

Case studies: Minimum energy performance standards for European buildings

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Introduction

Minimum energy performance standards can support a massive increase in the renovation rate needed for the European Union to meet its climate targets.

Minimum energy performance standards (MEPS) are regulations that require buildings to meet a minimum performance standard, set in terms of a carbon or energy rating, or minimum renovation measures. The design of the standard is flexible and can be adapted to local contexts and to deliver on local priorities. Compliance with the minimum standards is required at a specified deadline or at a certain moment in the natural life of the building. These “trigger points” include sale or building improvements. MEPS can apply to the whole building stock or focus on specific sectors, tenures, building types or sizes, or privately or publicly owned stock.

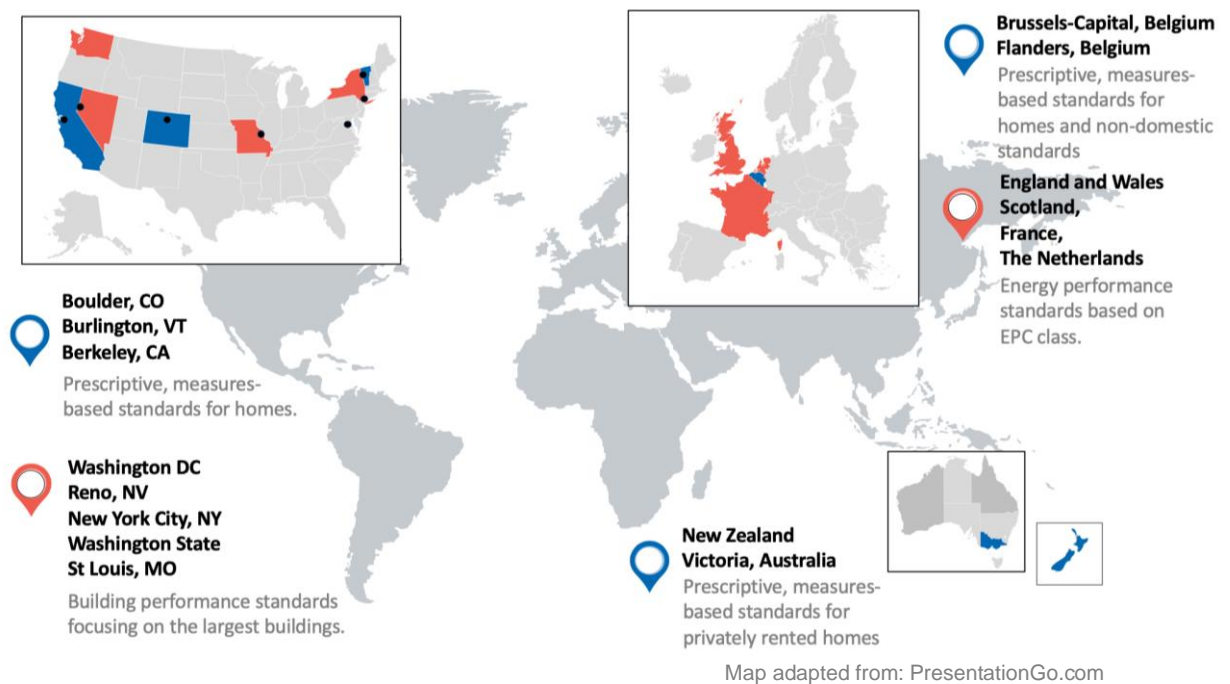
MEPS can help overcome the significant barriers that have hindered renovation to date, especially if introduced as part of a comprehensive renovation policy framework comprising funding, finance and incentives, technical and practical support, and measures to ensure the poorest are not directly or indirectly burdened.

This briefing presents short case studies from six European jurisdictions introducing MEPS.

Alongside these case studies, RAP has published *Filling the policy gap: Minimum energy performance standards for European buildings*.¹ This policy paper reviews worldwide examples of MEPS, explores their impacts and discusses the elements of an effective framework in which minimum standards should be introduced. Finally, it makes recommendations for introducing MEPS measures into European Union climate and energy policy.

The following map illustrates the minimum energy performance standards identified worldwide.² It also classifies the standards broadly into two types: prescriptive measures-based standards and energy or carbon performance standards.

Minimum energy performance standards worldwide



This briefing describes in more detail the European standards in Belgium (the regions of Flanders and Brussels-Capital), England and Wales, France, the Netherlands and Scotland.

¹ Sunderland, L., & Santini, M. (2020). *Filling the policy gap: Minimum energy performance standards for European buildings*. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/filling-the-policy-gap-minimum-energy-performance-standards-for-european-buildings/>

² Further evidence on all of the standards in the map can be found in Sunderland & Santini, 2020. See also Nadel, S., & Hinge, A. (2020). *Mandatory building performance standards: A key policy for achieving climate goals. ACEEE white paper*. American Council for an Energy-Efficient Economy. <https://www.aceee.org/white-paper/2020/06/mandatory-building-performance-standards-key-policy-achieving-climate-goals;> and Hinge, A. (2020). *International Review of Minimum Energy Standards for Rented Properties* [forthcoming].

Belgium, Flanders

Minimum insulation and glazing standards for homes and proposed renovation requirements for non-domestic buildings when sold.

