

## National plan for increasing the number of nearly zero- energy buildings in the Netherlands



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**Date:** **15 May 2013**

**Project number:** **BUIDE13616**

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## 1 Starting point

**Please give a short overview of your national building stock. Describe the most important characteristics and emerging needs. Additionally, illustrate the chronological development of national requirements on the energy performance of buildings (for an example, see guidance document)**

- Since 1995, the Energy Performance Standards for residential and other buildings have been the basis for policies on energy conservation in buildings. Building regulations impose minimum requirements on the energy performance of buildings, depending on how they are used. More stringent minimum requirements are set periodically. The policy on nearly zero-energy buildings builds on the policy set in 1995.
- Since the introduction of the EPC as a requirement for the energy performance of a new building, it has periodically been lowered to a stricter standard. The EPC requirement for residential buildings started in 1995 with  $EPC \leq 1.4$  and has been  $EPC \leq 0.6$  since 2011. In the past, this more stringent requirement has always been supported by a study of the effects (e.g. cost effectiveness, quality of indoor environment, market readiness for the techniques applied) of the proposed EPC requirement. These feasibility studies will continue to take place for future lowering of the EPC requirement. The cost effectiveness of the measures largely determines how much room is available to introduce stricter EPC requirements.

## 2 Application of the definition of nearly zero-energy buildings

**Please indicate how a nearly zero-energy building is defined within national context and explain underlying assumptions and factors that provide the rationale for the chosen definition.**

For reporting the detailed application in practice of the definition of nearly zero-energy buildings, the table presented in the Annex is to be used.

If a national definition of nearly zero-energy buildings does not exist yet in your country, please indicate here whether precise plans are already under development and if so, please describe these plans. Please also describe if any currently used non-governmental definitions will be considered in these plans and/or a future directive.

In the Netherlands, the energy performance of a nearly zero-energy building is determined based on the NEN 7120 standard: Energy performance of buildings - Determination Method (EPB). The preliminary standard NVN 7125 District Energy Performance Measures (DEPM) may also be used. These determination methods have the following characteristics:

- Energy consumption is determined in standard utilisation and climate conditions;
- Only building-specific energy consumption receives a specific value in the building's energy performance: district measures – if any – can be assessed using the EMG;
- Energy generation may take place inside and outside the building;
- Renewable energy sources are assessed;
- Net energy consumption is determined over the course of a year.

### EPC at nearly zero

A non-dimensional number is used as an indicator of the building's energy performance, depending on how the building is used: the Energy Performance Coefficient, EPC. Assuming that a completely zero-energy building has an EPC = 0, the aim is to institute a requirement close to EPC = 0 by 2018 for government buildings and by 2020 for other buildings. This level is defined as nearly zero-energy. It is not yet possible to estimate exactly how a stricter EPC will be defined in 2018/2020. Until that time, studies will be conducted at least twice to assess how feasible and costeffective it would be to introduce a stricter EPC in the interim.

### Energy from renewable sources

Energy from renewable sources is defined in accordance with the Renewable Energy Directive (2009/28/EC). The principle of the EPB is that builders are free to choose measures that reduce the demand for energy, use energy from renewable sources, and make effective use of fossil fuels, in order to achieve the required EPC. This principle will also be maintained for nearly zero-energy buildings. As the requirements for the EPC become stricter and stricter, the percentage of renewable energy will automatically become increasingly important in order to fulfil the requirement. Even so, it will still be compulsory to fulfil the requirements for thermal insulation of the building envelope of new buildings, as stipulated in the Building Decree. (Rc at least 3.5 m<sup>2</sup>K/W for closed building envelope, U value currently at most 2.2, but dropping to 1.65 W/m<sup>2</sup>K for windows, doors, etc. at the start of 2013).

### District measures

The DEPM is used to assess collective generation of heat, cold and electricity. The district in which the DEPM may be applied is defined in the DEPM. With respect to heating, hot water and cooling, this means that there must be a physical connection (heating or cooling network) between the building and the generator. With respect to electricity, the distance between the point where collective generation of electricity takes place and the most remote plot connected to that point may not exceed 10 km for the time being. Coherent development of the district and the energy infrastructure must also be in place. The Building Decree includes an additional

requirement for the application of the DEPM in relation to new buildings. The energy performance coefficient without application of the DEPM, i.e. solely based on building-specific measures, may not exceed 1.33 times the required energy performance coefficient. This stipulation was included to ensure that energy performance at the building level continues to meet minimum requirements, in addition to the overall integral energy performance. The DEPM entered into force on 1 July 2012. Consequently, there has been very little experience with the measures so far. It also has the status of a preliminary standard; parts will still need to be developed in more detail. Moreover, research is currently being conducted to see whether additional requirements should be set for the application of the DEPM to existing buildings, and if so, which requirements. This shows that assessment of measures at the district level in relation to the energy performance of buildings is just entering the initial development stage. In moving towards nearly zero-energy buildings, the application and consequences of such measures will be evaluated regularly. This process may lead to adjustments in the area affected by the DEPM, or to the introduction of additional requirements.

### 3 Intermediate targets for improving the energy performance of new buildings in order to ensure that by 31 December 2020 all new buildings are nearly zero-energy buildings

**Please report the 2015 targets ensuring that by 31 December 2020 all new buildings are nearly zero-energy buildings. Also explain how they relate to and help to ensure that all new buildings are nearly zero-energy buildings by 31 December 2020.**

What are the qualitative and quantitative 2015 targets for all new buildings?

