construction year.
- **Buildings that are merged:** The opposite of splitting building units is merging buildings units, this can de facto decrease the number of building units.

To demonstrate compliance with the top 15% test, an analysis needs to be performed to determine what building units the calculated top 15% is composed of and if the individual building unit belongs to the properties in the top 15%. It is dependent on the methodology which data is used to determine the ‘operational Primary Energy Demand’ of an individual building unit. Within each methodology different parameters and assumptions could be used and therefore the data availability can differ per methodology.

To determine if a building unit belongs to the top 15% of the national stock of most energy efficient (based on Primary Energy Demand) residential building units constructed before 31 December 2020, an analysis of two key components is required: a numerator and a denominator. In Table an estimation is made on the number of building units in the Netherlands before 31 December 2020. In these numbers the considerations of Box 5 have not been taken into account.

Table 21: Building Statistics

Calculation of 15% of the Dutch residential building stock ⁴³	
Total number of residential building units in the Netherlands	8.369.857
Number of building units built after 31 December 2020	-/- 316.832
Remaining total	8.053.025
15% of remaining total	15% * 8.053.025 = 1.207.953

Data availability considerations for Section 7.7(2)

The data availability considerations for Section 7.7(1) are also valid for Section 7.7(2). There are however a couple of additional considerations:

- Currently it is not possible in EP-Online to assess if a registration in EP-Online is recorded on a building or on a building unit level for registrations with a “*vergunningsaanvraag*”. The vast majority of EPC registrations is made on building unit level, however this is not the case for all “*vergunningsaanvraag*” registrations.
- The fossil energy threshold value (“*Pand_eis_primaire_fossiele_energie*”) also known as the “BENG2 Eis” is listed in EP-Online. Any deviations, that can sometimes be applicable are incorporated in this value.
- Note that the criteria for activity 7.7(2) (built after 31 December 2020) do not state anything (explicitly) about the *status* of the house (if it is under construction, construction has to start or whether the construction has already been finalised).
- For properties where the BENG / NTA 8800 calculation methodology has been applied, in general, the ‘10% better than the threshold value’ criterion can be applied and verified as data availability appears not to be a major issue. There are however some data quality issues or concerns, especially with respect to EP-Online where for apartments (“niet-grondgebonden woningen”) the final on-site inspection has not yet taken place, (*Pand_status* is “*vergunningsaanvraag*”) the PED value is not always available or clearly distinguishable on building unit level. In this case we propose to use the only feasible alternative, check PED on building level, as warranted by answer 105⁴⁴.

⁴³ Source: data provided by NEA and Kadaster (as per 30 June 2023).

⁴⁴ For new buildings, either an EPC (valid for 10 years) or an EPC as-built are valid. It is understood that often for construction projects the loan is provided before the works start and funds are made available as the works progress. Since it is not possible to obtain the EPC as built until the very

- It is often the case that during the construction phase a property is not yet allocated a formal address and postal code. As a result, ‘mapping’ the property (under construction) that serves as collateral for a mortgage loan to a property in EP-Online can be challenging. Sometimes manual verification of the information as documented in the mortgage servicing data should carefully be assessed against the information in EP-Online.
- There are ‘transition cases’ where construction permits have been granted based on a previous energy performance measurement methodology (i.e. prior to the NTA 8800 methodology being in force). Note that when the construction is realised/completed after 31 December 2020, to provide the final EPC, the building will be measured upon completion according to the NTA 8800 methodology. In practice it is therefore necessary to check with the construction permit application date to which EPC regime (NTA 8800) the building should adhere.
- Note that the classification (“*grondgebonden vs niet-grondgebonden*”) for the different building (sub) types is not explicitly mentioned (with)in EP-Online. It can however be implicitly derived using the references in the *Wet Bouwbesluit*.
- For correct analysis and reporting one should frequently monitor if the *Pand_status* has changed, for instance from permit application (“*vergunningsaanvraag*”) to completion (“*oplevering*”) to determine if a building unit (still) adheres to the 10% criterium. There is a possibility that the PED as included in the construction permit application (with *Pand_status* ‘permit application (“*vergunningsaanvraag*”)’) differs from the PED when the building moves to *Pand_status* completion (“*oplevering*”). Be aware of cases, specifically for apartments and flats where the initial 10% has been performed on a building level, where information on building unit is not available, with a status “*vergunningsaanvraag*”. As energy performance of individual building units might differ greatly and it to be seen if the 10% criterium is met.
- There is no guarantee that if the ‘10% better than threshold value’ criterion was met during the construction phase (i.e. based on the information in the construction permit application), it will also be met once the building is completed and measured on-site and the final EPC is awarded. Given the recent implementation of NTA 8800, as of yet there is no clear statistical data to analyse in how many cases the PED during the construction (*Pand_status* is “*vergunningsaanvraag*”) phase differs from the PED at completion (*Pand_status* is “*oplevering*”) in both absolute and relative terms.

6.3 Perspective 3: Allocation to loan(part(s))

Allocation to loan(part(s) for Section 7.7(1A) & 7.7(1B) (Top 15%)

Static application

The outstanding mortgage loan amount (“*schuldrest*”) in respect of a property with a valid EPC of Class A as of assessment time t^* is attributed to the substantial contribution of the economic activity of Section 7.7.

Dynamic application

Section 7.7(1) covers ‘existing’ buildings that meet certain SCC. As the mortgage loan amortises the outstanding loan amount in line with SCC 7.7(1) decreases. Although increasingly rare at the moment of writing, it could be that there are

end of the project, it should be possible as a provisional measure to obtain and use an EPC as-designed. This would allow the building process to start. However, upon completion of the works, there needs to be an EPC as-built to certify that indeed the building complied with the criterion 10% better than NZEB. This depends also on the availability of the EPCs and the scope of the project as such. When the project concerns a whole building, there is no need to check the EPC for each individual apartment. When the project is about construction or acquisition/ownership of an apartment, the EPC for the respective apartment can be used.

buildings still in construction⁴⁵ that are in line with SCC 7.7(1) and therefore the outstanding loan amount still increases (drawings under the construction deposit (“*bouwdepot*”).

Allocation to loan(part(s) for Section 7.7(2)

A building can already be under construction and thus be registered in EP-Online with Pand_status “*vergunningaanvraag*”, indicating that the building is under construction or construction is about to start. It can also be the case that a registration in EP-Online has a Pand_status “*oplevering*” indicating that the physical inspection of the building unit has taken place and the EPC as recorded in EP-Online is now based on this on-site inspection (and no longer on the plans as submitted in the construction permit application). Lastly, the registration can be with a Pand_status “*bestaand*”. This is the category reserved for existing properties where a new EPC was issued based on the NTA 8800 methodology following an on-site inspection. It should be noted that since 1 January 2021, NTA 8800 is the EPC methodology applicable for all buildings, independent of the construction year.

Determine from the (mortgage) loan information and EP-Online information if the building is still in the building process. In this case take into account the building constructions facilities (“*bouwdepot*”). Also in this case it is important to monitor when an updated registration is available in EP-Online, to check if the 10% criterium is still being met.

Static application

The outstanding mortgage loan amount as of assessment time t^* is attributed to the substantial contribution of the economic activity of Section 7.1.

Dynamic application

Before or during the construction an indicative assessment of the PED (“*BENG-2*”) value should be available (as part of the documentation submitted for the construction permit application). This is registered with the status “*vergunningaanvraag*” in EP-Online. If this PED value is 10% lower than the threshold value (“*BENG-2 eis*”), based upon this information available at the time, provisionally the assumption can be made that the building is (to be) built within the applicable threshold value of SCC 7.7(2) (and its indirect reference tow SCC 7.1) till a new registration is available in EP-Online.

6.4 Conclusion

In general, it is possible to directly apply the SCC of Section 7.7(1) in the Netherlands with the caveat that there are data challenges with the availability of the construction permit application date.

⁴⁵ With construction permit application date < 31 December 2020.

7 Conclusion

In the previous three sections we have analysed the SCC of the Climate Delegated Act for real estate activities. In Figure 13 below we summarise this analysis process.

▪ Section 7.1 Construction of new buildings:

- No longer a category as such: lending towards (prospective) homeowners is a 7.7(2) activity.

