NBRP Assessment

Document 1 — Country-by-country analysis

Belgium-Wallonia · Bulgaria · Denmark · Portugal · Romania · Spain

All scores are derived from the NBRP PDFs (ground truth), post-audit — NBRP_final_v3_audited.xlsx.
Scale: 0 = absent · 1 = intentional / implicit · 2 = preparation / pilot · 3 = operational / scaled.

How to read these country fiches

Each fiche follows the same 3-page structure to enable cross-country comparison:

- Page 1 — Snapshot: overall positioning, stream radar, topic × dimension heatmap, quantitative market snapshot.
- Page 2 — Plan narrative by stream (S1 to S5), with country-specific strengths and gaps (those shared with other countries are covered in Document 2 — Transversal Analysis).
- Page 3 — Flagship features (distinctive measures with short description) and likely advocacy priorities for the final version of the NBRP.

Critical reading note. The analysis focuses on what is contained in each NBRP PDF. Where a country has mature policies outside the NBRP that are not re-detailed in the plan (typical case: Denmark), this is explicitly flagged in a disclaimer.

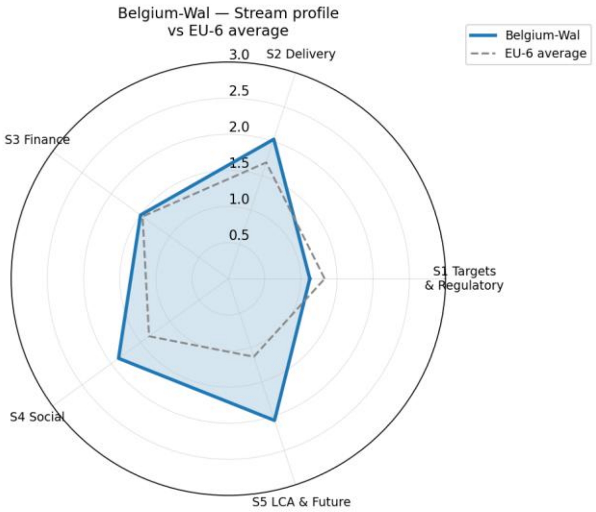
Cross-country observations and transversal priority improvements are developed in Document 2. To avoid repetition, they are not restated here unless particularly critical for a specific country.

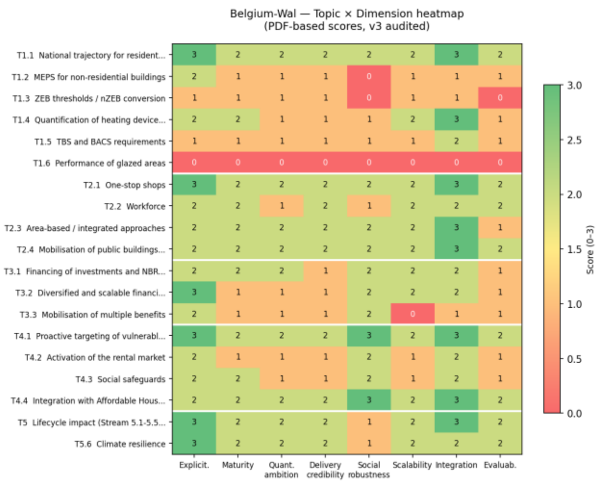
Belgium-Wal

Global score: 1.63 / 3 · Ranking: 3rd of 6

The Walloon NBRP is structured around the strongest delivery architecture among the 6 plans analysed, with a particularly mature design on social safeguards, one-stop shops, condominium renovation and area-based approaches. Regulatory and financing dimensions are less granular: several instruments are still at design or pilot stage, and quantified investment envelopes are not yet fully consolidated.

Stream profile vs EU-6 average





Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential renovation rate	3.00%/yr (2024-2030); 50,984 buildings/year	5.12%/yr (2031-2040); 5.18%/yr (2041-2050)
Non-residential renovation rate	3.78%/yr (2024-2030); 10,869 bldg/yr; 2.41M m²/yr	7.35%/yr (2031-2040); 21,516 bldg/yr; 4.69M m²/yr
Heating systems and buildings performance	44% of residential PEB units F or G	Full fossil boiler phase-out targeted 2040
Residential investment need	Estimation underway (Annexe 1 methodology)	€110 bn to 2050 (central estimate) €38-64 bn to 2050 for the non-residential stock, within which €19 to 31 bn are estimated for public buildings
Workforce need	n/a	64,000 additional jobs required (Walloon level) by 2050 71,000 additional BE-wide in supply chain by 2050
OSS network target	≥1 per 80,000 inhabitants, <90 min (2026)	Full 3-tier service by 2040