#### **3.1.1 Qualitative 2015 targets: Interim energy related requirements for new residential and non-residential buildings**

Requirements on fraction of renewable energies: N

Requirements on useful energy demand: N

Requirements on primary energy demand: N

#### **3.1.2 Quantitative 2015 targets: Share of nZEB according to official nZEB definition on all newly constructed buildings (define reference parameter e.g. number of buildings, floor area, volume etc.):**

- The revised Spring Agreement on Energy-Efficient New Buildings of 28 June 2012, the agreement between market parties and the Dutch government to produce energy-efficient buildings, specifies the rate of increase for the Energy Performance Coefficient of (new) residential buildings: The EPC will be lowered from 0.8 to 0.6, as introduced on 1 January 2011, and further lowered to 0.4 as per 1 January 2015, with the eventual aim of achieving the zero-energy home in future (EPC=0).
- A comparable lowering (compared to 2007) is in effect for non-residential buildings, increasing energy efficiency in new buildings by 50% in 2015. To that end, stricter requirements were introduced in January 2009, increasing energy efficiency by an average of about 25% (differing based on building function) compared to 2007.

#### **Miscellaneous:**

- The policy set for assessing the feasibility of the proposed lowering of the EPC will be continued. To that end, a feasibility study will be conducted twice a year until 2018/2020 to assess how feasible and cost-effective it would be to introduce a stricter EPC in the interim, starting in 2015 (EPC  $\leq$  0.4 for residential buildings) and an EPC near 0. The methods for calculating cost-effectiveness to date will be adapted (as needed and relevant) to the European Commission's cost optimality framework.
- Rc no less than 5 m<sup>2</sup>K/W  
From your point of view, how close is your country at the moment in achieving this target? In case there is no target defined yet, please indicate when it is expected to have such a target.

#### **Rather close**

- As described in the definition of a nearly zero-energy building, the target is to have a near-zero EPC for government buildings as of 31 December 2018 and for all other buildings as of 31 December 2020. It is not yet possible to set an exact requirement for the EPC. Insufficient information is currently available as to which (innovative) techniques and concepts for realising an EPC = 0 will be sufficiently market-ready in 2018 and/or 2020, whether they will meet the preconditions set for a good indoor climate, for example, and whether they will be cost-effective.
- As the requirements for the EPC become stricter and stricter, the percentage of renewable energy will automatically become increasingly important in order to fulfil the requirement.

#### 4 Intermediate targets for improving the energy performance of new buildings in order to ensure that by 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings

**Please report here the 2015 targets ensuring that by 31 December 2018 all new public buildings are nearly zero-energy buildings. Also explain how they relate to and help to achieve that by 31 December 2018, all new public buildings are nearly zero-energy buildings**

What are the qualitative and quantitative 2015 targets for all new buildings occupied and owned by public authorities: **EPC will be lower namely 0.4 from 1 January 2015**

##### **4.1.1 Qualitative 2015 targets: Interim energy related requirements for new public buildings**

Requirements on fraction of renewable energies:

Requirements on useful energy demand:

Requirements on primary energy demand:

##### **4.1.2 Quantitative 2015 targets: Share of public nZEB according to official nZEB definition on all newly constructed public buildings (define reference parameter e.g. number of buildings, floor area, volume etc.):**

A comparable lowering (compared to 2007) is in effect for non-residential buildings, increasing energy efficiency in new buildings by 50% in 2015. To that end, stricter requirements were introduced in January 2009, increasing energy efficiency by an average of about 25% (differing based on building function) compared to 2007.

##### **Miscellaneous:**

- The policy set for assessing the feasibility of the proposed lowering of the EPC will be continued. To that end, a feasibility study will be conducted twice a year until 2018/2020 to assess how feasible and cost-effective it would be to introduce a stricter EPC in the interim, starting in 2015 (EPC  $\leq$  0.4 for residential buildings) and an EPC near 0. The methods for calculating cost-effectiveness to date will be adapted (as needed and relevant) to the European Commission's cost optimality framework.
- Rc no less than 5 m<sup>2</sup>K/W

From your point of view, how close is your country at the moment in achieving this target? In case there is no target defined yet, please indicate when it is expected to have such a target.

- As described in the definition of a nearly zero-energy building, the target is to have a near-zero EPC for government buildings as of 31 December 2018 and for all other buildings as of 31 December 2020. It is not yet possible to set an exact requirement for the EPC. Insufficient information is currently available as to which (innovative) techniques and concepts for realising an EPC = 0 will be sufficiently market-ready in 2018 and/or 2020, whether they will meet the preconditions set for a good indoor climate, for example, and whether they will be cost-effective.
- The Building Decree needs to lay down more rapid implementation of stricter EPC requirements for government buildings than for other buildings to ensure that new government buildings will be built nearly zero-energy from the end of 2018 on. This means that local and regional authorities will need to introduce stricter requirements than the current policies.

As the requirements for the EPC become stricter and stricter, the percentage of renewable energy will automatically become increasingly important in order to fulfil the requirement.



