Netherlands Enterprise Agency

Price survey and international comparison of the NTA 8800 Energy Performance Certificate

Summary

Commissioned by the ministry of the Interior and Kingdom Relations

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Prijspeiling en internationale vergelijking van het NTA 8800 energielabel

Eindrapport

Opdrachtgever: Ministerie van Binnenlandse Zaken en Koninkrijksrelaties en RVO

Rotterdam, november 2021

Summary

Reason for the study

The built environment must be energy neutral by 2050. Achieving this goal will require substantial modifications to the building stock in the Netherlands and the imposition of strict requirements on new construction projects. The energy performance of buildings is calculated according to a set method and recorded in an energy performance certificate. To ensure that this is carried out uniformly in all EU Member States, the European Union introduced the Energy Performance of Buildings Directive (EPBD) in 2002. In 2018, the Directive was revised and the CEN-EPB[1] standards were introduced.

In order to comply with the revised EPBD, the Netherlands developed a new assessment method known as NTA 8800. The NTA 8800 energy performance certificate replaced the Energy Index (EI, for residential and non-residential buildings) and the simplified energy performance certificate called '*vereenvoudigd energielabel*' (VEL, only for residential buildings) with effect from 1 January 2021.

For the introduction of the NTA 8800 energy performance certificate, Sira estimated the average costs at €100 for an apartment and €190 for a single-family dwelling based on this new method.[2] In response to questions in the Dutch Parliament on this matter, the Minister of the Interior and Kingdom Relations promised in a Letter to Parliament[3] to monitor prices and commission an international price comparison. This study fulfils this commitment.

Objective of the study

This study has three objectives:

1. to gain insight into the level and breakdown of and trends in market prices in the Netherlands for NTA 8800 energy performance certificates;
2. to determine how market prices in the Netherlands compare to prices for similar energy performance certificates in other EU Member States and the reasons for any differences;
3. to look at what lessons the Netherlands can learn from other countries, for example in order to bring down prices or improve the system.

Investigative approach

Three research methods were used to determine the level and breakdown of and trends in prices in the Netherlands:

- A survey was conducted among independent experts at three different moments in time (May, July and September 2021), which included questions about the price level and price breakdown for different market segments (private dwellings, housing associations and non-residential buildings).
- Prices offered on the website www.woninglabel.nl (private dwellings) were analysed by means of 'web scraping'[4] at three different moments in time (also in May, July and September 2021);

[1] The abbreviation CEN-EPB stands for Comité Européen de Normalisation - Energy Performance of Buildings

[2] SIRA (2019) Burden measurement for change in energy performance method and benchmarking of energy performance certificates v1.0 [Lastenmeting wijziging energieprestatiemethode en inijking energielabels v1.0]

[3] Parliamentary Papers II, 2020-21 session, 30 196 no. 729

[4] Web scraping is the automated gathering of data published on websites.

- A series of interviews were conducted with energy performance certificate buyers and suppliers.

The information obtained from the various sources was then combined to get the best possible picture of prices in the Netherlands. The survey provides broad insight into the price level and price breakdown for a range of properties and segments. The web scrape provides the most reliable information about the price level in the private dwelling market segment and is thus a focal point for some of the survey results. The interviews helped in advance to shape the survey and subsequently to interpret and clarify the results obtained. All prices reported are exclusive of VAT.

The international comparison was carried out by performing a literature review for 12 European Union Member States, conducting interviews with parties involved (government employees and/or independent experts) and getting these individuals to complete a short written price document. The international comparison was based on the results of the second price survey in the Netherlands, which was conducted in early July 2021, as the results of the third price survey were not yet available at that time.

For the purpose of this study, Ecorys entered into a collaboration with the EIB economic institute for the construction industry. The Netherlands price survey was carried out by Ecorys, while the international comparison was carried out by the EIB. Ecorys is ultimately responsible for the study report.

Study findings

Price level in the Netherlands

First of all, it is important to note that the energy performance certificate market is heavily segmented. Energy performance certificate prices vary depending on certificate type, property type, buyer type, contract size and quality delivered. An energy performance certificate therefore does not have a single price. A different price applies to each segment.

On top of this, the market is still rapidly changing. There is a constant stream of new suppliers, while others adjust their offer based on experience gained. As a result, the price levels measured are a snapshot. Nevertheless, prices were reasonably stable during the period covered by the study. A number of conclusions can be drawn about the price level on this basis.