▪ Section 7.2 Renovation of existing buildings:

- We understand the wording and we can find adequate references in existing regulation and energy performance methodology.
- For major renovations there are severe data availability issues as there is no obligation to register these cases in EP-Online (“*geen afmeldplicht*”). Therefore, we cannot provide any guidance on how to identify these cases or use major renovations to determine alignment based on these specific TSC.
- For the alternative, the reduction in (net) PED (excluding renewable energy sources), there are several challenges:
 - 1) the unavailability of (approved) methods to estimate ex-ante the PED reduction of a renovation; 2) it can be challenging to infer if the reduction in PED is or is not the result of the installation of renewable energy sources.
- Therefore, we recommend to only use the 7.2 alternative where there are two EPCs available (ex-ante and ex-post) based on the NTA 8800 methodology and the reduction in PED is not the result of renewable energy sources. This occurrence might be *theoretical* in practice.
- Only the fraction of the loan that is allocated towards the renovation of the building can be reported as SCC aligned⁴⁶.

▪ 7.7(1A) (built before 31 December 2020) Acquisition and ownership of buildings:

- We understand the wording and we can find adequate references in existing regulation and energy performance methodology.
- In general, the data is available, and we can provide guidance on which data fields from EP-Online can be used to check the alignment with these SCC.
- The application to mortgage loan level from a monetary or reporting perspective is clear.
- The construction permit application date can be challenging to obtain.

▪ 7.7(1B) (built before 31 December 2020) Acquisition and ownership of buildings:

- To determine whether or not an individual building belongs to the Top 15% of most energy efficient residential properties built before 31 December 2020 in a certain jurisdiction, firstly the Top 15% needs to be calculated.
- The construction permit application date (needed to determine when a building was built) can be challenging to obtain.
- Finally, for the respective building, the energy efficiency in terms of PED needs to be determined / calculated / estimated.

⁴⁶ Unless the ex-post renovation EPC is of Class A.

▪ **7.7(2) (built after 31 December 2020) Acquisition and ownership of buildings:**

- We understand the wording and we can find adequate references in existing regulation and energy performance methodology.
- The construction permit application date can be challenging to obtain.
- In general, the data is expected to be available, and we can provide guidance on which data fields from EP-Online can be used to check the alignment to this SCC.
- There are some data quality issues or concerns, especially with respect to EP-Online where for (*"niet-grondgebonden woningen"*) with status permit application (*"vergunningaanvraag"*) the PED value is not always available or clearly distinguishable on building unit level.
- The application to mortgage loan level from a monetary or reporting perspective is clear.

Figure 13: Conclusion.

7. Construction and Real Estate Activities Section(s)		Subsection	In analysis scope for this version	Perspective 1: Interpretation and application	Perspective 2: Data availability and quality	Perspective 3: Application to mortgage loan level	Guidance Incorporated in DEEMF Definition
7.1	Construction of new buildings			Revised, see 7.7(2)			Revised, see 7.7(2)
7.2	Renovation of existing buildings	Major Renovations	✓				✗*
7.2 alternative		Reduction of (net) Primary Energy Demand	✓				✓**
7.7(1A)	Acquisition and ownership of buildings	Buildings built before 31/12/ 2020	✓				✓
7.7(1B)		Buildings built before 31/12/ 2020 - Alternative: building is within Top 15%	✓				✓***
7.7(2)		Buildings built after 31/12/ 2020	✓				✓

Legend

	Available
	Available, some identified challenges
	Available, many identified challenges
	Not Available
	Not Covered (yet)

*As this point in time there is no central national database in the Netherlands, where major renovations (and if the underlying conditions are being met) are centrally registered ('geen afmeldplicht'). It is thus currently not possible to determine if the applicable requirements have been met, based on publicly available data.

** Several data availability and EPC methodology shortcomings

*** Different methods are referenced. This document describes the analysis and guidelines for documentation of such analysis.

8 DEEMF Definition List

The defined terms used in this DEEMF Definition List, to the extent applicable, conform to the standard published by the Energy Efficient Mortgages NL Hub.

However, certain deviations from the defined terms used in the DEEMF Definition List are denoted in the below as follows:

- 1) If the defined term is not applied by the user of the DEEMF Definition List, this is indicated by including the symbol 'N/A' in front of the relevant defined term.
- 2) If the user has added a defined term that is currently not included in the DEEMF Definition List, this is indicated by including the symbol '+' in front of the relevant defined term and providing the definition as applied in the column 'DEEMF Definition Applied'.
- 3) If the defined term deviates from the definition as recorded in the DEEMF Definitions List, this is indicated by including the symbol 'DIFF' in front of the relevant defined term and the alternative definition is presented in the column 'DEEMF Definition Applied' (where possible in track-changes from the original definition as included in the DEEMF Definition List).

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.1 Construction of New Buildings	F41.1, F41.2, F43	Constructions of new buildings for which: 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 Council ²⁸³ . The energy performance is certified using an as built Energy Performance Certificate (EPC).	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/m ² per year and based on the relevant national calculation methodology and as displayed on the Energy Performance Certificate (EPC). 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).

Section 7.1

	Term or key phrase	DEEMF Definition Applied
	<i>Primary Energy Demand (PED)</i>	Primary energy demand expressed in kWh/m ² /year on building unit level. EP-Online definition: Pand_primaire_fossiele_energie
	<i>Building</i>	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A ("bouwbesluit 2012") and a categorisation in building type ("grondgebonden en niet-grondgebonden"). See section building for the (sub)-categorisation of building types.

	<i>resulting from the construction</i>	Up and until the construction is completed (so both before and during actual construction) we refer to the PED in the construction permit application as recorded in EP-Online as Pand_primaire_fossiele_energie (status is (“vergunning-aanvraag”)).
	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 Council	<p>For houses (‘grondgebonden’ building units): The threshold value is defined as (Pand_eis_primaire_fossiele_energie)</p> <p>Which corresponds to 30 kWh/m² per year on building unit level in most cases⁴⁷.</p> <p>For apartments (“niet-grondgebonden” building units): The threshold value is defined as (Pand_eis_primaire_fossiele_energie).</p> <p>Which corresponds to 50 kWh/m²/year per year on building level, in most cases.</p> <p>There are however, deviations possible for the threshold value. Possible deviations to the threshold value are incorporated per registration in the data field Pand_eis_primaire_fossiele_energie.</p> <p>The 10 % lower threshold can be checked by calculating if $\text{Pand_primaire_fossiele_energie} \leq 0.9 \times \text{Pand_eis_primaire_fossiele_energie}$ per building unit.</p>
	<i>The energy performance is certified using an as built Energy Performance Certificate (EPC)</i>	Before and during the construction phase, the ‘as built’ phrasing is interpreted as: how it will be built, according to the information available up and until the moment of completion (“oplevering”) of the building unit.

⁴⁷ Deviations to the NZEB threshold value are applicable in some cases as explained in the previous section.

Section	NACE	Substantial contribution to climate change mitigation of Annex I	Footnote
7.2 Renovation of Existing Buildings	F41, F43	<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>	<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>

Section 7.2

	Term or key phrase	DEEMF definition
	<i>The building renovation complies with the applicable requirements for major renovations.</i>	No DEEMF definition available ⁴⁸ .

Section 7.2 Alternative

	Term or key phrase	DEEMF definition
	<i>Alternatively</i>	Meaning instead of the other option, literally the <i>alternative</i> (in this context referring to the alternative Substantial Contribution Criteria for major renovations).
	<i>It leads to</i>	The economic activity, that is financed, in this case ‘renovation’ ultimately, will result in.
	<i>a reduction of primary energy demand (PED) of at least 30 %</i>	The BENG 2 indicator, expressed as kWh/m ² /year on building unit level is reduced by at least 30% as a result of the renovation.
	<i>The initial primary energy demand</i>	The prime energy demand before the economic activity of renovation is carried out (pre-renovation).
	<i>Renewable energy sources</i>	Renewable energy sources are items that are eligible in section 7.6 ‘Installation, maintenance and repair of renewable energy technologies’ of the Climate Delegated Act.

⁴⁸ Although the linguistic decomposition and interpretation of key words & phrases of Major Renovation are given, we currently do not have a DEEMF definition as we cannot give guidance on application 2 (with respect to data and identification).