## 5 Policies and measures for the promotion of all new buildings being nearly zero-energy buildings after 31 December 2020

### 5.1 Residential buildings

#### 5.1.1 Relevant regulations

Stricter requirements for the energy performance (EPC) of new buildings

- Target group: Builders, Project developers
- End-user activities targeted for influence: Making new buildings increasingly energy-efficient
- Status of implementation and planning: On-going to the end of 2015
- The EPC for new homes was lowered from 0.8 to 0.6 on 1 January 2011. This stricter requirement was laid down in the Building Decree. The next step towards a stricter EPC, down to 0.4, is scheduled for 1 January 2015, moving towards the final goal of the nearly zero-energy home in 2020. Non-residential buildings will have to be 50% more energy-efficient in 2015, compared to 2007. New government buildings will have to be nearly zero-energy building as from the end of 2018.

Agreement: Spring agreement on energy-efficient new buildings

- Target group: Builders, Project developers, Banks
- End-user activities targeted for Influence: Making new buildings increasingly energy efficient
- Status of implementation and planning: On-going to the end of 2015

To support the stricter energy performance requirements, an agreement (Spring Agreement) was signed in 2008 between the Dutch national government and market parties (Bouwend Nederland, the NEPROM Association of Dutch Property Developers and the NVB Association of Dutch Builders and Developers). The aim of the Spring Agreement is to improve the energy performance of new buildings by 25% in 2011 and 50% in 2015 (compared to the building requirements in 2007), with the intention of creating the conditions for zero-energy new buildings in 2020. The national government regularly strengthens laws and regulations to that end. The sector organisations implement a knowledge transfer and incentive programme for their affiliated companies to raise the level of knowledge their members have regarding improvement in energy performance. The Spring Agreement was revised in June 2012, and implementation programmes will be devised for the recast agreement.

#### 5.1.2 Relevant economic incentives and financing instruments

Energy Investment Deduction (EIA)

- Target group: Private sector
- End-user activities targeted for Influence: Promoting procurement of energy from renewable sources.
- Status of implementation and planning: On-going from 2011 to (at least) 2017
- The Energy Investment Deduction (EIA) promotes investments in energy-efficient business assets as well as assets for efficiently generating renewable energy. Part of investments in assets that meet the generic saving standards set by the EIA can be deducted from fiscal profits. This includes wind energy on land, cogeneration of heat and electricity, biomass and photovoltaic energy (solar power). Only the newest types of assets are eligible for EIA, which also allows the EIA to promote the market introduction of a new generation of efficient business assets.

Innovation Agenda for the Built Environment

- Target group: Project developers, Builders, Installers, Clients
- End-user activities targeted for influence: More energy-efficient new buildings, moving towards zero energy
- Status of implementation and planning: 2011-2014

The Energy Leap innovation programme promotes innovations and aims to halve energy consumption in the built environment in 2030 (compared to 1990). The priorities in the programme are: 1. Accelerated development of scalable energy conservation packages with high energy performance, as well as introduction in existing buildings. 2. Accelerated market development of energy conservation concepts that take an

integrated approach to design and implementation. These concepts are necessary in realising soaring ambitions in new buildings and existing buildings (integration of the supply and production chain). 3. Involving user aspects and user-friendliness in the design of energy-efficient buildings. Projects that have a tangible focus on acceleration and innovation may be eligible for support in the framework of the Innovation Agenda for the Built Environment (IAGO). The majority of the budget for IAGO-II (€ 30 million) and IAGO-II (€ 20 million) has already been invested. Proposals for the remaining funding can be submitted through 2014, focusing on residential buildings, non-residential buildings and area development.

#### 5.1.3 Energy performance certificates' use and layout in relation to nZEB standard

#### 5.1.4 Supervision (energy advice and audits)

##### Rollout of smart meters

- Target group: All end users that are within the scope of the ESD
- End-user activities targeted for influence Energy conservation by improved insight into energy consumption (as well as goals related to market forces).
- Effectiveness: The cost-benefit analysis done by KEMA (Intelligent meters in the Netherlands; revised financial analysis and policy recommendations, KEMA, June 2010) shows that it would be possible to realise average savings of 3.2% on electricity and 3.7% on gas.

Status of implementation and planning: A smart meter is installed in new buildings, during large-scale renovations and regular meter replacement, and as requested by the end user. Also upon request if the energy label improves by at least two label classes, or if the residence receives at least a class B energy label.

#### 5.1.5 Information (tools)

#### 5.1.6 Demonstration

##### Excellent Areas

- Target group: All parties involved in construction.
- End-user activities targeted for Influence: New buildings
- Status of implementation and planning: Experience is currently being developed in 19 projects. The 'Excellent Areas' will be evaluated in 2014.
- The 'Excellent Areas' are nineteen innovative new building projects across the Netherlands. In these areas, the energy performance coefficient (EPC) is one stage ahead of the statutory EPC required by the Building Decree. These involve experiments with building energy-efficient structures. The following introduction of more stringent requirements, planned for 2015, will be supported via the 'Excellent Areas'. In the 19 Excellent Areas that have been designated, construction companies are gaining experience with an EPC which is at least 25% lower. Municipalities, project developers and other parties involved in the building process gain extensive practical experience with innovative building methods and techniques in the Excellent Areas. This especially applies to looking for innovation in the building process and for new forms of cooperation and funding. 11 of the 19 'Excellent Areas' are supported by an Order in Council, which gives legal recourse for enforcing the lower EPC in those areas. The knowledge and experiences gained there will be used to gain experience in energyefficient new buildings in the run-up to plans for stricter requirements, particularly in 2015. In the end, new buildings will have to be nearly zero energy in 2020.

##### Green Deal in the municipality of Amsterdam

- Target group Housing corporations and owners' associations
- End-user activities targeted for influence All new buildings in the city will be climate neutral from 2015 on.