For a private single-family dwelling, both the mean and median energy performance certificate price (basic building inspection) in all survey rounds was between €250 and €300 excluding VAT. On woninglabel.nl, the means and medians for an equivalent property were between €285 and €322 excluding VAT. This difference corresponds approximately to the mark-up charged by woninglabel.nl for intermediary activities.

Housing associations are generally offered lower prices than private individuals, mainly because they receive a discount when purchasing energy performance certificates for large numbers of similar dwellings at the same time. For a contract encompassing 50 single-family dwellings, the mean and median discounts in the first, second and third survey round were around 70%, 50% and 40% respectively, which equates to a price of around €100 excluding VAT per dwelling.

In the non-residential construction segment, each property is different and prices vary widely. As a result, there is no clearly defined price level.

There is no noticeable price increase compared to the previous EI energy performance certificate.[5] Conversely, buyers who previously used the VEL energy performance certificate have witnessed a steep rise in prices.

Price breakdown in the Netherlands

The main cost factors that apply to an energy performance certificate are the hourly rate and the time spent by the independent expert. There seems to be a broad consensus that costs are accrued according to the principle of time spent times hourly rate. The majority of suppliers also state that they determine their prices according to this method. However, some suppliers indicate that they take a more demand-oriented approach: they determine their price by looking at what buyers are prepared to pay. Exceptions aside, prices can be traced back to hourly rates between €50 and €100 excluding VAT and a property-dependent amount of time spent. For a private single-family dwelling, an independent expert applies an hourly rate of around €70 excluding VAT and assumes, on average, 30 minutes travel time, 30 minutes discussion with the customer, an hour-long building inspection and two hours of analysis and data entry, meaning a total amount of time spent of four hours.

Price trends in the Netherlands

A comparison of the results for the different survey dates reveals no clear trends. Price fluctuations can be seen, however these appear to be mainly due to changes in the response group. On woninglabel.nl, prices for the basic building inspection energy performance certificate fell by 8–11% between rounds 2 and 3, while prices for the performance certificate based on a detailed building inspection rose by 1–10%. However, this cannot be described as a trend yet.

Prior to the introduction of the NTA 8800 energy performance certificate, the estimated price of a basic building inspection of a single-family dwelling was €190. In practice, however, the price level is higher mainly because the time spent did not include customer contact and travel time, and an internal hourly rate was applied with no commercial mark-ups.

Price level and price breakdown in the Netherlands compared to other EU Member States

In accordance with the EPBD guidelines, all EU Member States that were surveyed express the energy performance indicator in categories based on energy consumption in kWh per square meter per year. Most countries use a calculated energy performance indicator based on building features. These features are almost always established by an independent expert on site.[6] In countries where an independent expert visit was not a requirement, such as the Netherlands and Spain, rules have now been introduced that make this compulsory. Of the Member States surveyed, Estonia and Germany also use energy performance certificates that are not based on building features, but on actual energy consumption in the dwelling. In Germany, this applies to around 50% of energy performance certificates registered.[7]

In the Netherlands, a home owner of an existing single-family dwelling pays €270 excluding VAT for an energy performance certificate (Table S.1) on average based on the second Netherlands price survey. If Estonia's and Germany's measured energy performance certificates are disregarded, the Dutch price is close to the average of €255. If we also take into account available income, the Netherlands occupies a middle position compared to the Member States surveyed that use a calculated energy performance certificate.

[5] The 'EI certificate mark-down' (*Afprijzing EI-label*) study by Brink (2021) was used to provide an indication of the price level for the EI certificate.

[6] Only Austria does not require on-site visits. The number of certificates issued 'remotely' is unknown. However, according to the independent expert interviewed, an on-site visit is necessary to deliver the desired quality.

[7] A calculated energy performance certificate is required for new and renovated buildings and for apartment buildings with fewer than five apartments that were constructed prior to 1978 and have not been renovated. A calculated energy performance certificate is also compulsory if a distinction cannot be made between electricity and heat.

The study shows that the time spent and the hourly rate determine energy performance certificate costs in the Member States, as in the Netherlands. The hourly rates were reported by the people interviewed in the Member States. Additional costs, such as overhead costs, certification and training costs and certificate registration costs applied in some countries, are included in the rates. The application and amount of these costs vary from country to country. The costs shown in the table include all the abovementioned costs and exclude VAT.