		<p>These items include (as taken from Section 7.6 of the CDA):</p> <ul style="list-style-type: none"> • photovoltaic systems • solar hot water panels • heat pumps contributing to the targets for renewable energy in heat and cool⁴⁹ • solar transpired collectors • thermal or electric energy storage units • high efficiency micro CHP (combined heat and power) plant • heat exchanger/recovery systems
	<p><i>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).</i></p>	<p>The energy efficiency improvement of 30% expressed as a reduction in net PED must be the result of measures that are not regarded as improvements to the building unit, resulting from renewable energy sources.</p> <p>Broadly two cases can be distinguished:</p> <ul style="list-style-type: none"> • Renovation where energy efficiency improvements are made without any ‘renewables energy sources’: the BENG 2 score (post-renovation) must be lower than 0.7 x BENG 2 score (pre-renovation). • Renovation where energy efficiency improvements are made that include ‘renewables energy sources’: in this case it is not possible to ascertain that the PED (BENG 2 score) reduction is based on ‘<i>reductions in net primary energy demand through renewable energy sources are not taken into account</i>’. <p>The post-renovation EPC report lists the ‘overall’ share of renewables (BENG 3) and the total BENG 2 score of the property. No (net) difference in PED compared to pre-renovation energy performance calculation is included in the post-renovation EPC.</p> <p>Moreover, it is not possible, based on the actual EPC document or the information in EP-Online to attribute the changes to the BENG 2 or BENG 3 scores to individual measures.</p>
	<p><i>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</i></p>	<p>An independent energy audit (both pre- and post-renovation), carried out by an accredited EPC advisor is, at this stage, the only NEA backed methodology (based on NTA 8800 methodology) to calculate the (net) PED of a property.</p>
	<p><i>And validated through an Energy Performance Certificate</i></p>	<p>Based on the wording ‘validated’ and the need for a ‘Certificate’, the conclusion is that post-renovation, an energy performance must be carried out according to the NTA 8800 methodology to determine the PED of the property after the renovation.</p>

⁴⁹ in accordance with Directive (EU) 2018/2001.

	And can be achieved through a succession of measures within a maximum of three years	<p>The economic activity that is being financed should be achieved within three years of commencing the economic activity.</p> <p>Not all the work has to be carried out all at once, it can be achieved via a succession of (multiple) measures, within the given time span of three years.</p>
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Section 7.7(1A)

Substantial contribution to climate change mitigation of Annex I
For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A.

	Term or key phrase	DEEMF definition
	<i>building</i>	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A (" <i>bouwbesluit 2012</i> ") and a categorisation in building type (" <i>grondgebonden en niet-grondgebonden</i> ").
	<i>Built before 31 December 2020</i>	The application date of the construction permit is before or on 31 December 2020.
	<i>Energy Performance Certificate</i>	<p>Energy Performance Certificate (EPC): a document or digital record describing the energy performance of the building(unit).</p> <p>A certificate should be present with a valid validity date, irrespective of the methodology.</p>
	<i>Energy Performance Certificate (EPC) class A</i>	<p>Irrespective of the EPC methodology all valid Energy Performance Certificates with any of the following values (A, A+, A++, A+++, A++++).</p> <p>Note that all EPCs Class A with a valid certificate or registration in EP-Online are deemed eligible, this including those based on older (legacy) EPC methodologies.</p>

Section 7.7(1B)

Substantial contribution to climate change mitigation of Annex I
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. ⁵⁰

⁵⁰ In the working group it was extensively discussed how the word "alternative" can be interpreted: Can it be applied as per "relevant asset", meaning that per relative asset one should assess if there is an EPC of class A or if it is in the Top-15%, or put differently, per asset a different method (either EPC = class A or Top-15%) can be used and applied. Or should the word "alternative" be interpreted and applied per portfolio, meaning that a

	Term or key phrase	DEEMF definition
	As an alternative	As an alternative to using the EPCs of Class A. Per building unit (reference asset) an alternative assessment of the Substantial Contribution Criteria can be applied.
	building	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A (" <i>bouwbesluit 2012</i> ") and a categorisation in building type (" <i>grondgebonden en niet-grondgebonden</i> ").
	within the top 15%	Within the top 15% of most energy efficient building stock of residential building units in the Netherlands built before 31 December 2020.
	of the national or regional building stock	Of the Dutch residential building stock
	expressed as operational Primary Energy Demand (PED)	Primary energy demand expressed in kWh/m ² /year on building unit level. EP-Online definition: Pand_primaire_fossiele_energie
	adequate evidence	A public study that contains a description of the methodology applied and the data used to determine the distribution of operation Primary Energy Demand over the national building stock and the value determined for a specific building unit.
	the performance of the relevant asset	The operational Primary Energy Demand of the relevant building unit as determined in the analysis applied vis-à-vis the reference population.
	to the performance of the national or regional stock	The operational Primary Energy Demand of the national building stock as determined in the analysis applied.
	built before 31 December 2020	The application date of the construction permit is before or on 31 December 2020.
	and at least distinguishes between residential and non-residential buildings.	The building unit is classified as a type of property that is listed as " <i>met woonfunctie</i> " in EP-Online.

choice is made for the total (mortgage) loan portfolio of an institution: all building(unit)s in a portfolio are assessed (for EU Taxonomy alignment based on Section 7.7(1A/B)) either on the criterium that they have an EPC of class A OR all building(unit)s in a portfolio are assessed based on the Top-15% criterium. Additional guidance on the interpretation of the word 'alternative' has been sought from the EC by the EEM NL Hub, but at the moment of writing no response has been received.

Section 7.7(2)

Substantial contribution to climate change mitigation of Annex I

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.

	Term or key phrase	DEEMF definition
	<i>building</i>	Any building unit meeting the categorisation of buildings as used in EP-Online combined with the metrics of Table 5.1A (' <i>bouwbesluit 2012</i> ') and a categorisation in building type (" <i>grondgebonden en niet-grondgebonden</i> ").
	<i>Built after 31 December 2020</i>	The application date of the construction permit is before or on 31 December 2020.
	<i>Meets the criteria specified in Section 7.1</i>	See table above relating to Section 7.1.

9 Annexes

9.1 Energy Performance Methods and data in the Netherlands

This section originally appeared in the previous version of DEEMF (2022 Part I).

9.1.1 The EU Energy Performance of Buildings Directive

The European Parliament and the European Council adopted Directive 2010/31/EU on the Energy Performance of Buildings Directive (EPBD), requiring member states to establish a system of certification with respect to the energy performance of buildings. Throughout the last years a series of amending directives have been published stipulating that “member states are required to use energy more efficiently at all stages of the energy chain from its production to its final consumption”.

The EPBD requires all new buildings from 2021 (public buildings from 2019) to be in line with the Near Zero Energy Building directive (NZEB). The nearly zero or very low amount of energy required should be covered to a very significant extent by renewable sources, including sources that produce on-site or nearby. The European Commission notes: “as concrete numeric thresholds or ranges are not defined in the EPBD, these requirements leave room for interpretation and thus allow Member States to define their nearly zero-energy buildings (NZEB) in a flexible way, taking into account their country-specific climate conditions, primary energy factors, ambition levels, calculation methodologies and building traditions. This is the main reason why existing nearly zero-energy buildings (NZEB) definitions differ significantly from country to country”.

The Dutch Building Code & NZEB

As of 2021 all new buildings in the Netherlands must meet the ‘Almost Energy Neutral Buildings’ requirements (‘Bijna Energieneutrale Gebouwen’ (“BENG”)). The new requirement is set forth in an amendment to the Dutch building code (‘Bouwbesluit’) of 2012. BENG is the result of the Dutch Energy Agreement for Sustainable Growth (National Energy Treaty) and the application of EPBD.

Houses and apartments must have an energy label when they are built, sold, or rented. The owner must provide the energy performance certificate (“EPC”) to the purchaser or tenant. Since the start of 2021, the certificate can only be issued by a certified energy performance advisor following an on-site visit and inspection of the property.

9.1.2 Energy Performance Methodologies

NTA 8800

Since 1 January 2021, the energy performance of buildings in the Netherlands is determined based on a national calculation method called “NTA 8800”. NTA 8800 is applicable to both existing and new buildings and it is the BENG norm that sets a threshold for new constructions in the Netherlands in terms of primary energy demand (“PED”). The PED, with the introduction of BENG / NTA 8800 corresponds directly to the Energy Performance Classes.

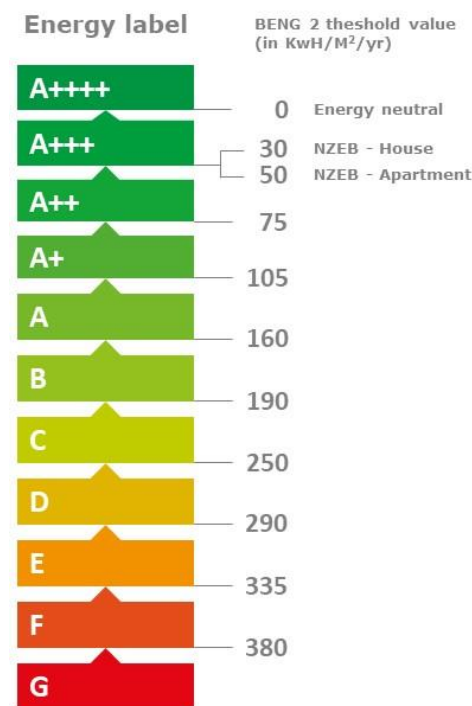
In the Netherlands, anyone can look up the energy label of a building (if available) online through a publicly available government website⁵¹ and online database called EP-Online⁵².