Status of implementation and planning: 2011-2015 The municipality of Amsterdam has set the target of ensuring that all new buildings in the city will be climate-neutral from 2015 on. It affects 23,900 homes which will be built between 2015-2020. The national government works with the municipality of Amsterdam to eliminate obstacles in laws and regulations, freeing the city to set requirements that lead to climate-neutral new buildings. The national government supports and appreciates this ambition and will be working with Amsterdam to assess how possible obstacles in laws and regulations that might pose a problem for this ambition could be eliminated before this transition period enters into effect. The municipality and the national government will be exploring these options together and arriving at a joint decision within a year.

#### 5.1.7 Education and training

## 5.2 Non-residential buildings

#### 5.2.1 Relevant regulations

#### Enforcement of the Environmental Management Act in non-residential Buildings

- Target group: Building owners
- End-user activities targeted for influence: Enforcement of statutory requirement to implement energy-saving measures that can be earned back in less than 5 years
- Status of implementation and planning Current

Energy conservation is a topic that is covered by the Environmental Management Act and developed in more detail in the Activities Decree. On the strength of Article 2.15(1) of the Activities Decree, large or medium-sized businesses must implement all cost-effective measures that can be earned back in 5 years or less. The obligation enters into force once a business exceeds an energy consumption level of 50,000 kWh and 25,000 m<sup>3</sup> of gas. The obligation also applies to non-residential buildings, including offices, healthcare institutions and schools. The competent authority, generally the municipality, can enforce compliance with the Activities Decree. If the business uses more than 200,000 kWh of electricity or 75,000 m<sup>3</sup> of natural gas annually, the enforcing authority may require the business to carry out an energy conservation study. The study can be required if it can plausibly be assumed that insufficient cost-effective measures are being implemented.

5.2.2 Relevant economic incentives and financing instruments

5.2.3 Energy performance certificates' use and layout in relation to nZEB standard

5.2.4 Supervision (energy advice and audits)

5.2.5 Information (tools)

5.2.6 Demonstration

5.2.7 Education and training

**5.3** From your point of view, how would you evaluate the current measures that are in force? Please also try to describe the existing gap between what is in force and what should be in force in order to ensure that after 31 December 2020, all new buildings are nearly zero-energy buildings. Are there precise measures planned for the future?

The measures are reasonable with an exemption for high buildings

## 6 Policies and measures for the promotion of all new buildings occupied and owned by public authorities being nearly zero-energy buildings after 31 December 2018

6.1 All new buildings occupied and owned by public authorities	
6.1.1	Relevant regulations
6.1.2	Relevant economic incentives and financing instruments
	Towards zero-energy schools and offices (NESK): This subsidy scheme aims to promote projects that have distinctive energy efficiency, sustainability and organisational innovations in the building process. The projects should also be able to serve as role models and sources of inspiration. The projects that were awarded funding (eight schools and seven offices) are currently being carried out.
6.1.3	Energy performance certificates' use and layout in relation to nZEB standard
6.1.4	Supervision (energy advice and audits)
6.1.5	Information (tools)
6.1.6	Demonstration
6.1.7	Education and training
6.2	From your point of view, how would you evaluate the current measures that are in force? Please also describe the existing gap between what is in force and what should be in force in order to ensure that after 31 December 2018, all new public buildings are nearly zero-energy buildings. Are there precise measures planned for the future?
	The measures are reasonable with an exemption for high buildings

## 7 Policies and measures for the promotion of existing buildings undergoing major renovation being transformed to nearly zero-energy buildings

### 7.1 Residential buildings

#### 7.1.1 Relevant regulations

Rental housing assessment system

- Target group: Landlords, Tenants
- End-user activities targeted for
- Influence: Promoting energy-saving investments
- Status of implementation and planning Entry into force on 1 July 2011

The rental housing assessment system was changed on 1 July 2011. This points system assesses the energy performance of the home (based on the energy label) in order to promote energy-saving measures. The points system uses features of the home to set the maximum rental price of the home. By including the energy label in the assessment for the points system, the maximum rental price of the home is linked to the home's energy label. The amendment to the points system will be evaluated after three years, immediately after the end of the transition period. The amended points system immediately entered into force for homes that have an energy label and for homes that are required to have an energy label based on the regulation. Homes that are not yet required to have an energy label are subject to a transition period (until 1 January 2014). After that, the energy label of these homes will also be included in the rental assessment.

#### 7.1.2 Relevant economic incentives and financing instruments

More with Less: Agreement on energy conservation in existing homes and buildings

- Target group: Housing corporations, Builders, Installation sector, Owner-occupiers
- End-user activities targeted for Influence: Making existing buildings more energy efficient
- Status: Through 31 December 2020

Agreement on Energy Conservation in the Rental Sector

- Target group: Housing corporations, Builders, Installation sector, Owner-occupiers
- End-user activities targeted for Influence: Making existing buildings more energy efficient
- Status: Through 31 December 2020
- The Agreement on Energy Conservation in the Corporation Sector for existing buildings, dating from October 2008, has been recalibrated and strengthened. The 2008 agreement with housing corporations is an agreement between the national government, the Aedes association of housing corporations and the Woonbond national housing association. The aim is to safeguard the investments made by the housing corporations in achieving the energy efficiency targets. Housing corporations own approximately 2.3 million homes and have taken steps toward improving the energy efficiency of their housing portfolio. The new Agreement on Energy Conservation in the Rental Sector in June 2012 converts the original target of 20% 'additional' savings in the 2008-2018 period into a total savings of 33% from 2008 to 2020. This means that the rental homes owned by housing corporations will have an average energy efficiency of label B by the end of 2020. Now that Vastgoed Belang has also signed the agreement, it also applies to tenants in the private rental sector. The target for that sector is that 80% of homes must have been improved to label C or better before the end of 2020. The Cabinet is committed to removing statutory, financial and fiscal obstacles for collective implementation of renewable energy. In addition, labels that are not considered green (D, E, F and G) have been declared unacceptable and a plan for bringing them to an end. The developing trend in housing costs (rent, energy, rent surcharge) is assessed nationally and monitored locally.

