

Minimum energy performance standards: A tool for building renovation in Spain

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Summary

Minimum energy performance standards can accelerate the renovation of Spanish buildings, particularly homes, ensuring efficient use of resources and reducing energy poverty.

Only 0.2% of the Spanish buildings are renovated each year.¹ As the building sector is responsible for 30% of energy consumption and 40% of greenhouse gas emissions, the renovation rate must rise considerably this decade to deliver on existing targets and for Spain to play its part in meeting the new Fit for 55 European climate targets.

Responding to the urgent need to decarbonise buildings across Europe, the European Commission proposes to introduce minimum energy performance standards (MEPS) through a revision of the Energy Performance of Buildings Directive this year.²

In a workshop hosted by Ecodes in May 2021, Spanish stakeholders began considering how to implement this policy innovation most advantageously in Spain. They find MEPS can be effective in all sectors of the stock, but are particularly relevant for the housing sector. Importantly, MEPS can align the interests of multiple stakeholders in multi-family buildings, which make up two-thirds of Spanish homes. Although housing is a priority sector for MEPS, the sector may need a longer lead time before enforcement. Public buildings and offices could be brought under standards earlier, contributing important energy and carbon savings early this decade. While energy

¹ Government of Spain. (2021). *IDAE y el CSCAE presentan una guía para la gestión de ayudas a la rehabilitación energética de edificios* [Institute for Diversification and Saving of Energy and the Higher Council of Architectural Societies of Spain present a guide for managing aid for energy renovation in buildings]. <https://www.miteco.gob.es/es/prensa/ultimas-noticias/idae-y-el-cscae-presentan-una-qu%C3%ADa-para-la-gesti%C3%B3n-de-ayudas-a-la-rehabilitaci%C3%B3n-energ%C3%A9tica-de-edificios/tcm:30-523707>

² European Commission. (2020). *A renovation wave for Europe – greening our buildings, creating jobs, improving lives*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1603122220757&uri=CELEX:52020DC0662>

performance should be used as the primary metric to drive demand reduction, complementary measures should be considered to ensure heat decarbonisation. To support this role, the energy performance certificate (EPC) must be strengthened, and its coverage increased.

MEPS are not introduced in isolation. A comprehensive and stable framework of incentives, funding and finance made available through local one-stop shops is needed, along with an extended regime of building inspections to ensure compliance with MEPS and impact of the policy. Nationally, incentives for renovation must be better integrated into wider tax and housing policy.

Renovation of Spain's buildings

Around 30% of Spain's energy consumption stems from the buildings sector. The Long-Term Renovation Strategy envisages a 15.7% reduction in total energy use between 2020 and 2030, a further 15.0% in the next decade, and 12.5% between 2040 and 2050.³ The plan also stipulates that Spain lower CO₂ emissions by 34.7% compared to 1990 levels by 2030, but this target falls short of the European Commission's new Fit for 55 climate target to reduce emissions by 55% in 2030. According to our calculations, the gap is around 58.5 million tonnes of CO₂ equivalent. With the building sector responsible for 40% of national emissions, decarbonisation is crucial and challenging.

Despite this urgency and the wide availability of funding and incentives for building improvements, renovations tackle only about 25,000 primary residences in Spain each year. This is less than 0.15% of the total stock.⁴

To exacerbate matters, the energy performance of Spanish housing is also low – 81.5% of EPCs are class 'E' or lower. Of the existing primary residences, 51% were built before 1979, when the government introduced basic thermal performance construction standards. 16.7% of households have energy expenditures disproportionate to their income and 7.6% of the population is unable to maintain their homes at a suitable temperature during winter.⁵ Renovating 1,200,000 homes in the next decade would save 7,500 deaths from cold and markedly improve the health of 180,000 people.⁶