⁵¹ Source: [Zoek je energielabel](#)

⁵² Source: [EP-Online](#)

The EPC of a property includes at least a numeric energy performance indicator of the primary fossil energy use in kWh/m² per annum and a letter or combination of letters to express the energy performance of the building. Energy performance certificates remain valid for 10 years, including those issued before 1 January 2021 (and thus under the previous energy labelling methodology, see below). At the time of writing the average cost of obtaining an EPC is €200 – 300.

Figure 14: EPC Class and BENG2 value in the NTA 8800 methodologies.



By law, a seller is obliged to deliver to the buyer a “definite” (verified) energy label when a transfer of ownership of a property takes place.

Figure 14 depicts the different EPC classes within the NTA 8800 methodology. As one can see, the BENG 2 norm is directly related to Prime Energy Demand. For new constructions, depending on the building type the threshold for residential buildings is 30 or 50 kWh/m²/yr, subject to certain exceptions.

Note that an A++++ energy label is also known as a zero-energy-building (“ZEB”) or “*energieneutraal gebouw*”, sometimes the expression “*nul-op-de-meter*” is also used. A building with an EPC of class A++++ has a BENG 2 value of ≤ 0 and a BENG 3 value of 100% (see also Box 6 below).

Box 6: Overview BENG indications in NTA 8800.

BENG indicators: consists of three components that take into account building related energy consumption (for heating, cooling and (warm) water).

- **BENG 1:** Total energy demand: relates to the exterior of the building and is an indicator for the maximum total energy demand measured in kWh/m² per year. This indicator measures the total energy demand for heating or cooling the building. BENG 1 sets thresholds for the outer layer of the building with respect to energy demand.
- **BENG 2:** The prime (fossil) energy demand in kWh/m² of the building. This is a leading indicator and directly related to Prime Energy Demand.
- **BENG 3:** Share of energy demand obtained from renewable sources.

There is a direct (inverse) relation between BENG 2 and BENG 3: If the share of renewable energy is high, there is, consequently, a low prime (fossil) energy demand. Hence renewable energy measures decrease fossil prime energy demand (BENG 2).

Legacy method: NEN 7120

Before the current energy labelling methodology was implemented, energy labels were granted based on previous methodologies such as the ‘NEN 7120’ methodology. Given that energy labels are valid for a period of ten years, many EPCs exist (and are still valid) that were calculated based on this methodology. Legacy methods such as the NEN 7120 methodology do not list the BENG indicators or a primary energy demand metric (expressed in kWh/m² per annum).

“Vereenvoudigd Energielabel”

Between January 2015 and July 2020, in the Netherlands it was also possible to obtain a so-called simplified energy label (“Vereenvoudigd Energielabel” or “VEL”): A property owner could obtain a simplified energy label by submitting proof to an external party on approximately ten features of the property. The VEL was then issued and could be used for the sale (or rental) of a property. As these simplified energy labels had an official status and are also valid for a period of ten years, they are registered in EP-Online and are considered and counted as official EPCs. The simplified energy label does not list a primary energy demand metric (expressed in kWh/m² per annum).

“Voorlopig Energielabel”

To promote the awareness of the energy efficiency of properties with consumers, in 2015 the Dutch government introduced the concept of ‘preliminary energy labels’ (“*voorlopig energie label*”). For nearly all properties in the Netherlands an indicative energy label was calculated based on publicly available information of the property (e.g. property type, year of construction).

Every property owner could find the preliminary energy label of his/her property in EP-Online, and it provided an indication of the energy efficiency of the property. As of 1 January 2020, these preliminary energy labels are no longer published by the NEA in EP-Online.

9.1.3 BENG and NTA 8800 methodology in practice

Application of NTA 8800 and BENG

When applying for a construction permit for a new residential building, the NZEB requirements must be complied with at building level (pand_id). For a residential building, the NZEB requirements (“*BENG-eisen*”) therefore apply on residential building level and not necessarily on building unit level.

In addition, as part of the sales process, the energy performance must also be calculated and registered for each individual building unit (for example the individual apartments in a residential building). This is necessary so that the energy performance is known to potential buyers in advance of the sale. Given the specific location of each building unit in the building, under the NTA 8800 methodology, the energy performance of each building unit is likely to be different and it is thus possible that the different building units have different energy label classes.

When the energy performance is registered at building unit level for a construction permit application, an energy label is issued with the status ‘provisional’. Upon completion, each individual building unit must have a registered EPC. When construction is completed, an on-site inspection takes place for each building unit and a final EPC is recorded in EP-Online with the status ‘completion’ (“*oplevering*”).

In Table it is important to note that there is a distinction between houses and apartments (“*grondgebonden versus niet-grondgebonden*”). As the BENG requirements during the planning and construction phase apply on building level, there is no certainty what the actual energy performance will turn out to be on building unit level. A preliminary energy performance calculation on building unit level should however be available as described above.

Only registered and certified energy performance advisors are allowed to perform energy performance certificate calculations. The energy performance advisor must be registered and must follow the “Beoordelingsrichtlijn 9500 (BRL 9500)”.

Table 22: NTA status variations & building types.

Status / property type	House	Apartment (level)	Building
Upon planning permission request	<ul style="list-style-type: none"> • Energy performance calculation • Preliminary energy label 	<ul style="list-style-type: none"> • Preliminary energy label 	<ul style="list-style-type: none"> • Energy performance calculation • Preliminary energy label
Upon completion	<ul style="list-style-type: none"> • Energy performance calculation • Definitive energy label 	<ul style="list-style-type: none"> • Definitive energy label 	<ul style="list-style-type: none"> • Energy performance calculation
Existing property	<ul style="list-style-type: none"> • Definitive energy label 		<ul style="list-style-type: none"> • Definitive energy label

9.2 Dutch Building Code

This section was originally included in the previous version of DEEMF (2022 Part I).

9.2.1 Dutch Building Code

New constructions, reconstructions and renovations must comply with the regulation set out in the Dutch building code of 2012 (*Bouwbesluit 2012*), irrespective if a construction permit is needed. As of 2021 buildings must meet stricter requirements for energy use: the Nearly Zero Energy Building requirements (“NZEB requirements”). The new requirements have been included in the Dutch building code as of 1 January 2021. The Dutch building code contains rules for, among other things, the construction of a safe, energy-efficient, and environmentally friendly building. In addition, it sets specific NZEB thresholds (“BENG-eisen”) which can be found in article 5 of the Dutch building code 2012.

Renovations & Home Improvement

In addition to requirements in respect of the energy performance for new constructions minimum requirements for home improvements and renovations were introduced⁵³. The different norms are summarised in Table 23 (according to amendment on the *wet bouwbesluit*⁵⁴:

Table 23: Energy performance requirements for renovations in the Netherlands.

Measure	Dutch translation	Description of requirement under Dutch building code
Renovation	(‘verbouw’)	Renovation is the partial renovation, modification or enlargement of a building structure. Thermal insulation needs to exceed the threshold value of $R_c = 1,4 \text{ m}^2\text{K/W}$.
Renewal or replacement of insulation layers	(‘vernieuwen of vervangen van isolatielagen’)	Article 5.6 (2) of the Dutch building code is applicable to determine the thermal insulation requirement
Dormer	(‘Dakkapellen’)	For the installation of complete replacement of a dormer, Article 5.6 (3) of the Dutch building code determines that

⁵³ New guidance as per 8 February 2022

⁵⁴ Source: [Energieprestatie-eisen bij verbouw en renovatie \(rvo.nl\)](https://www.rvo.nl/nl/energieprestatie-eisen-bij-verbouw-en-renovatie)

		the same requirements for thermal insulation apply as for new build.
Major renovations	(‘ingrijpende renovatie’)	As per 1 February 2022 new requirements apply with respect to renewable energy sources under a major renovation (see also DEEMF Part II).
Improvement or renovation with adjustment to technical building systems / installations	(‘verbouw met aanpassing van het technisch bouwsysteem (installatie)’)	When a renovation takes place where new technical building systems or installations are installed, these are required to meet the same standards as applicable for new build.