Lower VAT rate for insulation work and labour costs for maintenance and renovation of residential buildings

- Target group: Housing corporations, Homeowners

- End-user activities targeted for influence: Promoting energy-saving investments
- Status of implementation and planning: 2009-present
- This concerns the reduction in VAT rate for measures in and on the home that target energy conservation (insulation of the floor, roof and outer walls) and for all labour costs involved in renovation and restoration work done in and around the home. The VAT rate has been lowered from 19% to 6%. The low VAT rate for labour costs is still in effect.

#### Green Projects scheme / National Mortgage Guarantee

- Target group: Homeowners
- End-user activities targeted for
- Influence: Promoting investments in energy conservation
- Status of implementation and planning: Current
- These measures concern loans that homeowners take out to fund investments in energy conservation. The Green Projects scheme is a tax discount scheme for green investments. Investments in sustainable construction and energy conservation are also covered by the scheme. Because the government gives savers and investors a tax discount on investments in green projects, investors can be satisfied with less compensation and banks can loan money to fund green projects at a lower interest rate. The scheme was modified on 1 January 2011. The 2.5% tax advantage for savers and investors was decreased gradually to 0.7%, as agreed in the 2012 Spring Agreement. The tax exemption for returns on equity (1.2% advantage) remains intact. This represents a remaining tax advantage of 1.9% for savers and investors. The National Mortgage Guarantee insures the risk that the loan holder will not be able to pay the mortgage. This guarantee applies to mortgages up to €350,000 (1 July 2012), and will be reduced gradually to €265,000 in 1 July 2014. Energy-saving measures can also be included, allowing investments in energy conservation to be excluded from the income limit up to a maximum amount of €8,000. Energy-saving measures include: high-efficiency boiler, wall cavity insulation, floor insulation, high-efficiency ++ glazing, heat pump, solar boiler and/or solar panels.

#### Revolving Fund

- Target group Homeowners, housing corporations and private rentals
- End-user activities targeted for influence: Promoting investments in energy conservation in existing buildings
- Status of implementation and planning Fund expected to be established at the end of 2012, duration has not yet been determined

The national government will set up a revolving fund for energy-saving measures in the built environment (existing buildings). This measure will make the living and housing expenses of Dutch households and businesses more controllable, limiting the impact of rising energy prices and the higher energy tax. The 2013 budget agreement reserves room (70 million in 2013 and 58 million in structural budget) for co-funding large-scale projects (e.g. housing corporations, healthcare institutions, schools and swimming pools) and private projects. A fully revolving fund structure ensures that the money comes back in and is available for new investments again. It will be developed in detail in the second half of 2012.

7.1.3	Energy performance certificates' use and layout in relation to nZEB standard
7.1.4	Supervision (energy advice and audits)
	<p>Rollout of smart meters</p> <ul style="list-style-type: none"> <li>• Target group: All end users that are within the scope of the ESD</li> <li>• End-user activities targeted for influence Energy conservation by improved insight into energy consumption (as well as goals related to market forces).</li> <li>• Effectiveness: The cost-benefit analysis done by KEMA (Intelligent meters in the Netherlands; revised financial analysis and policy recommendations, KEMA, June 2010) shows that it would be possible to realise average savings of 3.2% on electricity and 3.7% on gas.</li> </ul> <p>Status of implementation and planning: A smart meter is installed in new buildings, during large-scale renovations and regular meter replacement, and as requested by the end user. Also upon request if the energy label improves by at least two label classes, or if the residence receives at least a class B energy label.</p>
7.1.5	Information (tools)
7.1.6	Demonstration
	<p>Block by Block approach (large-scale approach to energy conservation in existing residential buildings)</p> <ul style="list-style-type: none"> <li>• Target group: Homeowners, housing corporations and private rentals</li> <li>• End-user activities targeted for Influence: Facilitating investments in improving energetic quality of residential buildings</li> <li>• Status of implementation and planning: 13 local and 1 regional Block by Block projects were launched at the end of 2011. The first 10,000 homes will have been prepared by the end of 2012. Implementation of the measures will take place in 2013.</li> <li>• In order to make more progress in existing buildings, the Cabinet has instituted a large-scale approach to existing buildings, known as 'Block by Block'. The aim is to use standard packages managed at the local level and relying on market funding (e.g. from institutional investors). Influencing the behaviour of residents and users will also be part of the approach. A pilot was launched in 2011 consisting of 13 local projects and 1 regional project. The local projects were driven and implemented by market parties in close collaboration with the municipalities. The first 10,000 homes will have been prepared by the end of 2012. Implementation of the measures will take place in those homes in 2013. During the three-year period of the pilot, the aim is to gain sufficient experience to develop a concept that can be rolled out all over the country. This primarily concerns experience with various funding structures, marketing models and ways of guaranteeing quality. The national government provides financial support for the projects in terms of extra process costs and ensures the dissemination of knowledge and experience.</li> </ul> <p>Green Deal in the province of Overijssel</p> <ul style="list-style-type: none"> <li>• Target group: Housing corporations</li> <li>• End-user activities targeted for</li> <li>• Influence: Investing in improving energetic quality of residential buildings</li> <li>• Status of implementation and planning 2012-2014</li> </ul> <p>The Dutch province of Overijssel signed an agreement in June 2011 with 25 housing corporations with property in that province, stating that the energy efficiency of the residential properties they own would be improved by 25%. These housing corporations represent 90% of the rent-controlled rental housing in Overijssel. The province of Overijssel has set up a scheme for the housing corporations that sign this agreement; it has arranged to provide funding for energy-saving measures or generation of renewable energy in existing rent-controlled homes. This approach is intended to lead to manageable living expenses.</p>
7.1.7	Education and training
<b>7.2</b>	<b>Non-residential buildings</b>
7.2.1	Relevant regulations