Brief description of the standard

Flanders established a minimum requirement in 2015 for all homes to have roof insulation.³ Since 2015, rental homes without the minimum insulation began to accrue penalty points. Homes that had accrued 15 penalty points by 1 January 2020 can no longer be rented out. For owner-occupied homes, the accumulation of penalty points can lead to the property being declared ineligible for renting; however, the associated penalties do not apply if the home is a primary and sole residence. In effect, there is therefore no enforcement for homes outside the rental sector.

In 2019, the Flemish government introduced⁴ new laws on housing quality, relating to a broad range of health, safety and habitability aspects. The legislation included a new standard for glazing that came into effect on 1 January 2020.⁵ The glazing standard will also be enforced through a system of penalty points. By 2023, homes with single glazing will have accumulated enough penalties to prevent them from being rented. Under both standards, penalty points do not accrue for homes that already have good energy performance, defined by energy performance thresholds for different housing types.⁶

The minimum standards are enforced at the municipal level. Although a certificate of conformity can confirm that the dwelling meets the standard, in many municipalities this document is not a prerequisite for letting a dwelling. Alternatively, tenants whose homes do not meet the standard can start a so-called unsuitability procedure with the municipality. The municipal authority can then inspect the home and declare it unsuitable if it does not comply. Enforcement is only for rented homes; owner-occupiers can still sell their home if it does not meet the standard.

In addition to the measures-based standard for homes, the Flemish government coalition agreement for 2019 to 2024⁷ foresees introducing an obligation from 2021 that requires offices and public buildings to undergo an energy renovation within five years of purchase. At the time of writing, the details concerning how this standard will be implemented are still subject to approval by the government.

³ The insulation must provide a minimum thermal resistance of $R=0,75 \text{ M}^2\text{K/W}$.

⁴ Vlaamse Codex [Flemish Codex]. (2019, 23 May). *Besluit van de Vlaamse Regering betreffende de woningkwaliteitsbewaking* [Decision of the Flemish government regarding home quality control]. Flemish government. <https://codex.vlaanderen.be/Zoeken/Document.aspx?DID=1032181¶m=inhoud>

⁵ Irish Green Building Council. (2019). *Overcoming the split incentive barrier in the private rental market: International case studies*. https://www.igbc.ie/wp-content/uploads/2019/04/WP3_D1_Final-1.pdf

⁶ The thresholds are 600 kWh/m² for a free-standing house, 550 kWh/m² for a semi-terraced house, 450 kWh/m² for a terraced house and 400 kWh/m² for an apartment.

⁷ Flemish government. (2019). *Regeerakkoord van de Vlaamse Regering 2019-2024* [Coalition Agreement of the Flemish Government 2019-2024]. <https://www.vlaanderen.be/publicaties/regeerakkoord-van-de-vlaamse-regering-2019-2024>

Lead time and trajectory

The 2015 Renovation Pact sets out the long-term goal that existing buildings must reach an energy performance standard of 100 kWh/m² or an energy performance certificate (EPC) class A by 2050.⁸ Reaching the set objective would mean an overall improvement of the building performance between 65% and 85%.⁹

Caveats and exemptions

The rental home legislation does not include any exemptions, for example, for listed buildings, which has been credited with contributing to increasing awareness on energy efficiency.¹⁰

Enabling framework

A widespread communication campaign and energy and renovation public information points in municipalities supported the introduction of the measures and the required renovations. Financial support in the form of renovation grants — including a grant of €23 per square meter as an additional incentive for dwellings occupied by vulnerable tenants — and tax benefits also support renovation works.¹¹

Belgium, Brussels-Capital

Proposed incremental standard based on five, staged, minimum measures requirements for all buildings.

Brief description of the standard

The 2019 renovation strategy¹² for the Brussels-Capital region outlines a measures-based standard for domestic and non-domestic buildings, for which the regional government will introduce a regulatory framework in 2021.

The standard requires five measures to be installed in domestic buildings in stages, with enforcement dates between 2030 and 2050. This provides a staged route map to reach the target performance of 100 kWh/m² primary energy per year by 2050 (EPC class C+). The measures are specific to each building and are recommended in the EPC.

⁸ Flemish Energy Agency. (n.d.). *The energy targets for Flemish homes by 2050*. <https://www.energiesparen.be/energiedoelstellingen-tegen-2050>

⁹ Buildings Performance Institute Europe. (2017). *Factsheet: Belgium — Flanders*. iBRoad. http://bpie.eu/wp-content/uploads/2018/01/iBROAD_CountryFactsheet_BELGIUM-Flanders-2018.pdf

¹⁰ Irish Green Building Council, 2019.

¹¹ Irish Green Building Council, 2019.

¹² Regional Government of Brussels-Capital. (n.d.). *Stratégie de réduction de l'impact environnemental du bâti existant en région de Bruxelles-Capitale aux horizons 2030-2050* [Strategy to reduce the environmental impact of buildings in the Brussels-Capital Region by 2030-2050]. https://environnement.brussels/sites/default/files/user_files/strategie_reno_fr.pdf

The requirements foresee two levels of mandatory measures for multi-family buildings, one for the individual unit and another for measures required at the building level.