There are several reasons for the lack of renovation. Currently, 65% of the population lives in multi-family buildings, in which the whole community of owners must reach an agreement to undertake building-level renovations. This adds time and complexity. Renovation is hindered by the conflict between landlord and tenant, as works provide no return on investment for landlords unless rents are increased, which would threaten housing affordability and can lead to gentrification. People living in the worst-performing buildings often have the fewest resources to invest in renovations. Lastly,

³ Spanish Ministry for the Ecological Transition and the Demographic Challenge. (2020). *Estrategia a largo plazo para una economía española moderna, competitiva y climáticamente neutra en 2050* [Spanish long-term strategy for a modern, competitive and climatically neutral economy in 2050]. https://www.miteco.gob.es/es/prensa/documentoelp_tcm30-516109.pdf

⁴ Spanish Ministry of Transport, Mobility and Urban Agenda. (2020). *Actualización 2020 de la estrategia a largo plazo para la rehabilitación energética en el sector de la edificación en España* [2020 update of Spanish national long-term renovation strategy]. https://www.mitma.gob.es/recursos_mfom/paginabasica/recursos/es_ltrs_2020.pdf

⁵ Spanish Ministry for the Ecological Transition and the Demographic Challenge. (2020). *MITECO presenta los indicadores de pobreza energética de 2019* [MITECO presents the energy poverty indicators for the year 2019]. <https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/transicion-ecologica/Paginas/2020/121120-indicadores.aspx>

⁶ Ortiz, J., & Salom, J. (2016). *Estimación del efecto de la rehabilitación energética en la salud de las personas* [Estimating the effect of energy renovations on citizens' health]. <http://www.lacasaqueahorra.org/documentos/estimacionEfectoRehabilitacionSalud.pdf>

most residential renovation policies or incentives operate at municipal or regional level, making replicating and scaling efforts nationally more difficult.

In a welcome response, the new Climate Change and Energy Transition Law, passed in May, promotes building renovations, particularly for those inhabited by vulnerable people. This law commits the government to developing a Home and Urban Renovation Plan to improve the stock. As this briefing illustrates, the introduction of MEPS in Spain could contribute significantly to delivering this Plan.

What are MEPS?

MEPS require buildings to meet a minimum performance standard by a specified compliance deadline or ‘trigger point’ in the life of the building, for example sale or rent. MEPS can apply to the entire building stock or to specific sectors, tenures, building types or sizes, or to privately or publicly owned stock.

Jurisdictions across the world have adopted MEPS. The leading European examples, a summary of which is included at the end of this briefing, use the following models:

- **Single standard:** In the Netherlands, offices must be EPC ‘C’ by 2023. In France, private housing must be EPC ‘E’ by 2028.
- **Progressive standard:** In Scotland, rented homes must rate EPC ‘E’ in 2021 and EPC ‘D’ in 2025. In France, non-domestic buildings must make progressive energy savings of 40% by 2030, 50% by 2040 and 60% by 2050.
- **Deep renovation standard:** The French Citizens Convention on Climate proposed that buildings in the worst EPC classes ‘F’ and ‘G’ must be ‘B’ standard by 2030 and ‘D’ and ‘E’ buildings must be EPC ‘B’ by 2040. This standard has not been introduced into law.

The examples reveal the potential of this policy innovation. MEPS can improve performance across the targeted stock: The Dutch social housing stock is on track to meet the ambitious EPC ‘B’ standard this year, set by a voluntary MEPS agreement with the government.⁷

High compliance levels can be achieved if the right enforcement framework is in place. Boulder, Colorado, achieved nearly 100% compliance with the standard for rented housing by the compliance deadline.⁸ MEPS can also create impact before enforcement. The policy-signalling effect on the value chain and markets has been illustrated in the Netherlands, where major banks aligned their finance offerings to help existing clients meet the EPC ‘C’ standard for offices early. Banks also require new assets to comply early and have extended requirements to other sectors.⁹

When introduced as part of a comprehensive renovation policy framework, MEPS can help overcome the significant barriers that hinder renovation. This framework comprises funding, finance and incentives, technical and practical support, and