7.2.2	Relevant economic incentives and financing instruments
7.2.3	Energy performance certificates' use and layout in relation to nZEB standard
7.2.4	Supervision (energy advice and audits)
7.2.5	Information (tools)
7.2.6	Demonstration
7.2.7	Education and training
<b>7.3</b>	From your point of view, how would you evaluate the current measures that are in force? Please also try to describe the existing gap between what is in force and what should be in force in order to stimulate the transformation of buildings that are refurbished into nZEB. Are there precise measures planned for the future?
	Reasonable: there is no gap between what is in force nowadays and what will be in force in 2020

## 8 Additional Information

**Please fill in any additional information on actions taken to increase the number of nearly zero-energy buildings in your country.**

**A lower EPC namely 0,4 for all buildings from January 1th 2015**

## 9 Possible improvements

**Where do you see most room for improvement in order to increase the number of nearly zero-energy buildings in your country? Please also try to give examples for appropriate measures.**

**For Houses ( non residential) it will be no problem . For non residential buildings it will be a bit more difficult**

## Annex- Definition of nZEB

1. General Information		
Country	The Netherlands	
Name of regulation ,directive, certification scheme	Bouwbesluit	
Editor of regulation, directive, certification scheme		
Year of introduction of current version	2012	
benchmark of current version (Select one)	<input type="radio"/> Energy Autonomous building <input type="radio"/> Efficient buildings <input type="radio"/> Net zero energy buildings <input type="radio"/> Plus energy buildings <input type="radio"/> Nearly zero energy buildings <input type="radio"/> Zero energy buildings <input type="radio"/> Other	
Integration and consideration in national directive	Please add explanation/ comment/ source considered	
2. Field of Application		
<b>2.1 Building category</b> Select one and describe right is this typology included in the directive? Are special requirements or exceptions defined for this typology? If more than one definition exists, you can duplicate this appendix for each of them. <i>Member States shall ensure that all new buildings are nearly zero- energy buildings by 31 December 2020 respectively after 31 December 2018 (occupied and owned by public authorities). For the purpose of the calculation buildings should be adequately classified into the [...] categories. References: EPBD article 9.1a/b, EPBD Annex I.</i>		
<b>Category</b> <input type="radio"/> Residential <input type="radio"/> Non-residential <input type="radio"/> Residential and Non-residential	Please add explanation/ comment/ source	
single family houses	included in the directive	Please add explanation/ comment/ source
apartment blocks	included in the directive	Please add explanation/ comment/ source
Offices	included in the directive	Please add explanation/ comment/ source
educational buildings	included in the directive	Please add explanation/ comment/ source
hospitals	included in the directive	Please add explanation/ comment/ source
hotels and restaurants	included in the directive	Please add explanation/ comment/ source
sports facilities	included in the directive	Please add explanation/ comment/ source
wholesale and retail trade service buildings	included in the directive	Please add explanation/ comment/ source
other types of energy-consuming buildings	included in the directive	Please add explanation/ comment/ source
2.2 New/retrofit buildings		
Select one and describe right. If more than one definition exists, you can duplicate this appendix for each of them. <i>New, and existing buildings that are subject to major renovation, should meet minimum energy performance requirements adapted to the local climate.          Member States shall furthermore [...] stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings. Reference: EPBD preamble recital 15, EPBD article 9.2.</i>		