The regional government is developing an upgraded energy performance certificate (certificat PEB) and a renovation plan for this purpose. The renovation strategy also sets out that all buildings will be required to have an EPC by 2025, strengthening the existing EPC trigger points of sale or renovation. Upgraded EPC recommendations will include an outline of the measures required for the building to reach the 2050 target. Over time, there is an intention to add further building sustainability considerations to the EPC recommendations.

A new requirement makes further use of the trigger point of renovation and stipulates that from 2024 a renovation plan must be drawn up if an application for planning permission involving an architect is submitted. The renovation plan will include both a single set of solutions to achieve the 2050 performance target and a staged approach that avoids lock-in. It will also provide financial analysis of the options. For building owners undertaking works that do not require planning permission, support will be made available to help them draw up a similar renovation plan on a voluntary basis. Both the EPC and the renovation plan will stay with the building, passing between owners as part of the transaction.

For non-domestic buildings, a similar system of compulsory improvements will be put in place, setting out a pathway for these buildings to meet the target of energy neutrality by 2050.

Lead time and trajectory

It is expected that the regulations will be introduced in 2021. By 2030, regulations will require building owners to have installed the first of the five compulsory measures. The following four deadlines follow at five-year increments to 2050, by which time all recommended measures must be installed where possible.

Caveats and exemptions

This detail has not yet been defined.

Enabling framework

The framework of support in the Brussels-Capital region includes energy advice and information, and the improved EPC described above can be expected to provide information and help enable compliance with the regulation. Low-interest loans for lower-income households are also available, as are subsidies for renovation measures that vary according to income but on average can cover around 20% of eligible costs.¹³

¹³ Bruxelles Environnement. (2020). *Les Primes Énergie en 2020* [Energy premiums in 2020].

<https://environnement.brussels/thematiques/batiment-et-energie/primes-et-incitants/les-primes-energie-en-2020>

England and Wales: Private rented sector regulation

All privately rented buildings must undergo improvements to meet an energy performance certificate class E.

Brief description of the standard

The Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 require, as of 1 April 2018, that properties must not be let in a new tenancy, extension or renewal if they do not meet a minimum energy performance standard of EPC E.¹⁴ These regulations extended to *all* privately rented domestic properties from 1 April 2020, not just those undergoing a tenancy transaction, and will extend to all non-domestic privately rented properties from 1 April 2023.

Around 20% of English households and 13% of Welsh households live in privately rented properties.¹⁵ Fuel poverty¹⁶ and the impact of the worst performing homes on health were strong drivers for introduction of the regulation. Low-income and energy-poor households are over-represented in the private rented sector: Of English private sector tenants, 19% are fuel poor, compared to 8% in the owner occupier sector. In England, 35% of the fuel poor live in privately rented homes.¹⁷ In England and Wales, 60% of non-domestic buildings are rented, although rented buildings only represent 38% of non-domestic floorspace and approximately 35% of the UK energy consumption (excluding industrial processes).¹⁸

Lead time and trajectory

The Energy Act of 2011¹⁹ is the primary legislation that enabled governments in England and Wales, and separately in Scotland, to regulate for the minimum standards. This provided significant lead time of seven years before enforcement of the regulation began in 2018 in England and Wales. The legislation and regulations that introduced the minimum standard also introduced a 'soft' measure as a precursor, which afforded tenants the right, from 2016, to request 'reasonable' energy efficiency improvements, which their landlord could not deny.

¹⁴ UK government. (2015). *Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015*.

<https://www.legislation.gov.uk/ukdsi/2015/9780111128350/contents>

¹⁵ Office for National Statistics. (2019). *UK private rented sector: 2018*. UK government.

<https://www.ons.gov.uk/economy/inflationandpriceindices/articles/ukprivaterentedsector/2018>

¹⁶ In the UK the term 'fuel poverty' is used whereas 'energy poverty' is more commonly used across Europe.

¹⁷ Committee on Fuel Poverty. (2019, 31 May). Recommendations from the report on Enforcing the Enhancement of Energy Efficiency Regulations in the English Private Rented Sector (PRS). UK government.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/813586/CFP_recommendations_on_PRS_Enforcement_research_31_May_2019.pdf

¹⁸ Department for Business, Energy and Industrial Strategy. (2019). *The non-domestic private rented sector minimum energy efficiency standards: The future trajectory to 2030*. UK government.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839362/future-trajectory-non-dom-prs-regulations-consultation.pdf

¹⁹ UK government. (2011). *Energy Act 2011*. <http://www.legislation.gov.uk/ukpga/2011/16/part/1/chapter/4/enacted>

The regulation does not, however, contain a longer-term trajectory for either tightening efficiency standards or extending the standard into other tenures. It does require the government to review its operation and impact every five years. A public consultation in autumn of 2019 considered options to tighten the non-domestic standard, with the government preferred trajectory being a minimum EPC rating of B by 1 April 2030 — if achievable within a seven-year payback period.²⁰ No decision has been made on the outcome of this consultation.

Caveats and exemptions

The primary legislation applies the requirements only to properties with an EPC, leaving some classes of buildings out of the standard. Protected, historically significant buildings, places of worship, temporary buildings and low-energy-use industrial and agricultural buildings are exempted from the requirement to have an EPC. Creation of an EPC is triggered by change of ownership or tenancy, so properties that have not been subject to a transaction of this type since the EPC regulations were introduced fall outside the minimum standard regulation.