⁷ Aedes. (2019). *Betere prestaties & grote uitdagingen: Repportage Aedes-benchmark 2019* [Better performance & big challenges: Report Aedes benchmark 2019]. https://dkwwg750av2j6.cloudfront.net/m/620ffd480af237f1/original/Aedes-benchmark_2019_online.pdf

⁸ Petersen, A., & Lalit, R. (2018). *Better Rentals, Better City: Policies to Improve Your City’s Rental Housing Energy Performance*. Rocky Mountain Institute. http://rmi.org/wp-content/uploads/2018/05/Better-Rentals-Better-City_Final3.pdf

⁹ 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/>

measures to protect housing affordability. MEPS can signal the decarbonisation destination for the whole stock and individual buildings within it, helping align demand and supply chains and providing space for business and social innovation. This policy tool can also drive take up of existing funding, finance and incentives, improving the efficiency of existing renovation programmes. If coupled with renovation support, MEPS can improve living conditions for the poorest because they address the worst-performing buildings first.

Introducing MEPS in Spain

On 25 May 2021, Ecodes hosted a workshop at which environmental, social, financial and academic sector stakeholders discussed the introduction of MEPS in Spain. Their findings are summarised here.

Initiating this conversation proved important, as stakeholders identified a range of benefits that MEPS offer. At the national and policy level, the framework of MEPS provides a clear decarbonisation objective and roadmap for the building stock that can accelerate managed renovation in line with stated priorities. Within this structure, the relevant entities can monitor progress, and efficiently distribute resources and incentives. Efficient use of resources will be essential given the scale of the renovation challenge. At the local and citizen level, MEPS can focus public attention on renovation, energy efficiency and the benefits of thermal comfort. The goal is for efficiency and decarbonisation to become key decision-making criteria for all types of building work, alongside function and aesthetics. Beyond decarbonisation, the participants identified the potential of MEPS to increase urban renewal, reduce energy poverty and improve quality of life and health outcomes across the population.

When discussing potential risks associated with the introduction of MEPS, stakeholders mainly identified threats that would limit impact. Ambitious standards can capture the efficiency that comes with scale of renovations, but lack of ambition in the design or lack of coherence between policy objectives and the standard design will hinder impact. Long-term political commitment is essential to ensure efficacy. A strong framework of measures to enable renovation, particularly for those on low incomes, is essential to ensure the acceptability and inclusivity of MEPS. Enforcement, sanctions, controls and monitoring will also be important to ensure MEPS are part of a regulatory framework with tangible transformative power.

Reflections on the design of MEPS for Spain

Stakeholders turned their attention to the specifics of MEPS design. They focussed on the three essential design elements of all MEPS across the world: the buildings targeted, the standard to be met and metric used to define it, and the date or trigger points at which compliance is required.

Priority building sectors

Stakeholders reported that MEPS can be effective to reduce greenhouse gas emissions in all sectors of the building stock. This assessment is supported by international experience, as MEPS have been introduced for all building types, from owner-occupied

homes – for example, in France and as proposed in Scotland – to large commercial buildings predominantly in cities, as in the United States.¹⁰

The workshop identified particular relevance for owner-occupied housing, multi-family buildings and urban stocks. Housing is seen as a sector in need of urgent policy intervention given very low renovation rates. The predominance of multi-family buildings in the domestic stock and the need to coordinate communities of owners is a challenge specific to renovation works in Spain. In a 2018 report, the European Commission Joint Research Centre highlighted the importance of MEPS in aligning the interests of the numerous stakeholders in multi-family buildings – the owners, occupiers and owners’ associations – to overcome barriers to renovation.¹¹ Alongside the introduction of MEPS, the report recommends development of financing that is suitable for shared works, such as façade insulation, and can be adapted to the different economic and tenure situations of individual units.