9.2.2 Incorporation of EPBD and NZEB

The EPBD is incorporated in the Dutch Building Code and the NZEB system. An important aspect in the context of the EU Taxonomy is the concept of ‘major renovations’ (“Ingrijpende renovaties”). The EPBD leaves room to members states to implement one of two definitions of a major renovation, see text Box 7 below.

Box 7: EPBD definition of a ‘major renovation’.

<p>Recital 16 of Directive 2010/31/EU notes:</p> <p>‘Major renovations of existing buildings, regardless of their size, provide an opportunity to take cost-effective measures to enhance energy performance. For reasons of cost-effectiveness, it should be possible to limit the minimum energy performance requirements to the renovated parts that are most relevant for the energy performance of the building. Member States should be able to choose to define a ‘major renovation’ either in terms of a percentage of the surface of the building envelope or in terms of the value of the building. If a Member State decides to define a major renovation in terms of the value of the building, values such as the actuarial value, or the current value based on the cost of reconstruction, excluding the value of the land upon which the building is situated, could be used.’</p> <p>In addition, Article 2 section 10 of the directive, states:</p> <p>“major renovation” means the renovation of a building where:</p> <ol style="list-style-type: none"> the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the building, excluding the value of the land upon which the building is situated; or more than 25 % of the surface of the building envelope undergoes renovation;” <p>Member States may choose to apply option (a) or (b).</p>

The Dutch government has implemented the second option, as can be seen in Box 8 where the relevant article of the Dutch building code is quoted:

Box 8: Major renovation in Dutch building law.

<p>Dutch building code, Article 3.2:</p> <p>‘Met artikel 3.2, ingevoegd via Stcrt. 2013, 16919, is een uitwerking gegeven aan artikel 5.6, vierde lid, van het Bouwbesluit 2012. In artikel 3.2 is bepaald dat van ingrijpende renovatie als bedoeld in artikel 2 van de herziene richtlijn energie prestatie gebouwen sprake is wanneer meer dan 25% van de oppervlakte van de gebouwschil wordt vernieuwd, veranderd of vergroot én deze vernieuwing, verandering of vergroting de integrale gebouwschil betreft. Hiermee wordt bedoeld dat de uitwendige scheidingsconstructie volledig, dat wil zeggen met inbegrip van alle constructieonderdelen (binnenblad, spouwvulling, buitenblad) wordt gerenoveerd. Het voorschrift geldt alleen voor het deel van de gebouwschil dat wordt gerenoveerd en niet voor de gehele gebouwschil van het gebouw. Met deze keuze voor de oppervlakte van de gebouwschil als criterium voor de beoordeling van de vraag of sprake is van ingrijpende renovatie is uitvoering gegeven aan de keuzemogelijkheid zoals deze in artikel 2 onderdeel 10 van de herziene richtlijn is gegeven.’</p>

9.2.3 Incorporation of Renewable Energy Directive in the Building Code

The Renewable Energy Directive is the legal framework for the development of renewable energy across all sectors of the EU. It has been adopted in December 2020 and states among other things that renewable energy is to be implemented for both the construction of new buildings and when major renovations are performed, see Box 9.

Box 9: Requirement for the introduction of renewable energy.

Renewable Energy Directive, Article 15 section 4 states:

'Member States shall introduce appropriate measures in their building regulations and codes in order to increase the share of all kinds of energy from renewable sources in the building sector.

In establishing such measures or in their support schemes, Member States may take into account, where applicable, national measures relating to substantial increases in renewables self-consumption, in local energy storage and in energy efficiency, relating to cogeneration and relating to passive, low-energy or zero-energy buildings.

Member States shall, in their building regulations and codes or by other means with equivalent effect, require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation in so far as technically, functionally and economically feasible, and reflecting the results of the cost-optimal calculation carried out pursuant to Article 5(2) of Directive 2010/31/EU, and in so far as this does not negatively affect indoor air quality. Member States shall permit those minimum levels to be fulfilled, inter alia, through efficient district heating and cooling using a significant share of renewable energy and waste heat and cold.'

In the Netherlands, the rules for renewable energy for new constructions have been implemented in the BENG framework ("wijziging BENG, Stb.2019, 501"). Where a minimum share of renewable energy is expressed as the BENG 3 indicator. The BENG 3 indicator formalises this requirement for newly built properties, where at least 40% (or 50% in some cases) of the energy must be derived from a renewable source⁵⁵.

The rules for renewable energy for major renovations have been implemented in the Bouwbesluit 2012 en in het "Besluit bouwwerken leefomgeving" ("BBL"). The official government website⁵⁶ notes: "In het Bouwbesluit 2012 (artikel 5.6 lid 5 en lid 6) is een eis opgenomen voor een minimumwaarde hernieuwbare energie bij ingrijpende renovaties van gebouwen. De eis treedt per 1 februari 2022 in werking en vloeit voort uit de herziening van de richtlijn hernieuwbare energie (REDII) van 11 december 2018.". NEA has published a document⁵⁷ containing a formula to determine the share of renewable energy for major renovations.

⁵⁵ <https://wetten.overheid.nl/BWBR0030461/2021-07-01#Hoofdstuk5>

⁵⁶ <https://www.rijksoverheid.nl/documenten/richtlijnen/2021/12/02/leidraad-eis-hernieuwbare-energie-bij-ingrijpende-renovatie>

⁵⁷ <https://open.overheid.nl/repository/ronl-99d21956-6764-472b-8b0e-f8fa1a15ba9d/1/pdf/leidraad-eis-he-bij-ingrijpende-renovatie.pdf>

9.3 Research on Major Renovations in the Netherlands.

In 2020, SIRA Consultancy performed the study: ‘measuring the effect of a minimum share of renewable energy for major renovations’ (*“Effectmeting minimum eis hernieuwbare energie bij ingrijpende renovatie”*) that looks into the (potential) ‘effects’ of the newly proposed regulation of the incorporation of renewable energy for major renovations in the Netherlands. The study is focused on identifying:

1. The changes that the amended regulation would have on consumers and business in the Netherlands, in comparison to existing regulation.
2. Measure both the quantitative and qualitative effects of the proposed changes.

The report lists the following, where we have expressed in bold the important conclusions on the registrations of major renovations in the Netherlands:

- *‘The number of major renovations that fall under the definition of the Building Decree is not registered centrally. Therefore, questionnaires have been used to gauge the number of Major Renovations in the Netherlands, from respondents. The interviews show that the definition from the Building Decree is hardly used in practice. There is therefore no complete picture of the number of major renovations that fall under the definition of the Building Decree. In practice, for example, often there is a reference towards a major renovation when, for example, windows are replaced, cavity wall are installed, insulation measures are taken or installing double glazing. However, these are not situations that fall under the definition of major renovation as referred to in the Building Decree.’*
- *‘The definition in the Buildings Decree stipulates that the renovation must concern the ‘integral building shell’, whereby the roof or shell is ‘fully opened up and renewed’ for more than 25% of the surface of that shell. This means that at least 25% of the building can be viewed ‘from the inside out’. This is the case, for example, when both the roof and all windows of a building are replaced.’*
- *‘Buildings that undergo a major renovation according to the definition of the Buildings Decree will in practice often be temporarily uninhabitable. In general, it is expected that major renovations in accordance with the Building Decree will be limited.’*
- *‘It is indicated in the research that in the case of a major renovation, a trade-off is often made between renovation and demolition of the property and carrying out a new construction (“sloop-nieuwbouw”). The latter case, can be interesting as the lifespan of the building is then expected to be longer. The NZEB requirements apply to demolition and new construction, which also include a minimum requirement for renewable energy.’*

The research also indicates that between 50 and 500 family houses undergo a major renovation yearly that could be regarded as being in line with the Dutch building code.

9.4 EP-Online Legend

Table 24: EP-legend (made by EEM NL Hub).