Houses of multiple occupation also often fall outside the minimum standard. This category refers to buildings in which individual rooms are let out separately to tenants who often share kitchen and bathroom facilities. An EPC is triggered for these buildings only when the whole property is let under a single tenancy or is sold, not when individual rooms are rented. Therefore, houses of multiple occupation that have not been sold or rented as an entire building in the last 10 years do not have an EPC and therefore are not subject to the minimum standard.²¹ This is significant given that houses of multiple occupancy often house low-income and vulnerable households, and assisting these households was one of the drivers for the introduction of the standard.

The regulations also list a number of other specific exemptions. A cost threshold of £3,500 (around €3,890) is in place for domestic landlords²² and a payback threshold of seven years for non-domestic landlords. All measures up to these thresholds must be installed. If the property still does not meet the class E standard, however, the landlord can apply for a ‘high cost’ exemption. The £3,500 cost cap for domestic properties is too low to support an effective policy, as the government calculates that 52% of obligated properties could not be improved to EPC class E within this cost cap.²³ Further exemptions are available if a landlord can prove that the efficiency works required would negatively impact the fabric structure of the building or reduce its market value by more than 5%. Tenants and other third parties also hold the right to withhold consent for works. Finally, in specific circumstances, new landlords may apply for a

²⁰ Department for Business, Energy and Industrial Strategy, 2019.

²¹ Department for Business, Energy and Industrial Strategy. (2020). The domestic private rented property standard. UK government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/824037/Domestic_Private_Rented_Property_Minimum_Standard_-_Landlord_Guidance.pdf

²² Department for Business, Energy and Industrial Strategy, 2020.

²³ Department for Business, Energy and Industrial Strategy. (2018). *Final stage impact assessment: Amending the Private Rented Sector Energy Efficiency Regulations*. UK government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/760313/IA_-_Energy_Efficiency_Private_Rented_Property_England.pdf

six-month compliance extension. Exemptions typically last for five years, after which a landlord would have to comply with the regulations or apply for a new exemption.

Local authorities are charged with enforcing the regulations for the domestic sector. For the non-domestic sector, the relevant 'weights and measures' authority, which is usually trading standards — also under local authority control — is the enforcement body. In the case of non-compliance, the regulations allow for penalties capped at £5,000 (€5,557) for domestic and £150,000 (€165,627) for non-domestic buildings.

Enabling framework

The MEPS was originally intended to be supported by the government's Green Deal Finance initiative, which was introduced in 2011 by the same primary legislation. Green Deal Finance was a pay-as-you-save mechanism that enabled a renovation loan to be connected to the property, which the occupant paid off through bill savings. The government's intention was that the availability of this finance mechanism would ensure that landlords could comply with the standard at no upfront cost. Green Deal Finance did not succeed,²⁴ and the remaining enabling framework is more limited.

Some funding is available for energy efficiency measures for low-income households through the energy efficiency obligation. However, for privately rented homes with EPC labels of F and G that are subject to the minimum standard, the EEO scheme allows only selected high-cost measures to be subsidised, such as solid wall insulation and renewable heating. Other measures are not permitted for F and G properties, as the government expects landlords to provide their tenants with working heating systems, alongside other basic energy efficiency features.²⁵ A small number of schemes under the local authority's purview also fund energy efficiency measures for low-income households, but coverage is not widespread.

Information about government-funded energy efficiency resources are provided for both domestic and commercial properties via national online platforms.

²⁴ Rosenow, J., & Eyre, N. (2016, November). A post mortem of the Green Deal: Austerity, energy efficiency, and failure in British energy policy. *Energy Research & Social Science*, 21. https://www.researchgate.net/publication/305409421_A_post_mortem_of_the_Green_Deal_Austerity_Energy_Efficiency_and_Failure_in_British_Energy_Policy

²⁵ Department for Business, Energy and Industrial Strategy, 2020.

France

Renovation requirements for energy performance certificate F and G class homes and staged energy performance standards for commercial buildings.

Description of the standard

The 2015 Energy Transition Law²⁶ sets the objective for France's building stock to be renovated in line with the Bâtiment Basse Consommation low energy building standard, or equivalent, by 2050.²⁷ France has introduced a number of measures in recent years to progress towards this goal.

For domestic buildings, the government has put a number of measures in place to phase out homes that are class F or G. Since 2016, the sale of social housing units that do not meet an EPC class E has been banned.²⁸ New legislation in 2019²⁹ introduced a cluster of requirements for the broader domestic stock. From 2021, landlords will only be allowed to pass on the renovation cost to the tenant through rent rises if the property is improved to at least an EPC E.³⁰ From 2023, there will be a ban on new rent agreements for the worst performing buildings, although 'worst performing' has yet to be defined.³¹ From 2028, the legislation requires class F and class G homes to be renovated; penalties for non-compliance will be defined in 2023.³² This requirement was originally established by the 2015 law, which stated that all private residential buildings in classes F and G³³ must be renovated by 2025. In 2019, policymakers postponed the target to 2028. In the meantime, information for potential tenants and buyers will be improved, and mandatory audits will take place from 2022 at the point of sale.