Standard and metric

Workshop participants concluded that energy performance should be the primary metric to define a MEPS. This metric would prioritise measures to reduce energy demand and ensure correct sizing of heating systems. Carbon emissions should be a complementary metric. Stakeholders also weighed the benefits of a thermal wellbeing metric as a more communicable to owners and occupiers than technical metrics.

The existing EPC could be a useful tool to define and communicate the energy performance standard. This is in line with the majority of other European examples that use the EPC. As most national EPCs are based on energy performance, and are therefore more effective at driving demand reduction, parallel policy measures like boiler phase-outs can incentivise fuel decarbonisation. Alternatively, the EPC can be adjusted to better reflect carbon performance. France has recently made such adjustments – the thresholds for EPC classes will now be calculated based on two factors: primary energy and greenhouse gas emissions, creating ‘double thresholds’ for each energy class. A building is classified according to its worst performance regarding primary energy or greenhouse gases.¹²

For the Spanish EPC to be suitable for its new role as a compliance tool, the quality of EPC assessments must be improved. Around 13% of Spanish homes currently have an EPC, so coverage will need to swiftly increase. In the Netherlands, office building owners are required to lodge a compliant ‘A’ to ‘C’ class EPC before the MEPS deadline in 2023, thereby using the MEPS regulation itself to expand EPC coverage. Stakeholders proposed that some level of harmonisation of EPCs across the EU would be valuable. The European Commission has foreseen this need to improve the EPC framework as part of the revisions to the EPBD this year. It has consulted stakeholders on the level of harmonisation and methods needed to achieve comparability in June.¹³

¹⁰ Sunderland & Santini, 2020.

¹¹ Economidou, M. (2018). *Energy efficiency upgrades in multi-owner residential buildings: Review of governance and legal issues in 7 EU Member States*. European Commission Joint Research Centre. <https://publications.jrc.ec.europa.eu/repository/handle/JRC110289>

¹² Ministry of Ecological Transition. (2021). *Le nouveau diagnostic de performance énergétique [The new energy performance metrics]*. https://www.ecologie.gouv.fr/sites/default/files/2021.02.15_ew_dp_dpe.pdf

¹³ European Commission. (2021, 30 March). *Energy efficiency – Revision of the Energy Performance of Buildings Directive [Public consultation]*. https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12910-Revision-of-the-Energy-Performance-of-Buildings-Directive-2010-31-EU/public-consultation_en

Compliance dates and timeline

Well-designed MEPS are introduced with a trajectory of compliance dates to raise ambition and renovation rates over time. This trajectory can increase ambition in two ways: by increasing the standard over time, as does the Scottish standard for rented homes, which was introduced at EPC 'E' and rises to EPC 'D' by 2025; or by bringing additional building sectors under progressive or deep renovation standards.

Workshop attendants highlighted priority sectors to be brought under standards earlier. Public buildings and private offices could be expected to renovate earlier, whereas homes, in particular multi-family buildings, may need longer lead times before compliance dates. This is an approach taken by the Scottish government which has proposed a longer lead time for multi-family buildings to comply with standards. Multi-family buildings will be given until the period from 2040 to 2045 to meet proposed Scottish standards that, for other buildings, will require an energy performance standards of EPC 'C' to be met by 2035 and zero-emissions heating and cooling systems to be installed by 2045.¹⁴

The workshop considered the relative benefits of setting out a progressive schedule of standards for each building sector that increase over time or an ambitious standard that requires a building to undergo one deep renovation. Progressive standards make the final deep renovation destination for each building clear to the building owner but allow works to be undertaken gradually, as economic resources allow. A single ambitious standard holds significant benefits for multi-family buildings, where communities of building owners may be disengaged, and significant coordination is required to undertake renovations. For these works, achieving a deep renovation standard in one go may be practically more efficient and effective. To capture the benefits of both types of standards, two routes to compliance could be explored.