Category	Field	English Translation	Datatype
Timestamp	Pand_opnamedatum	Date of recording property Information	Date
Methodology & Status	Pand_opnametype	Property Measurement type	Text
	Pand_status	Property Status	Text
	Pand_berekeningstype	Property Calculation Method	Varchar
	Pand_energieprestatieindex	Property Energy Performance Index	Int
	Pand_energieklasse	Property Energy Class	Varchar
	Pand_energielabel_is_privé	Property Energy Label is Private	Int
	Pand_is_op_basis_van_referentie_gebouw	Property is based on reference building	Int
	Pand_gebouwklasse	Property building class	Varchar
	Meting_geldig_tot	Registration valid untill	Date
	Pand_registratiedatum	Registration date	Date
Building (unit) identification	Pand_postcode	Postal Code	Varchar
	Pand_huisnummer	House Number	Int
	Pand_huisnummer_toev	House Number addition	Varchar
	Pand_detailaanduiding	Detailed designation	Varchar
	Pand_bagverblijfsobjectid	ID in BAG (municipal administration system)	Int
	Pand_bagligplaatsid	ID in BAG (municipal administration system)	Int
	Pand_bagstandplaatsid	ID in BAG (municipal administration system)	Int
	Pand_bagpandid	ID in BAG (municipal administration system)	Int
	Pand_gebouwtype	Building type	Varchar
	Pand_gebouwsubtype	Building subtype	text
	Pand_projectnaam	Project Name	Varchar
	Pand_projectobject	Project Object	Varchar
	Pand_SBIcode	SBI Code	Varchar
	Pand_gebruiksoppervlakte	Square footage area in m ²	Int
Energy Performance Metrics and Thermal Properties	Pand_energiebehoefte	Energy demand (BENG1)	Int
	Pand_eis_energiebehoefte	Energy demand (BENG1) threshold	Int
	Pand_primaire_fossiele_energie	Prime Fossil Energy demand (BENG2)	Int
	Pand_eis_primaire_fossiele_energie	Prime Fossil Energy demand (BENG2) threshold	Int
	Pand_primaire_fossiele_energie_EMG_forfaitair	Prime Fossil Energy demand forfaitair	Int
	Pand_aandeel_hernieuwbare_energie	Energy demand (BENG3)	Int
	Pand_eis_aandeel_hernieuwbare_energie	Energy demand (BENG3) threshold	Int
	Pand_aandeel_hernieuwbare_energie_EMG_forfaitair	Energy demand (BENG3) forfaitair	Int
	Pand_temperatuuroverschrijding	ToJuli - Heating Exceedance	Int
	Pand_eis_temperatuuroverschrijding	ToJuli - Heating Exceedance Threshold	Int
	Pand_warmtebehoefte	Heat Demand	Int
	Pand_forfaitaire	Property forfaitaire	Int

9.5 Relevant EP-Online data for SCC

Table 25: summarises relevant EP-Online data fields for the SCC of sections 7.1, 7.2 and 7.7. We have highlighted the relevant fields in orange and where applicable the relevant (data or domain) selection filter.

Category	Field	EUT SCC 7.1	EUT SCC 7.2	EUT SCC 7.7
Methodology & Status	Pand_opnametype			
	Pand_status	Bestaand & Vergunningsaanvraag	Bestaand	Bestaand
	Pand_berekeningstype	NTA-8800 (detailopname woningbouw)		
	Pand_energieprestatieindex			
	Pand_energieklasse	A++++ or A+++		
	Pand_energielabel_is_privé			
	Pand_is_op_basis_van_referentie_gebouw			
	Pand_gebouwklasse	W	W	W
	Meting_geldig_tot	✓	✓	✓
	Pand_registratiedatum			
Building (unit) identification	Pand_postcode	✓	✓	✓
	Pand_huisnummer	✓	✓	✓
	Pand_huisnummer_toev	✓	✓	✓
	Pand_detailaanduiding	✓		
	Pand_bagverblijfsobjectid	✓		
	Pand_bagligplaatsid	✓		
	Pand_bagstandplaatsid	✓		
	Pand_bagpandid	✓		
	Pand_gebouwtype	✓		
	Pand_gebouwsubtype	✓		
	Pand_projectnaam	✓		
	Pand_projectobject	✓		
	Pand_SBIcode	✓		
	Pand_gebruiksoppervlakte			
Energy Performance Metrics and Thermal Properties	Pand_energiebehoefte			
	Pand_eis_energiebehoefte			
	Pand_primaire_fossiele_energie	✓	✓	
	Pand_eis_primaire_fossiele_energie	✓		
	Pand_primaire_fossiele_energie_EMG_forfaitair	✓		
	Pand_aandeel_hernieuwbare_energie		✓	
	Pand_eis_aandeel_hernieuwbare_energie			
	Pand_aandeel_hernieuwbare_energie_EMG_forfaitair			
	Pand_temperatuuroverschrijding			
	Pand_eis_temperatuuroverschrijding			
	Pand_warmtebehoefte			
	Pand_forfaitaire			

9.6 Relevant mortgage (servicing) data for SCC

Table 26: relevant 'traditional' mortgage data fields for the SCC of Sections 7.1, 7.2 and 7.7.

Typical field name (or description)	Field name in Dutch	EUT	EUT	EUT
		SCC 7.1	SCC 7.2	SCC 7.7
Collateral address or alternative identifiers (for new construction(s))	("Identificatievelden onderpand")	✓	✓	✓
Timestamp or batch identification	("periode aanduiding")	✓	✓	✓
Building date	("start bouwjaar")	✓	✓	✓
Date of (application for) construction permit	("datum aanvraag / afgifte vergunningsaanvraag")	✓	✓	✓
Start date of loan	("ingansdatum")	✓	✓	✓
Notional Balance	("hoofdsom")	✓	✓	✓
Current Balance	("netto schuldrest")	✓	✓	✓
Drawn (building) depot amounts	("getrokken bouwdepot(s)")	✓	✓	✓
Description of energy efficient improvement measure	("(detail) beschrijving werkzaamheden")		✓	✓
Measure in line with EBV or EBB	("maatregel in lijn met EBB / EBV")		✓	✓

9.7 EP-Online data availability

Table 28: EP-Online data availability for differing energy performance methodologies.

	EP	EPA	ISO75.3, versie 3.0, oktober 2011	ISO82.3, versie 3.0, oktober 2011	Nader Voorschrift, versie 1.0, 1 februari 2014 met erratalijst dd 03-11-201	Nader Voorschrift, versie 1.0, 1 februari 2014 met erratalijst, addendum 1 juli 2018	NEN 7120+C2:2012/C3:2013	NEN 7120+C2:2012/C3:2013/C4,C5: 2015	NEN 7120+C2:2012/C3:2013/C4,C5: 2015, addendum 1 juli 2018	NTA-8800 (basisopname woningbouw)	NTA-8800 (detailopname woningbouw)	Rekenmethodiek Definitief Energielabel, versie 1.2, 16 september 2014
Pand_berekeningstype												
Pand_opnamedatum	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_opnametype	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_status	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_energieindex	Available	Available	Available	Available	Available	Available	Available	Available	Available	Never Available	Never Available	Never Available
Pand_energieklasse	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_energielabel_is_prime	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_is_op_basis_van_referentie_gebouw	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_gebouwkasse	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Meting_geldig_tot	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_registratiedatum	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_postcode	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_huisnummer	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_huisnummer_toev	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_detailaanduiding	Available	Available	Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Available	Available	Never Available
Pand_bagverblifsobjectid	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
Pand_bagligplaatsid	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_bagstandplaatsid	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_bagpandid	Available	Available	Available	Available	Available	Available	Never Available	Available	Available	Available	Available	Available
Pand_gebouwtype	Available	Available	Never Available	Available	Available	Available	Never Available	Never Available	Never Available	Available	Available	Available
Pand_gebouws subtype	Available	Available	Never Available	Available	Available	Available	Never Available	Never Available	Never Available	Available	Available	Available
Pand_projectnaam	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_projectobject	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_SBcode	Available	Available	Available	Never Available	Never Available	Never Available	Available	Available	Available	Never Available	Never Available	Never Available
Pand_gebruiksoppervlakte	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_energiebehoefte	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_eis_energiebehoefte	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_primaire_fossiele_energie	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_eis_primaire_fossiele_energie	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_primaire_fossiele_energie_EMG_forfaitair	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_aandeel_hernieuwbare_energie	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_eis_aandeel_hernieuwbare_energie	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_aandeel_hernieuwbare_energie_EMG_forfaitair	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_temperatuuroverschrijding	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_eis_temperatuuroverschrijding	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_warmtebehoefte	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Never Available	Available	Available	Never Available
Pand_energieindex_met_EMG_forfaitair	Available	Available	Available	Available	Available	Available	Available	Available	Available	Never Available	Never Available	Never Available

Table 279: data availability in EP-Online for NTA 8800 EPCs across different “pand statussen”. A filter has been applied for: Pand_berekeningstype = “NTA-8800 (detailopname woningbouw)”.