²⁶ Légifrance. (2015). Code de l'énergie [Energy code]. (Article L100-4, as modified by Law n° 2015-992 of 17 August 2015). French government. <https://www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT000023983208&idArticle=LEGIARTI000031063168&dateTexte=&categorieLien=id>

²⁷ The 'Bâtiment Basse Consommation' label has been the basis upon which the French 2012 code for new buildings (RT 2012) was drafted. The maximum level of energy consumption is 50 kWh/m²/year on average. This figure also varies across regions, altitude, building surface and use, and greenhouse gas emissions. Ministère de la Transition Écologique [Ministry of Ecological Transition]. (2020, 27 May). *Exigences réglementaires pour la construction des bâtiments* [Regulatory requirements for the construction of buildings]. French government. <https://www.ecologique-solidaire.gouv.fr/exigences-reglementaires-construction-des-batiments>

²⁸ Légifrance. (2015). Décret relatif aux normes de performance énergétique minimale des logements individuels faisant l'objet d'une vente par un organisme d'habitation à loyer modéré [Decree on minimum energy performance standards for single-family housing sold by a low-income housing organization]. (Decree n° 2015-1812 of 28 December 2015). French government. <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000031733962&categorieLien=id>

²⁹ Légifrance. (2019). Law relative à l'énergie et au climat [Law relating to energy and climate]. (Law n° 2019-1147 of 8 November 2019). French government. https://www.legifrance.gouv.fr/affichTexte.do?sessionId=E6EAE1FDE69B0117388E7420AD6D3CA3.tplgfr41s_2?categorieLien=id&cidTexte=JORFTEXT000039355955

³⁰ Légifrance, 2019, Article 19.

³¹ Légifrance, 2019, Article 17.

³² Légifrance, 2019, Article 22.

³³ With an energy consumption higher than 330 kWh/m²/year, see Légifrance, 2019, Article 5.

Staged standards, defined either as energy savings targets or minimum operational performance thresholds, were introduced for large commercial sector buildings through separate legislation in 2019.³⁴ Service sector buildings³⁵ of more than 1,000 m² will be required to reduce their final energy consumption by 40% in 2030, by 50% in 2040 and by 60% in 2050, compared to 2010. Alternatively, the building can comply with minimum operational energy performance standards, which are yet to be announced for each building type. Annual consumption data will be collected via an online platform and compliance certificates issued. Fines for non-compliance up to €7,500 will be enforced.

Lead time and trajectory

The Energy Transition Law was introduced in 2015 and set out a goal for the entire building stock to reach the Bâtiment Basse Consommation standard by 2050. In the 2019 law, France set the objective of reaching carbon neutrality by 2050, dividing greenhouse gas emissions by at least six by 2050, from a 1990 baseline. This law also establishes shorter-term renovation targets.

The lead time needed to put standards in place is the subject of discussions in France with a trade-off between ambition of the measure and speed of its introduction. The minimum standards measures were announced in 2015, but a number of implementing decrees are still missing. The definition of *passoires énergétiques* (i.e., energy-intensive buildings that leak heat) is still undecided.³⁶ This delay and the lack of clarity pose a risk that people will not take the measures seriously, and the potential to trigger early renovation work may be lost.

Caveats and exemptions

The framework foresees different exemptions related to the cost of renovation works and their payback period and also takes into account specific architectural constraints.

Enabling framework

The French system is traditionally based on a mix of tax incentives, subsidies and an energy efficiency obligation scheme. In 2019, the financial tools were revamped.³⁷ The tax incentive and

³⁴ Légifrance. (2018). Article 175. Law portant évolution du logement, de l'aménagement et du numérique [Law on the evolution of housing, development and digital]. (Law n° 2018-1021 of 23 November 2018)). French government.

<https://www.legifrance.gouv.fr/affichTexteArticle.do?cidTexte=JORFTEXT000037639478&idArticle=JORFARTI000037639678&categorieLien=cid>; and Légifrance. (2019). Décret relatif aux obligations d'actions de réduction de la consommation d'énergie finale dans des bâtiments à usage tertiaire [Decree relating to the obligations of actions to reduce final energy consumption in buildings for tertiary use]. (Decree n° 2019-771 of 23 July 2019)). French government.

<https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000038812251&categorieLien=id>

³⁵ For example, real estate, shops and private and public services.

³⁶ More information, see: Renovons. (2020, 5 March). 'Ordonnance Passoire' — Contribution de l'Initiative Renovons! ['Colander ordinance' — Contribution of the Renovons Initiative!]. <http://renovons.org/Ordonnance-Passoire-Contribution-de-l-Initiative-Renovons>

³⁷ A national renovation strategy was developed, feeding into the 2020 budget discussions. See: Ministère de la Cohésion des Territoires et des Relations avec les Collectivités Territoriales [Ministry of Territorial Cohesion and Relations with Local Authorities]. (2019, 22 July). *Plan de rénovation énergétique des bâtiments* [Energy renovation for buildings]. French government. <https://www.cohesion-territoires.gouv.fr/plan-de-renovation-energetique-des-batiments>

the different subsidies are being merged into a single subsidy, MaPrimeRénov.³⁸ The subsidy regime was modified to focus support on low-income households, but stakeholders have criticised the reduction of funding available and the lack of consistency³⁹ of the support regime. Other initiatives, such as SARE and FAIRE, include the creation of a public service providing information and advice on housing energy renovations.⁴⁰

The Netherlands

All office buildings must be a minimum of energy performance certificate class C by 2023.