Stakeholders identified the risk of locking in suboptimal energy savings through phased standards. They recommended that the Building Renovation Passport, which sets out a pathway of single or staged renovations to full decarbonisation, or an intervention menu as proposed in the Spanish Long-Term Renovation Strategy, could help to avoid suboptimal investments and ensure renovations are carried out with full decarbonisation in mind.¹⁵

Integration of MEPS into a complete renovation framework

Stakeholders recognised the importance of comprehensive measures to enable renovations – including timely, coherent and motivating communication of the standard, adequate and suitable funding, and renovation information – to ensure the acceptability and inclusivity of MEPS. The economic ability of all building owners, in particular the most vulnerable, to undertake the necessary renovations requires careful consideration. The Scottish framework of support to households is a good example of this provision. Scottish households receive support for renovations through a framework including nationally available advice provision, area-based renovation schemes that include outreach to rural communities and disadvantaged households, government-backed loans for able-to-pay households, and grants for low-income

¹⁴ Scottish Government. (2021). Draft heat in buildings strategy: Achieving net zero emissions in Scotland's buildings consultation. <https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings-consultation>

¹⁵ Spanish Ministry of Transport, Mobility and Urban Agenda, 2020.

households. The Scottish government has also trialled equity release schemes to enable low-income homeowners to renovate, drawing on the value of their home.

Stakeholders emphasised the importance of a comprehensive and stable framework of incentives, funding and finance being made available and communicated at a local level. One-stop shops at neighbourhood level are particularly important to join up services for building owners. Stakeholders identified that local public-sector actors have a key role in providing the bridge between national MEPS policy and local implementation and acceptability. Projects designed and delivered by the public sector have a key role in establishing good practice and defining locally relevant renovation solutions. This is an important finding, as all international examples of MEPS identify local or city authorities as the enforcement bodies charged with ensuring impact.

Given the importance of local resources to enable renovation and the regional differences in building types, climate and other characteristics, the option to introduce area-based MEPS was considered. Fostering renovation at a neighbourhood scale would also allow for resource optimisation.

Stakeholders also addressed the important question of monitoring and ensuring compliance with the standard. Existing examples of MEPS are enforced through a range of methods including building inspections and licencing for rented properties, lodging compliant label in the EPC register and other energy or carbon reporting requirements. Penalties include escalating fines and the eventual prevention of building use. In Spain, building evaluation reports, for which a building inspection is required and which already include details of energy performance, could be one trigger point to require older buildings (over 50 years old) to meet a standard. Stakeholders also proposed a more extensive schedule of periodic inspections.

At a national level, Spain needs measures to integrate incentives for renovation into the wider tax structure and into housing policy. Changes proposed include reducing real estate tax for properties with better EPC ratings, reducing value-added tax for renovation products and labour, and excluding building renewal incentives¹⁶ from income taxation. For low-income households, incentives for renovation should not be included in calculations of income as taking up an incentive could threaten access to essential means-tested social support.¹⁷ Stakeholders recognised that, for higher income citizens, tax incentives can be more effective than subsidies. For low-income households, high levels of subsidy will be essential.

¹⁶ A range of building renewal incentives are available in different municipalities and regions of Spain. These include incentives for renovations works that reduce energy demand and improve accessibility and for renovation of privately owned homes that are offered for social rent. Zaragoza Vivienda. (n.d.). Rehabilitación residencial [Residential rehabilitation]. <https://www.ayudasrehabilitacionzaragoza.es>

¹⁷ Means testing refers to an official review to assess whether a citizen or family is eligible for government support.

Annex: European examples of MEPS

The below table¹⁸ presents examples of MEPS in European countries or regions.