Pand_status	Bestaand	Oplevering	Vergunningsaanvraag
Pand_opnamedatum	Available	Available	Available
Pand_opnametype	Available	Available	Available
Pand_energieindex	Never Available	Never Available	Never Available
Pand_energieklasse	Available	Available	Available
Pand_energielabel_is_privé	Available	Available	Available
Pand_is_op_basis_van_referentie_gebouw	Available	Available	Available
Pand_gebouwklasse	Available	Available	Available
Meting_geldig_tot	Available	Available	Available
Pand_registratiedatum	Available	Available	Available
Pand_postcode	Available	Available	Available
Pand_huisnummer	Available	Available	Available
Pand_huisnummer_toev	Available	Available	Available
Pand_detailaanduiding	Available	Available	Never Available
Pand_bagverblijfsobjectid	Available	Available	Available
Pand_bagligplaatsid	Never Available	Never Available	Available
Pand_bagstandplaatsid	Never Available	Never Available	Available
Pand_bagpandid	Available	Available	Available
Pand_gebouwtype	Available	Available	Available
Pand_gebouwsubtype	Available	Available	Available
Pand_projectnaam	Never Available	Never Available	Available
Pand_projectobject	Never Available	Never Available	Available
Pand_SBIcode	Never Available	Never Available	Never Available
Pand_gebruiksoppervlakte	Available	Available	Available
Pand_energiebehoefte	Available	Available	Available
Pand_eis_energiebehoefte	Never Available	Available	Available
Pand_primaire_fossiele_energie	Available	Available	Available
Pand_eis_primaire_fossiele_energie	Never Available	Available	Available
Pand_primaire_fossiele_energie_EMG_forfaitair	Available	Available	Available
Pand_aandeel_hernieuwbare_energie	Available	Available	Available
Pand_eis_aandeel_hernieuwbare_energie	Never Available	Available	Available
Pand_aandeel_hernieuwbare_energie_EMG_forfaitair	Available	Available	Available
Pand_temperatuuroverschrijding	Available	Available	Available
Pand_eis_temperatuuroverschrijding	Never Available	Available	Available
Pand_warmtebehoefte	Available	Available	Available
Pand_energieindex_met_EMG_forfaitair	Never Available	Never Available	Never Available

Table 30: data availability in EP-Online for NTA 8800 EPCs across different “pand statussen” when a distinction is made between houses and apartments (“grondgebonden vs. niet-grondgebonden”).

Pand_status	Niet Grondgebonden		Grondgebonden	
	Oplevering	Vergunningsaanvraag	Oplevering	Vergunningsaanvraag
Pand_opnamedatum	Available	Available	Available	Available
Pand_opnametype	Available	Available	Available	Available
Pand_energieindex	Never Available	Never Available	Never Available	Never Available
Pand_energieklasse	Available	Available	Available	Available
Pand_energielabel_is_privé	Available	Available	Available	Available
Pand_is_op_basis_van_referentie_gebouw	Available	Available	Available	Available
Pand_gebouwklasse	Available	Available	Available	Available
Meting_geldig_tot	Available	Available	Available	Available
Pand_registratiedatum	Available	Available	Available	Available
Pand_postcode	Available	Available	Available	Available
Pand_huisnummer	Available	Available	Available	Available
Pand_huisnummer_toev	Available	Available	Available	Available
Pand_detailaanduiding	Never Available	Never Available	Available	Never Available
Pand_bagverblijfsobjectid	Available	Never Available	Available	Available
Pand_bagligplaatsid	Never Available	Available	Never Available	Never Available
Pand_bagstandplaatsid	Never Available	Never Available	Never Available	Never Available
Pand_bagpandid	Available	Never Available	Available	Available
Pand_gebouwtype	Available	Available	Available	Available
Pand_gebouwsubtype	Available	Available	Never Available	Never Available
Pand_projectnaam	Never Available	Available	Never Available	Available
Pand_projectobject	Never Available	Available	Never Available	Available
Pand_SBIcode	Never Available	Never Available	Never Available	Never Available
Pand_gebruiksoppervlakte	Available	Available	Available	Available
Pand_energiebehoefte	Available	Available	Available	Available
Pand_eis_energiebehoefte	Available	Available	Available	Available
Pand_primaire_fossiele_energie	Available	Available	Available	Available
Pand_eis_primaire_fossiele_energie	Available	Available	Available	Available
Pand_primaire_fossiele_energie_EMG_forfaitair	Available	Available	Available	Available
Pand_aandeel_hernieuwbare_energie	Available	Available	Available	Available
Pand_eis_aandeel_hernieuwbare_energie	Available	Available	Available	Available
Pand_aandeel_hernieuwbare_energie_EMG_forfaitair	Available	Available	Available	Available
Pand_temperatuuroverschrijding	Available	Available	Available	Available
Pand_eis_temperatuuroverschrijding	Available	Available	Available	Available
Pand_warmtebehoefte	Available	Available	Available	Available
Pand_energieindex_met_EMG_forfaitair	Never Available	Never Available	Never Available	Never Available

9.8 Building Block Elements –Suggestions for transparent top 15% study description

Table 31: Top 15% Documentation Elements - Building Blocks.

Block	Section	Description
0	Abstract	
A	Definitions & assumptions	<p>How are key words or phrases of the TR interpreted and applied:</p> <ul style="list-style-type: none"> • <i>Buildings¹</i> • <i>Built</i> • <i>Built before 31 December 2020</i> • <i>As an alternative</i> • <i>The reference building</i> • <i>Operational prime energy demand</i> • <i>Relevant asset</i> • <i>performance of national stock built before 31 December 2020 (residential)</i> • <i>At least distinguishes</i> • <i>How will residential be distinguished from non-residential</i> • <i>Adequate evidence</i> <p>Description of how Q&A and related guidance by regulators and / or supervisors are incorporated in the methodology and outcome?</p>
B	Source(s)	<p>A description, if possible, of:</p> <ol style="list-style-type: none"> 1. Qualitative data resource 2. Of building stock statistics <ul style="list-style-type: none"> ○ Quantitative data source ○ Applied filters ○ Censored observations 3. Other 4. Of reference portfolio (if taken into account) 5. The use of Proxies <p>Which data sources are used to calculate the PED or to indicate that the applied methodology results in being below the PED threshold? Can details be provided w.r.t. total amount of building stock (incl. methodology), registered / not registered certificates should be specified in methodology report.</p>
C	Methodology	<p>General description of:</p> <ul style="list-style-type: none"> • Rationale • Methodology description • Calibration • Model assumptions • Describing the purpose of the methodology to align with the EU Taxonomy in the methodology report
D	Explanatory variable	<p>Explanatory variable</p> <ul style="list-style-type: none"> • Indicator • rationale <p>Explanation should be clear on why the specific explanatory variable is used as an indicator for the top 15%.</p>
E	Outcome	<p>Description of:</p> <ul style="list-style-type: none"> • Explanatory variable <ul style="list-style-type: none"> ○ e.g. building year, estimated EPC, estimated operational PED. • Numerator (breakdown) <ul style="list-style-type: none"> ○ How many (reference) buildings are in the numerator

		<ul style="list-style-type: none"> ○ By what explanatory variable are these ranked? • Denominator (breakdown) ○ How many (reference) buildings are in the denominator ○ By what explanatory variable are these ranked?
F	Governance, Observations & Maintenance	<p>Description of governance and maintenance topics such as:</p> <ul style="list-style-type: none"> • Is the methodology updated? If so by what frequency? • What elements are updated over time? • What could impact the outcome of the estimation, over time? • Methodology should be public, able to publish in a report format.

9.9 Vendor #1 top 15% methodology description

Box 10: CFP methodology.

The methodology applied by CFP to determine the most energy efficient building units in the Netherlands is based on the fact that over time, building regulations became stricter and required new residential properties to be more energy efficient when they were constructed. Moreover, the Dutch building code communicates a minimum EPC score that can be linked to the relevant primary energy demand required under the EU Taxonomy.

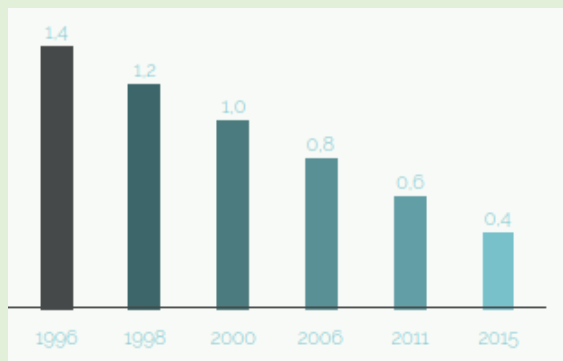


Figure 10.1: EPC score (NEN 7120) according to the building code applicable at the time

Considering the fact that the building stock built before 31 December 2020 consisted of 8.053.025 building units and the number of building units that equates to 15% is 1.207.953, one can consider the number of new building units constructed in the past years to determine from what year onwards an individual building unit belongs to the top 15% (of most recently built building units).