<input type="radio"/> New buildings <input type="radio"/> Retrofit <input type="radio"/> New and retrofit	Please add explanation/ comment/ source
<b>2.3 Private/public buildings</b> <b>Select one and describe right. If more than one definition exists, you can duplicate this appendix for each of them.</b> <i>Member States shall ensure that by 31 December 2020, all new buildings are nearly zero- energy buildings and after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings. Reference: EPBD article 9.1a/b</i>	
<input type="radio"/> Private <input type="radio"/> Public <input type="radio"/> Public and private	
<b>3. Energy Balance and calculation</b>	
<b>3.1 Balance Type</b> Describe how renewable energy is calculated / included in the energy balance (e.g. renewable heat from solar thermal collectors reduces energy use for heat and DHW; renewable electricity reduces/compensates delivered electricity). <i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources</i> <i>Energy performance of a building means the calculated or measured amount of energy needed to meet the energy demand [...]. Reference: EPBD article 2.2, EPBD article 2.4</i>	
<input type="radio"/> energy demand vs energy generation <input type="radio"/> energy import vs energy export <input type="radio"/> virtual balance between demand and generation <input type="radio"/> not specified <input type="radio"/> other	Please add explanation/ comment/ source
<b>3.2 Physical boundary</b> Select the widest possible boundary and describe right if/which further subdivisions are possible <i>This directive lays down requirements as regards the common general framework for [...] buildings and building units. [...] building' means a roofed construction having walls, for which energy is used to condition the indoor climate. Reference: EPBD article 1.2, EPBD article 2.1</i>	
<input type="radio"/> single building <input type="radio"/> building unit <input type="radio"/> building unit <input type="radio"/> building site <input type="radio"/> cluster of buildings <input type="radio"/> quarter or city <input type="radio"/> other	Please add explanation/ comment/ source
<b>3.3 System boundary demand / energy uses included</b> Define if this load sector is included in the energy balance calculation (other requirements like maximum consumption values can be described below under item 5, further requirements). <i>[...] energy performance of a building means the calculated or measured amount of energy needed to meet the energy demand associated with a typical use of the building, which includes, inter alia, energy used for heating, cooling,</i>	

<i>ventilation, hot water and lighting. Reference: EPBD article 2.4</i>		
space heating, domestic hot water	considered	Please add explanation/ comment/ source
ventilation, cooling, air conditioning	considered	Please add explanation/ comment/ source
auxiliary energy	considered	Please add explanation/ comment/ source
lighting	considered	Please add explanation/ comment/ source
plug loads, appliances, IT	considered	Please add explanation/ comment/ source
central services	considered	Please add explanation/ comment/ source
electric vehicles	considered	Please add explanation/ comment/ source
embodied energy	not defined	Please add explanation/ comment/ source
<b>3.4 System boundary generation / renewable energy sources included</b> Select and explain right (e.g. only in building's physical footprint, on-site, on-site incl. import of off-site renewables like pellets, wood chips, rape oil etc.). How is CHP (based on non-renewable energy carriers like natural gas or oil) included? <i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby. [...] energy from renewable sources means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases. [...] minimum levels of energy from renewable sources [...] to be fulfilled, inter alia, through district heating and cooling [...]. Reference: EPBD article 2.2, EPBD article 2.6, EPBD article 13.4</i>		
generation on-site	considered	Please add explanation/ comment/ source
generation near by	considered	Please add explanation/ comment/ source
generation external	considered	Please add explanation/ comment/ source
crediting	not considered	Please add explanation/ comment/ source
<b>3.5 Balance period / calculation step</b> What is the defined period of time over which the balance is calculated? Is the calculation period divided into calculation steps (e.g. one hour, one month or one heating and/or cooling season)? <i>[...] The methodology for calculating energy performance should be based not only on the season in which heating is required, but should cover the annual energy performance of a building [...]. Reference: EPBD preamble recital 9</i> <i>[...] requirements should be set with a view to [...] the cost-optimal balance between the investments involved and the energy costs saved throughout the lifecycle of the building [...]Reference: EPBD preamble recital 10.</i>		
<input type="radio"/> Life cycle balance <input type="radio"/> Yearly <input type="radio"/> Seasonal <input type="radio"/> Other	Please add explanation/ comment/ source	
<b>3.6 Monthly accounting limitation</b> Is a monthly accounting limit defined? Is it based on end energy (e.g. monthly electricity generation compensates monthly electricity loads) or on primary energy (any monthly generation compensates any loads)? Are surpluses transferred to an annual balance?		
<input type="radio"/> monthly source based end energy crediting <input type="radio"/> monthly primary energy crediting <input type="radio"/> nothing defined <input type="radio"/> other	Please add explanation/ comment/ source	
<b>4. Accounting system</b>		
<b>4.1 Normalization</b>		
<i>[...] including a numerical indicator of primary energy use expressed in kWh/m<sup>2</sup> per year. Reference: EPBD article 9.3a</i>		
<input type="radio"/> person <input type="radio"/> gross floor area	Please add explanation/ comment/ source	

<input type="radio"/> net floor area <input type="radio"/> gross volume <input type="radio"/> net volume <input type="radio"/> usable floor area <input type="radio"/> treated floor area <input type="radio"/> conditioned area <input type="radio"/> other	
<b>4.2 Primary metric</b> Indicate which metric is used for the energy performance calculation / energy balance and give input on (the source of) the conversion factors on the right. Possible sources are e.g. EN 15603 or national and regional codes.	
<p><i>The energy performance of a building shall be expressed in a transparent manner and shall include an energy performance indicator and a numeric indicator of primary energy use, based on primary energy factors per energy carrier, which may be based on national or regional annual weighted averages or a specific value for on-site production. Reference: EPBD Annex 1.</i></p> <p><i>[...] including a numerical indicator of primary energy use expressed in kWh/m<sup>2</sup> per year. Reference: EPBD 9.3a</i></p> <p><i>[...] primary energy' means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process. Reference : EPBD article 2.5</i></p>	
<input type="radio"/> energy need <input type="radio"/> energy use <input type="radio"/> delivered/site energy <input type="radio"/> primary / source energy (renewable part included) <input type="radio"/> primary / source energy (renewable part not included) <input type="radio"/> (equivalent) carbon emissions <input type="radio"/> exergy <input type="radio"/> energy costs <input type="radio"/> environmental credits <input type="radio"/> points (labeling system) <input type="radio"/> other	Please add explanation/ comment/ source
<b>4.3 Secondary metric</b>	
<input type="radio"/> energy use <input type="radio"/> energy need <input type="radio"/> delivered/site energy <input type="radio"/> primary / source energy (renewable part included) <input type="radio"/> primary / source energy (renewable part not included)	Please add explanation/ comment/ source