Where	Introduced	Fully enforced	Building stock sector, tenure, building type	Metric	Minimum standard
Netherlands	2018	2023	Office buildings	EPC	EPC C
France	2019	2028	Private homes	EPC	EPC E
France	2019	2023	Rented homes	Energy performance	Worst-performing: using >450 kWh/m ² /year
France	2019	2030, 2040, 2050	Tertiary sector buildings over 1,000m ²	Final energy consumption	40% in 2030, 50% in 2040, 60% in 2050
Flanders, Belgium	2015, 2019	2020, 2023	All homes, but only enforced for privately rented homes	Technical measures	Minimum roof insulation Double glazing
Brussels-Capital, Belgium	2019 (Announced) 2021 (Regulation)	2030, every five years	All domestic and non-domestic buildings	Technical measures	Measures specified by EPC
England and Wales	2016 (Regulation)	2020, 2028	Privately rented homes	EPC	EPC E, 2020 EPC C, 2028 (proposed)
England and Wales	2016 (Regulation)	2018, 2023, 2030	Privately rented non-domestic buildings	EPC	EPC E (2018, 2023) EPC B, 2030 (confirmed)
Scotland	2020 (Regulation)	2021, 2025, 2028	Privately rented homes	EPC	EPC E, 2021 EPC D, 2025 EPC C, 2028 (proposed)

¹⁸ Sunderland, L., & Santini, M. (2021). *Next steps for MEPS: Designing minimum energy performance standards for European buildings*. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/next-steps-for-meps-designing-minimum-energy-performance-standards-for-european-buildings/>

Additional resources

Related reports and research

Next steps for MEPS: Designing minimum energy performance standards for European buildings

<https://www.raonline.org/knowledge-center/next-steps-for-meps-designing-minimum-energy-performance-standards-for-european-buildings/>

This paper aims to contribute to the development of a MEPS framework to be proposed as part of the revision of the Energy Performance of Buildings Directive. It reviews existing models of MEPS, defines a set of priorities for MEPS within the European renovation policy framework and proposes a flexible framework for the EU.

Filling the policy gap: Minimum energy performance standards for European buildings.

<https://www.raonline.org/knowledge-center/filling-the-policy-gap-minimum-energy-performance-standards-for-european-buildings/>

The authors draw from successful examples around the world to share key design features for minimum energy performance standards, their supporting framework and the considerations for policy makers just getting started.

Case studies: Minimum energy performance standards for European buildings

<https://www.raonline.org/knowledge-center/case-studies-minimum-energy-performance-standards-for-european-buildings/>

These case studies from six European jurisdictions share key design features for minimum energy performance standards, their supporting framework and the considerations for policy makers just getting started.

Spanish national long-term renovation strategy (LTRS)

Estrategia a largo plazo para la rehabilitación energética en el sector de la edificación en España (ERESEE)

<https://www.mitma.gob.es/el-ministerio/planes-estrategicos/estrategia-a-largo-plazo-para-la-rehabilitacion-energetica-en-el-sector-de-la-edificacion-en-espana>

Last version of the Spanish Long-Term Renovation Strategy, which aims at renovating the Spanish building stock, reaching high levels of energy efficiency and decarbonisation by 2050, and facilitating an economically viable transformation of existing buildings into nearly-zero-energy buildings.

Spanish long-term decarbonisation strategy

Estrategia a largo plazo para una economía moderna, competitiva y climáticamente neutra en 2050

<https://www.miteco.gob.es/es/prensa/ultimas-noticias/el-gobierno-aprueba-la-estrategia-de-descarbonizaci%C3%B3n-a-largo-plazo-que-marca-la-senda-para-alcanzar-la-neutralidad-clim%C3%A1tica-a-2050/tcm:30-516141>

Strategic document that shows the opportunities decarbonisation can offer regarding job creation and economic growth. The document presents a scenario based on the technology and available knowledge, and offers the great signals for investment.

Spanish Climate Change and Energy Transition Law

Ley 7/2021, de 20 de mayo, de cambio climático y transición energética

<https://www.boe.es/buscar/act.php?id=BOE-A-2021-8447>

Political framework that aims to facilitate Spain's progressive adaptation to the requirements for climate action and to guarantee coordination of the different sectoral policies, ensuring their coherence towards achieving climate neutrality.



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