Brief description of the standard

From 1 January 2023, all office buildings in the Netherlands will be required to have a minimum energy performance certificate of C.

The requirement was introduced through an amendment, published on 2 November 2018, to the 2012 Building Decree.⁴¹ If an office building does not meet the standard — defined in the regulation as being equal to an energy efficiency index of at least 1.3 — by 1 January 2023, it may not be used as an office building. Office buildings that do not yet have an EPC will need to register an EPC of A, B or C to comply with the regulation.

A nominated ‘competent authority,’ which is usually the local municipality, will enforce the standard. The duty to comply can lie with either the tenant or the building owner. Failure to comply will be addressed through administrative enforcement measures, such as periodic penalty payments, a fine or closure of the office building.⁴²

More than half of the offices in the Netherlands will need to take action to meet this upcoming commitment. These actions may include registering an EPC for those that do not currently have an EPC, undertaking works to bring the building up to the required standard or both. There are around 96,000 offices in the Netherlands, 62,000 of which will need to comply with the

³⁸ For more information, see: (2019, 26 September). Ministère de la Transition Écologique [Ministry of Ecological Transition]. (2019, 26 September). *Aides à la rénovation énergétique des logements: une nouvelle aide plus simple, plus juste et plus efficace* [Aid for the energy renovation of housing: A new aid that is simpler, fairer and more efficient]. French government. <https://www.ecologie-solidaire.gouv.fr/aides-renovation-energetique-des-logements-nouvelle-aide-plus-simple-plus-juste-et-plus-efficace>; and French government. (2020, 8 January). *Lancement de MaPrimeRénov’: une aide pour la rénovation énergétique de votre logement* [Launch of MaPrimeRénov’: Aid for the energy renovation of your home]. <https://www.gouvernement.fr/lancement-de-maprimerenov-une-aide-pour-la-renovation-energetique-de-votre-logement>

³⁹ CLER Réseau pour la Transition Énergétique [CLER Network for energy transition]. (2020, 5 March). *Rénovation énergétique: une vision stratégique qui fait cruellement défaut et des choix méthodologiques contestables* [Energy renovation: A strategic vision that is sorely lacking and questionable methodological choices]. <https://cler.org/renovation-energetique-de-la-france-une-vision-strategique-qui-fait-cruellement-defaut-et-des-choix-methodologiques-contestables/>

⁴⁰ FAIRE. (n.d.) *FAIRE: Tout pour ma rénov.* French government. <https://www.faire.gouv.fr/>.

⁴¹ Netherlands Enterprise Agency. (2020a). *Energie label C kantoren — de stand van zaken* [Energy label C offices — the state of affairs]. RVO (Rijksdienst voor Ondernemend Nederland). <https://www.rvo.nl/actueel/nieuws/energielabel-c-kantoren-de-stand-van-zaken>

⁴² De Snoo, A., Lameijer, J., & Haverkamp, E. (2019). *Energy performance regulations and investing in Dutch real estate*. DLA Piper. <https://www.lexology.com/library/detail.aspx?q=dc647d90-b78c-4c89-b94e-6753a33291d1>

standard. Of these, 56% do not yet have an EPC. Of the buildings that do have an EPC, around three-quarters, or 20,500, have a class A, B or C, while 7,000 have a label of D or poorer. The latter will have to undertake works to comply.⁴³

The government did consider inclusion of a tighter target for class A by 2030 but did not introduce it in 2018. Given this signal from the government, buildings sector stakeholders do have an expectation that standards will be tightened further.⁴⁴

A 2016 study⁴⁵ calculated different options for setting the standard at either EPC class A, B or C. It also considered a phased combination of a class C requirement in 2023 and class A in 2030. The class C requirement was calculated to have a cumulative cost of €860 million in 2023, with payback times for investments averaging between three and six and a half years. For reaching class A, the payback period varies from three and a half years to thirteen and a half years.

Lead time and trajectory

The government's announcement of the standard in 2018 gave property owners more than four years to prepare for compliance.⁴⁶ A more general requirement for operators of larger commercial properties to take up energy efficiency measures had already laid the foundation for introducing the minimum standard. The Dutch Environmental Management Law, Decree on Activities, introduced the 'energy savings obligation',⁴⁷ which requires that commercial establishments using more than 50,000 kWh of electricity or 25,000 m³ of natural gas a year take up all energy savings measures that pay back within five years. The law introduced the requirement for energy efficiency measures to be considered in 1993 and further strengthened the requirement to 'all measures within a five-year payback period' in 2008. A list of recognised energy savings measures that pay back within the specified period for each sector is published on InfoMil, a government knowledge centre on environmental legislation and policy.⁴⁸ Offices are required to comply with both the class C regulation and the energy savings obligation.

⁴³ Netherlands Enterprise Agency, 2020a.