Table S.1 Reported energy performance certificate prices for an existing single-family dwelling, excluding VAT (June/July/August 2021)

Country	Certificate type	Average price (€)	Average time spent (hours)	Average hourly rate (€)
Denmark	Calculated	480	5	100
Finland	Calculated	450	5	90
Austria[8]	Calculated	440	5.5	80
Germany	Calculated (50%)	350	5	70
The Netherlands	**Calculated**	**270**	**4**	**70**
Belgium (Flanders)	Calculated	225	3	75
Ireland	Calculated	200	3	70
Portugal	Calculated	200	12	16.5
Italy	Calculated	160	4	40
Estonia	Measured	150	3	50
France	Calculated	125	3	45
Germany	Measured (50%)	100	1	100
Spain	Calculated	100	3	35
Hungary	Calculated	70	6	11.5

Energy performance certificates for individual apartments, as may be requested by private individuals, are often more expensive in the Netherlands than in other Member States that issue energy performance certificates for individual apartments. Where apartments are inspected in bulk, for example in the case of housing associations, the costs in the Netherlands are also higher than in countries such as Spain, Hungary, France, Denmark and Finland. The costs are generally lower than in Austria and for the calculated energy performance certificates in Germany.[9]

Reasons for differences between Member States

The Member States surveyed can be divided into three categories when it comes to energy performance certificate prices:

- ‘expensive’ countries characterised by many variables to be entered and often high rates. Examples include Denmark, Finland, Austria and Germany;
- ‘middle category’ countries that encompass a broad spectrum in terms of number of variables to be entered and rates. Examples include the Netherlands, Belgium (Flanders), Ireland, Portugal and Italy;
- ‘inexpensive’ countries that aim for cost efficiency and have relatively low rates. Examples include the measured energy performance certificates in Estonia and Germany and the calculated certificates in Hungary, Spain and France.

[8] A rate of €250 to €300 excluding VAT is stated for energy performance certificates issued without a visit.

[9] A bulk inspection involves a visit to a number of apartments in order to issue an energy performance certificate for the building as a whole or for the apartments that form part of the building. The costs per apartment therefore depend on the number of apartments to be visited in relation to the total number of apartments in the building.

Time spent

The time it takes to prepare an energy performance certificate depends on several factors. There is therefore no obvious reason why it takes longer to prepare a certificate in one country than in another. The time spent on the inspection in a Member State is often determined by a combination of factors, such as surface area and complexity of the dwellings, the number of variables to be entered and the extent and the manner of the use of default values.[10] For countries with a short inspection time, this is related to a limitation of the number of variables (Belgium (Flanders), France) or is related to the frequent use of default values (Ireland, Spain).

Hourly rates

The rates applied in the Member States surveyed are difficult to compare. The rates are often dependent on local labour markets, training requirements and costs, and additional costs (such as certification and registration costs), which vary between Member States and sometimes between regions within Member States. However, it can be stated that the Netherlands' chosen approach limits prices in this respect: apart from VAT, independent experts are charged no additional registration costs, and admission requirements relating to previous education can be described as limited compared to the Member States surveyed, which reduces costs. Recommendations are also generated automatically by software, limiting time spent on analysis. On the other hand, certification costs, which are partly fixed and partly dependent on the number of certificates issued, need to be paid in the Netherlands. However, no information has been obtained on such costs in the other Member States.

Quality

Based on this study, it is difficult to determine whether energy performance certificates in Member States with higher prices provide a more accurate estimate of energy consumption in kWh per square metre per year. These higher prices are often linked to a large number of variables that need to be entered and/or limited use of default values, which increases the amount of time required by the independent expert. Whether this results in better value in terms of the price and quality of energy performance certificates is unclear: there is no unambiguous answer to the question of whether energy performance certificates based on more variables and fewer default values lead to a more accurate estimate of energy consumption in kWh per square metre per year. The study does show, however, that a large number of variables to be entered does not by definition ensure a more accurate or more reliable certificate; interviews reveal that the risk of errors is greater when there are more variables, sometimes even resulting in a lower-quality energy performance certificate. In addition, independent experts sometimes find results difficult to explain when there are many variables to be entered. Monitoring and compliance appear to play a limited role in the price level: strict and less strict monitoring occurs in both 'expensive' and 'inexpensive' Member States.