<input type="radio"/> (equivalent) carbon emissions <input type="radio"/> exergy <input type="radio"/> energy costs <input type="radio"/> environmental credits <input type="radio"/> points (labeling system) <input type="radio"/> other	
<b>4.4 Symmetric or asymmetric weighting</b>	
<input type="radio"/> symmetrical weighting <input type="radio"/> asymmetrical weighting	Please add explanation/ comment/ source
<b>4.5 Time dependent weighting</b> Static: no time dependent weighting (annual constant weighting/factors) Quasi-static: seasonal/monthly average weighting factors Dynamic: weighting factors based on shorter time periods /hourly basis (according to energy offer and demand in the grid)	
<i>Primary energy factors [...] may be based on national or regional yearly average values and may take into account [...] European standards. Reference: EPBD 9.3a</i>	
<input type="radio"/> static conversion factors <input type="radio"/> quasi static conversion factors <input type="radio"/> dynamic conversion factors	Please add explanation/ comment/ source
<b>5. Further requirements</b>	
<b>5.1 Fraction of renewables</b> Select and describe right if guidelines are given for any fraction of renewable energy and indicate how/at which level a certain fraction is calculated (e.g. solar thermal heat might be a fraction of energy use, electricity from PV a fraction of delivered energy.)	
<i>Member States shall introduce [...] appropriate measures [...] to increase the share of all kinds of energy from renewable sources in the building sector [...]. By 31 December 2014, Member States shall [...] require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings [...] Reference: RED article 13.4</i> <i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...] Reference : EPBD article 2.2</i>	
<input type="radio"/> defined <input type="radio"/> not defined <input type="radio"/> defined in other regulation	Please add explanation/ comment/ source
<b>5.2 Temporal performance</b> Describe if any requirements are given for a temporal match between on-site energy load and on-site energy generation (load match) and which calculation procedures are applied.	
<u>Load match</u> <input type="radio"/> defined <input type="radio"/> not defined	Please add explanation/ comment/ source
<u>Grid interaction</u>	



<input type="radio"/> defined <input type="radio"/> not defined	Please add explanation/ comment/ source
<b>5.3 Energy performance or rating requirements</b> Are limitations given for a standard energy rating, an energy indicator or maximum demands for heating, cooling, embodied energy, demand of appliances, etc.? If yes, type the values and give explanations on the right <i>nearly zero-energy building means a building that has a very high energy performance [...]. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]. The energy performance [...] shall [...] include an energy performance indicator and a numeric indicator of primary energy use [...]. Reference : EPBD article 2.2, EPBD Annex 1.</i>	
<b>Performance or rating</b> <input type="radio"/> defined <input type="radio"/> not defined <input type="radio"/> defined in other regulation	Please add explanation/ comment/ source
<b>Energy Performance indicator</b> Is an energy performance indicator defined? If yes, type the values and the according unit.	Give further explanation
<b>Numeric indicator of primary energy use</b> Is a numeric indicator of primary energy use defined? If yes, type the values and the according unit.	Give further explanation
<b>5.4 General framework / prescriptive requirements</b> Describe which guidelines are given for: Thermal characteristics (insulation, thermal bridges, thermal capacity, passive heating, internal loads, solar protection) Efficiency of installations (hot water supply, air-conditioning, lighting fan power) <i>The methodology shall [...] take into consideration: thermal characteristics (thermal capacity, insulation, passive heating, cooling elements, and thermal bridges), heating installation and hot water supply, air-conditioning installations, natural and mechanical ventilation, built-in lighting, the design, positioning and orientation of the building, outdoor climate, passive solar systems and solar protection, [...], internal loads. Reference: EPBD Annex 1</i>	
<input type="radio"/> defined <input type="radio"/> not defined <input type="radio"/> defined in other regulation	Please add explanation/ comment/ source
<b>5.5 Definition of comfort level &amp; IAQ requirements (for winter and summer season, beside other national directives)</b> Describe which guidelines are given for indoor climatic conditions, minimum or maximum indoor temperature, minimum lighting levels/ daylight availability, minimum ventilation rates/ natural ventilation, indoor air quality, max. CO2 levels, etc. <i>This Directive [...] takes into account [...] indoor climate requirements [...] Reference: EPBD article 1.1</i> <i>The methodology shall [...] take into consideration: [...] indoor climatic conditions [...]Reference: EPBD Annex 1</i> <i>That includes [...] indoor air-quality, adequate natural light [...].Reference:</i>	

<i>EPBD preamble recital 9</i>	
<input type="radio"/> defined <input type="radio"/> not defined <input type="radio"/> defined in other regulation	Please add explanation/ comment/ source
<b>5.6 Monitoring procedure</b> Describe if and how a monitoring mandatory is formulated; calculated or measured values are used; an evaluation of the indoor environmental quality is considered; which calculation step is used.	
<i>[...] energy performance of a building means the calculated or measured amount of energy needed [...] Reference: EPBD article 2.4</i> <i>Member States shall encourage the introduction of intelligent metering systems [...] and the installation of automation, control and monitoring systems [...]. Reference: EPBD article 8.2</i>	
<input type="radio"/> defined <input type="radio"/> not defined	Please add explanation/ comment/ source



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