⁴⁴ van Niekerken, M. (2019) *What investors need to know about the upcoming Dutch building regulations* Savills. <https://www.savills.co.uk/blog/article/275362/commercial-property/what-investors-need-to-know-about-the-upcoming-dutch-building-regulations.aspx>; and Dutch Green Building Council. (2018). *Creating an energy efficient mortgage for Europe: Building assessment briefing; The Netherlands*. EeMAP. https://eemap.energyefficientmortgages.eu/wp-content/uploads/2018/04/EeMAP_Building_Assessment_Briefing_NETHERLANDS.pdf

⁴⁵ Economisch Instituut voor de Bouw [Economic Institute of Construction]. (2016). *Verplicht energielabel voor kantoren* [Mandatory energy label for offices]. https://www.eib.nl/pdf/verplicht_energielabel_voor_%20kantoren.pdf

⁴⁶ <http://www.bouwbesluitinfo.nl/pages/posts/wijziging-bouwbesluit-2012-per-3-november-2018-109.php>

⁴⁷ Netherlands Enterprise Agency. (2020b). *Energiebesparingsplicht* [Energy saving obligation]. RVO. <https://www.rvo.nl/onderwerpen/duurzaam-ondernemen/energie-besparen/informatieplicht-energiebesparing/energiebesparingsplicht>; and Kenniscentrum InfoMil. (2020). *Erkende maatregelen* [Approved measures]. Ministerie van Infrastructuur en Waterstaat [Ministry of Infrastructure and Water Management]. <https://www.infomil.nl/onderwerpen/duurzaamheid-energie/energiebesparing/handreiking-erkende-maatregelen-energiebesparing/erkende-maatregelen/>

⁴⁸ Kenniscentrum InfoMil. (2020). *Energiebesparing* [Energy savings]. Rijkswaterstaat: Ministerie van Infrastructuur en Waterstaat [Rijkswaterstaat Ministry of Infrastructure and Water Management]. <https://www.infomil.nl/onderwerpen/duurzaamheid-energie/energiebesparing/>

Caveats and exemptions

The EPC C regulations for office buildings include a cost threshold that stipulates that measures to meet the standard should pay back within 10 years. A landlord is required to install measures up to this payback threshold but not exceeding it, even if class C is not reached.

The standard does not apply to buildings in which less than 50% is used for offices, excluding ancillary functions, or buildings in which only a floor area of less than 100 m² is used for offices. Exemptions are also in place for historic, listed buildings, those that are only in temporary use as offices, or are due to be demolished or change use, and those that do not use energy to regulate indoor climate.

Enabling framework

Netherlands Enterprise Agency or RVO (Rijksdienst voor Ondernemend Nederland) offers technical information to support compliance with the standard. It provides an online tool⁴⁹ that enables building owners to explore investment costs, annual savings, payback times and carbon savings for different options to meet the standard. The government also has an approved register of energy advisors. Building owners can receive a grant for the cost of this advice if they go on to install measures.

The Dutch government also provides tax incentives to partially offset the costs of energy efficiency measures. For example, the Energy Investment Allowance permits companies to deduct 45% of advanced energy saving investment costs from taxable profit.⁵⁰ The environmental investment allowance is available for entrepreneurs to make tax-deductible investments in a broader range of environmental measures.⁵¹ Installation of solar thermal and heat pumps is partially subsidised through the Renewable Energy Investment Allowance.⁵² Finally, green loans with preferential interest rates are also available for commercial buildings; these are often coupled with support services, such as free energy consultations.⁵³

⁴⁹ Energieslag. (2017). Snel inzicht in besparingsopties met de Energiebesparingsverkenner kantoren [Quick insight into savings options with the Energy Savings Explorer offices]. RVO. <https://energieslag.rvo.nl/news/view/51138486/snel-inzicht-in-besparingsopties-met-de-energiebesparingsverkenner-kantoren>

⁵⁰ Netherlands Enterprise Agency. (n.d.) *Energie-investeringsaftrek (EIA) voor ondernemers* [Energy investment allowance (EIA) for entrepreneurs]. RVO. <https://www.rvo.nl/subsidie-en-financieringswijzer/energie-investeringsaftrek-eia>

⁵¹ Netherlands Enterprise Agency. (n.d.) *MIA en Vamil*. RVO. <https://www.rvo.nl/subsidie-en-financieringswijzer/mia-vamil>

⁵² Netherlands Enterprise Agency. (n.d.) *Sustainable energy investment subsidy scheme*. Business.gov.nl. <https://business.gov.nl/subsidy/sustainable-energy-investment-subsidy-isde/>

⁵³ Dutch Green Building Council, 2018.

Scotland

All privately rented homes must undergo improvements to meet an energy performance certificate class E in 2022 and D in 2025.

Brief description of the standard

The Energy Efficiency (Private Rented Property) (Scotland) Regulations 2020⁵⁴ set out a minimum energy efficiency standard for domestic properties. The regulations establish that properties being let under new tenancies must meet an EPC standard of E, or register an exemption, from 1 October 2020. The regulations were due to come into force in April 2020, but enforcement has been delayed due to the COVID-19 crisis.⁵⁵ The standard will be extended to *all* domestic privately rented properties from 1 April 2022. New tenancies from 1 April 2022 will need to meet a higher standard of D, which will be extended to all tenancies, new and existing, from 1 April 2025.⁵⁶

Privately rented homes made up 15.5% of Scottish housing in 2018, and homes in this sector are in a worse state of repair than owner-occupied or social sector homes.⁵⁷

Lead time and trajectory

The primary legislation that enabled the Scottish government to take these powers is the same 2011 legislation that enabled the regulations in England and Wales.⁵⁸ The Scottish regulation differs from that in England and Wales in that it includes incremental tightening of the standard from EPC class E as of 2020 to class D from 2022.