Expected price trends in the Netherlands

A sharp decline in hourly rates in the Netherlands is not likely in the coming years. As a rule, the Dutch economy is witnessing an increase in real wages. These wage rises usually also have an upwards effect on the price of energy performance certificates. Moreover, hourly rates are not currently high compared to countries with similar living standards. Finally, the labour shortage across the construction industry and for similar professions means that stiff competition on hourly rates is not to be expected.

There could, however, potentially be a reduction in time spent in the next few years. Growing familiarity with the NTA 8800 methodology is producing a learning effect among independent experts. Potential efficiency gains also lie in areas such as the gathering, use and re-use of information. Such developments could bring down energy performance certificate prices.

[10] A standard value assigned to a variable where the software user does not enter a value. The way in which default values are used varies between the different Member States (see Chapter 8).

Looking to the future, therefore, there are opportunities for price reductions, but these are expected to have a limited effect on the total amount. Without adapting the system and/or legal framework, for instance by reducing the number of variables required to determine the certificate, a significant fall in the average price level is not to be expected. As the level of knowledge and information among buyers grows, suppliers with non-standard prices will slowly but surely be squeezed out of the market. Consumer preferences in terms of level of service and degree of accuracy of the certificate will ultimately determine future price trends.

Recommendations

Limit prices by limiting time spent

The study revealed few 'quick wins'. Most countries surveyed have a similar system to the Netherlands and operate in the same way. With the NTA 8800, the Netherlands has a system with a relatively large number of variables to be entered. In view of this, the three-hour inspection and analysis time in the Netherlands can be described as limited compared to that in comparable Member States. Nevertheless, limiting the time spent on energy performance certificate inspections appears to be the most appropriate solution to limiting energy performance certificate prices for existing building stock whilst retaining the current system. The best way to do this would be by limiting the number of input parameters. Such an approach is possible within the degrees of freedom provided under EU regulations: the CEN standards are a recommendation, which allows deviation from the detailed inspection recommended therein.

Insight is needed into quality to determine a reasonable price

The extent to which a system with many variables (resulting in a higher price) is preferable to a simplified system at lower costs depends partly on the difference in quality: if a system that uses simplified methods offers almost identical results to a more cumbersome, time-consuming system, the former is preferable from an efficiency point of view. The question here is whether a method that requires a large number of parameters to be entered, filled by default values or otherwise, is a better predictor of building-related energy consumption than a method with fewer parameters. It is therefore advisable to gain a better insight into the added value of the current NTA 8800 method compared to a simplified method.

Digitalisation offers opportunities for the future

In Denmark, independent experts are not required to visit dwellings constructed in the last 25 years unless the dwelling has been modified. A large amount of information on such dwellings is recorded digitally, allowing certificates to be 'renewed' online. This type of approach achieves considerable cost savings. In the Netherlands, too, the digital recording of information on new homes can result in cost savings in the longer term. Recording data needed for remote energy performance certificate inspections and extensions reduces the number of independent expert visits, limiting costs.

Need for on-site independent expert to issue energy performance certificates for new buildings uncertain

A number of countries surveyed issue energy performance certificates for new buildings based on planning applications and construction drawings. In some countries, this certificate is valid for two years. After this period, a new certificate needs to be applied for in the event of a transaction. In the Netherlands, a provisional certificate must be applied for at the time of the planning application, and a final certificate must be issued following completion of a new house.

Designs and construction drawings are usually produced to a high level of detail. Under normal circumstances, an energy performance certificate based on drawings can be attributed a high degree of reliability. Deviations from the design could potentially occur during construction, however the impact of such deviations on the originally calculated energy performance certificate is uncertain. An analysis of the difference between pre-calculated, provisional energy performance certificates based on documents compared to the outcome of a final certificate following a visit can provide insight into whether there are major differences in outcomes.

If the differences in terms of the energy performance indicator are limited, there are grounds to reconsider the compulsory registration of a final certificate following completion. It is important to bear in mind here that a post-completion inspection is also required in the context of the forthcoming Quality Assurance (Building Sector) Act (*Wet kwaliteitsborging*), which means that the benefits are limited to avoiding the activities required to determine the energy performance certificate.

Reference

The full report ‘Prijspeiling en internationale vergelijking van het NTA 8800 energielabel’ (only in Dutch) and this English summary you can find at our page *Energielabel woningen* (under ‘Meer weten?’ at the bottom of the page).

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