Period	New build houses	Period	New build houses
2000	74,774	2014	45,170
2001	77,181	2015	48,381
2002	71,143	2016	54,849
2003	64,102	2017	62,982
2004	69,832	2018	66,585
2005	71,541	2019	71,548
2006	77,103	2020	69,985
2007	85,201	2021	68,633
2008	84,174	2022	77,000
2009	87,835	2023	80,000
2010	60,556	2024	80,000
2011	62,199	2025	80,000
2012	48,668	2026	80,000
2013	49,311		

Table 10.1: residential properties built before YE 2020

Period	New build houses	Percentage of residential buildings stock built before YE2020
2002	1,251,165	15.86%
2003	1,180,022	14.96%
2004	1,115,920	14.14%
2005	1,046,088	13.26%
2006	974,547	12.36%

Table 3: Top 15% of residential buildings stock built before the 31st December 2020

Table 10.2: Top 15% of residential property stock built before YE 2020

Applying this methodology, any property built in or after 2003 would belong to the top 15% of most recently built building units up to 31 December 2020 and is assumed to be in the top 15% of most energy efficient properties in the Netherlands built before 2021. Given the fact that new building regulations entered into force in the years 2000 and 2006, it is difficult to determine the relative energy efficiency of building units built in this period. Therefore, the cut-of year is selected to be 2006 as this is the year a new building code was introduced that required buildings to adhere to an EPC of 0.8 or lower. This translates to an EPC label of A+ or better (under the current NTA 8800 methodology). The percentage of the residential building stock built between 2006 and 2020 represents 12.36% of the total residential building stock built before 2021 which slightly less than 15%.

9.10 Vendor #2 Top 15% methodology description

Box 11: Calcasa methodology.

In the methodology applied by Calcasa, for those building units (built before 31 December 2020) that do not have a formal BENG 2 value (i.e. those building units without an EPC or with an EPC based on a methodology that predates NTA 8800), a proxy BENG 2 value is determined (for all residential building units in the Netherlands) as follows:

- For building units with an EPC based on the NEN 7120 methodology following an on-site inspection: the EPC and Energy Index (EI) value is used to determine a model-based BENG 2 value (based on the data available through EP-Online). In addition to this information further information regarding the property could be utilized to improve the model-based BENG 2 value. An example of this is a property with a known renovation after the NEN 7120 label was granted.
- For building units with a VEL EPC (so the NEN 7120 methodology but no on-site inspection): further information regarding the property (e.g. building type, building year, surface (m²)) is taken into consideration to determine a model-based BENG 2 value (based on the data available through EP-Online).
- For building units without a valid EPC the available information in respect of the property (including expired EPCs, but also year of construction, property type and surface (m²)) is considered to determine a model-based BENG 2 value.

For those properties with an EPC based on the NTA 8800 methodology, the actual BENG 2 value is used.

Once the BENG 2 value has been determined, all residential building units are ranked from high to low (model-based) BENG 2 value and the top 15% can be determined, both in terms of actual BENG 2 value as well as which properties have this exact BENG 2 value or a lower score (and thus belong to the top 15% of most energy efficient properties in the Netherlands).

Calcasa performs this calculation regularly and therefore the relevant BENG 2 value changes over time and the properties that fall within the top 15% as well.

9.11 Vendor #3 Top 15% methodology description

Box 12: Stichting W/E adviseurs methodology.

The methodology proposed by W/E adviseurs is based on a conversion of the EPC from the previous energy labelling methodology (NEN 7120) into a BENG 2 value under the NTA 8800 methodology using existing calibration studies (performed at the time of introduction of the NTA 8800 methodology). Some further adjustments can be considered to address the fact that as a general rule, building units that have been more recently constructed are overweighted in the sample of building units with a valid EPC.

Using this methodology, a BENG 2 value for more than [x]mln building units can be estimated that is considered a fair representation of the overall energy efficiency of the residential building stock in the Netherlands (constructed after 31 December 2020). Based on this sample, the cut off BENG 2 value for the top 15% can be determined (for example at 76 kWh/m²/yr).

The second step in the W/E adviseurs methodology is then comparing the BENG 2 value of an individual building unit to the threshold value determine if the building unit is considered to be in the top 15%. Depending on the individual building unit, one of the following options can be considered to determine the BENG 2 value:

- For building units with an EPC based on the NTA 8800 methodology, the actual BENG 2 value can be used.
- For building units with an EPC based on the NEN 7120 methodology: the data from the calibration study can be used to convert the energy label into a BENG 2 value (using the data available through EP-Online).
- For building units without a valid EPC that have been recently constructed, the minimum requirements of the building regulations can be used to infer a BENG 2 value.
- For older building units without a valid EPC, other available information in respect of the property (including expired EPCs, but also year of construction, property type and surface (m²)) can be used to determine a BENG 2 value.

Using these two steps, for each individual building unit it can be determined if it is within the top 15% of most energy efficient residential building units in the Netherlands constructed after 31 December 2020.

9.12 Abbreviations and Legislative References

Table 32: Relevant abbreviations

Abbreviation	Meaning
BENG	Dutch framework wherein NZEB is established: Bijna Energie Neutraal Gebouw
BENG 1	Bijna Energie Neutraal Gebouw (BENG) indicator of total energy demand
BENG 2	Bijna Energie Neutraal Gebouw (BENG) indicator of the primary (fossil) energy demand
BENG 3	Bijna Energie Neutraal Gebouw (BENG) indicator of share of energy demand obtained from renewable sources
BTAR	Banking book Taxonomy Aligned Ratio
CDA	Climate Delegated Act – As part of the EU Taxonomy Regulation
CMPR	Capital Markets Recovery Package
CO ₂ emissions	Carbon Dioxide emissions
CSV	Comma-separated values
DDA	Disclosure Delegated Act – As part of the EU Taxonomy Regulation
DEEMF	Dutch Energy Efficient Mortgage Framework
DNSh	Do No Significant Harm
EBA	European Banking Authority
EBB	Energiebespaarbudget
EBV	Energiebesparende voorzieningen
EC	European Commission
EEA	European Economic Area
EIOPA	European Insurance and Occupational Pensions Authority
EEM NL Hub	The Energy Efficient Mortgage Netherlands Hub
EPBD III	Directive amending the Energy Performance of Buildings Directive (2018/844/EU)
EPBD IV	Proposed revision of the EPBD III (COM(2021) 802 final)
EP-Online	A public database with EPCs and other sustainability data per property, maintained by the NEA
ESA	European Supervisory Authorities
ESMA	European Securities and Markets Authority
EU	European Union
EUT	EU Taxonomy Regulation
GAR	Green Asset Ratio
GHG emissions	Green House Gas emissions
GWh	Gigawatt Hours
ID	Identifier
JC	Joint Committee of the European Supervisory Authorities
KPI	Key Performance Indicator
LtV	Loan to Value – A common risk metric for mortgage Loans
NACE	Nomenclature statistique des Activités économiques dans la Communauté Européenne – A widely used statistical classification of economic activities in the European Community
NEA	Netherlands Enterprise Agency – Also known in the Netherlands as “Rijksdienst voor Ondernemend Nederland” (RVO)
NECP	National energy and climate plans. EU countries’ 10-year national energy and climate plans for 2021-2030.

NEN 7120	Energy Performance of Buildings measurement standard in the Netherlands. Effective until 31 December 2020 (and replaced by NTA 8800) as at that date.
NFRD	Non-financial Reporting Directive
NTA 8800	<i>“Nederlands Technische Afspraak”</i> (NTA 8800) is the most recent Dutch legal method to determine the energy performance of a building (unit).
NZEB	Nearly Zero Energy Building - A term mentioned in the EPBD III. Means BENG in Dutch regulation (see above).
OECD	Organisation for Economic Co-operation and Development
PAI indicators	Principal Adverse Impact indicators
PED	Primary Energy Demand
RTS	Regulatory Technical Standards
SCC	Substantial Contribution Criteria
SFAP	Sustainable Finance Action Plan
SFDR	Sustainable Finance Disclosure Regulation
SMEs	Small and Medium-sized Enterprises
STS securitisations	Simple, Transparent and Standardised Securitisations
TSC	Technical Screening Criteria
UNGC	United Nations Global Compact
XML	Extensible Markup Language
ZEB	Zero Energy Building - A term mentioned in the EPBD IV recast

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