The regulation sits within a larger framework of the Energy Efficient Scotland roadmap (2018),⁵⁹ a 20-year government programme containing a set of actions aimed at making Scotland's existing buildings near zero carbon wherever feasible by 2050. The roadmap includes interim goals for all Scottish homes to achieve an EPC C by 2040, with private rented sector homes targeted to achieve EPC C by the earlier date of 2030.

⁵⁴ Scottish government. (2020). Energy Efficiency (Private Rented Property) (Scotland) Regulations 2020.

<http://www.legislation.gov.uk/sdsi/2020/9780111043912>

⁵⁵ Stewart, K. (2020, 26 March). Letter to James Dornan, MSP, convener, Local Government and Communities Committee, Scottish Parliament. https://www.parliament.scot/S5_Local_Gov/Letter_to_LGCC_Convener_-_Energy_Efficiency_-_26_March_2020.pdf

⁵⁶ Scottish government. (2019a). The Energy Efficiency (Private Rented Property) (Scotland) Regulations 2019: Draft guidance. <https://www.gov.scot/publications/energy-efficiency-private-rented-property-scotland-regulations-2019-guidance/pages/1/>

⁵⁷ Chartered Institute of Housing, Scotland. (2019). *Homes not houses: Housing and the PRS*.

<http://www.cih.org/resources/PDF/Scotland%20Policy%20Pdfs/Private%20Rented%20Sector/Housing%20and%20the%20private%20rented%20sector%20Feb20.pdf>

⁵⁸ UK government. (2011). *Energy Act 2011*. <http://www.legislation.gov.uk/ukpga/2011/16/part/1/chapter/4/enacted>

⁵⁹ Scottish government. (2018). *Energy efficiency Scotland: Routemap*. <https://www.gov.scot/publications/energy-efficient-scotland-route-map/>

In December 2019, the Scottish government released a public consultation⁶⁰ in which it sets out its proposal to extend the minimum standard to owner-occupied homes. From 2024, it proposes that owner-occupied homes will need to meet an EPC C standard, where technically feasible and cost effective, at the trigger points of sale and possibly major renovation. The consultation proposes that the obligation to improve the property can be transferred at the sale from the seller to the buyer. The buyer would be required to bring the property up to the standard within six months, evidenced through a new EPC, and the cost of renovation is expected to be reflected in the purchase price. Based just on the trigger point of sale, this proposed standard is calculated to trigger renovations in 20% of the stock that is currently below an EPC C within five years and 36% within 10 years, based on current turnover rates.

Caveats and exemptions

Similar to the regulation in England and Wales, the standard for privately rented homes only applies to properties that have an EPC. Therefore, properties that are exempted from the requirement for an EPC, or for which an EPC has not been triggered, are not covered. Unlike in England and Wales, individual rooms in a house of multiple occupation⁶¹ are required to have an EPC when let in Scotland, so they are not exempt from the standard.

A cost cap is in place similar to England and Wales but at a higher level. Works up to the cost of £5,000 (€5,557) must be undertaken, but if the standard has not been reached, an exemption can be sought. The cost cap applies for works towards each of the standards — EPC E and EPC D — separately, with a cumulative total of £10,000 (€11,114). All works up to this cost cap must be undertaken before an exemption can be sought.⁶²

The regulations also allow for a landscape of further exemptions similar to that in England and Wales, intended to avoid unintended consequences like inappropriate works or devaluation of the asset. The Scottish regulations include a specific exemption where a protected species is present or where works would disturb a protected species. Exemptions are typically in effect for five years, after which a landlord would have to comply with the regulations or apply for a new exemption.

Enabling framework

Scotland has a strong framework of advisory and funding and finance support for energy efficiency and renewable energy in homes. Home Energy Scotland is a national service that provides free advice to all. Interest-free loans of up to £38,500 (€42,789) are available for homeowners, and a government scheme to pilot equity release loans finishes this year. Government grants are also available to low-income or fuel-poor households for energy

⁶⁰ Scottish government. (2019b). *Energy Efficient Scotland: Improving energy efficiency in owner occupied homes*.

<https://consult.gov.scot/housing-and-social-justice/energy-efficient-scotland-owner-occupier-proposals/>

⁶¹ Houses of multiple occupation are buildings in which individual rooms are let out separately to tenants who often share kitchen and bathroom facilities.

⁶² Scottish government, 2019a.

efficiency and heating. Area-based schemes run by local authorities identify hard-to-reach households and hard-to-treat properties, providing measures at little or no cost.⁶³

The government consulted on further enabling framework measures — to improve customer protections, the EPC assessment process and quality in the energy efficiency and renovation supply chain — as part of the 2019 proposals to extend the minimum standard to owner-occupied homes.⁶⁴

⁶³ Scottish government, 2019b.

⁶⁴ Scottish government, 2019b.



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