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

The trajectory is strong on residential (label-class endpoints 2036/2041/2050, Measure 8), but the plan does not contain a dedicated measure on market activation for innovation practices, including smart or technical building systems (such as BACS/TBS); these are only touched indirectly, notably through Measure 9 on rebound effect. MEPS for non-residential remain design-stage (no kWh/m² thresholds yet). ZEB methodology is referenced but not operationalised.

S2 — Delivery architecture & implementation capacity

Delivery is the strongest stream (avg 2.03). One-stop shop architecture is one of the most developed across the 6 plans, with an all-inclusive service model (information → personalised support → delegated project management) and explicit territorial coverage targets (≥1 OSS per 80,000 inhabitants, <90 min travel time by 2026). Area-based approaches are operationalised through local heat and cooling plans for all >45,000 inhabitants municipalities (Measure 10), condominium Measure 14 (10,000 condominiums renovated by 2035) and Measure 16 ("renovation trains").

S3 — Finance & political attractiveness

Financing shows a credible envelope (€175bn to 2050 including residential and non-residential, €33bn 2025-2030) but lacks disaggregation of public vs private leverage. The innovative toolbox (zero-interest loan + social safety net combination) is distinctive, with one-third of households facing funding gap quantified.

S4 — Social robustness

Social robustness is the second-strongest stream (avg 1.88). The "trusted referent" model, the 100% "loyer chaud" safeguard (rent + energy cost cap) and the 25,000 public housing unit target to 2030 make this one of the most operational social frameworks.

S5 — Long-term quality & future-proofing

Climate resilience is presented in the Walloon plan through the integration of adaptation component in 100% of audits from 2030, making it a strong ambition comparatively to the other plans. TOTEM tool operational, and the Measure 24/Action 5 regional GWP roadmap is credible, but LCA for renovation remains design-stage (operational from 2028 for new-builds only).

Key country-specific strengths

- 3-tier OSS architecture with 80k-inhabitant / 90-min territorial coverage target.
- Operational "trusted referent" model for vulnerable households + "loyer chaud" 100% safeguard (rent + energy cost cap).
- Condominium renovation as a structured pillar: 100% EPC by 2030, 10,000 renovated condominiums by 2035, "renovation trains" pilots.
- Climate resilience embedded in audits from 2030 + PEB integration — the most advanced resilience integration in the 6 plans.
- TOTEM LCA tool operational + regional GWP roadmap via Measure 24/Action 5 (observatory 2029, first report 2030).

Key country-specific weaknesses

- Glazed area performance entirely absent (T1.6 score 0/3).
- No dedicated TBS/BACS measure — only an indirect mention in Measure 9 (rebound effects).
- MEPS for non-residential buildings remains without kWh/m² thresholds (T1.2: 1/3).
- Financing envelope (€175bn to 2050) not disaggregated by public/private contribution; one-third of households facing funding gap quantified but not fully resolved.
- Multiple benefits insufficiently leveraged: quantification of the ~30% energy cost increase present, but not used as a political argument or funding criterion.

Flagship features

- **All-inclusive one-stop shop model (Measure 17)** – This approach aims to offer broad and tailored support services to all households, with specific attentions to vulnerable ones, through layered service portfolio (3 levels, from information to project management), with specific territorial coverage (1 OSS per 80,000 inhabitants, <90 min access by 2026, Type 2 by 2028, Type 3 by 2040).
- **Collective renovation of condominiums (Measure 14) —** Collective EPC + multi-year building-level roadmap + accompaniment for co-ownership structures. Targets: 100% of condominiums with EPC by 2030; 10,000 renovated by 2035; 100 certified trustees by 2028.
- **"Renovation trains" (Measure 16) —** Simultaneous on-site works on similar dwellings in a neighbourhood, enabling industrialised and replicable renovation. Targets: 2,000 units renovated collectively 2026-2030; ≥10 renovation trains deployed by 2029; 25% of municipalities with a local pooled renovation strategy by 2030.
- **"Loyer chaud" safeguard (Measure 22 / social dimension) —** A dual cap on rent + energy cost (100% of rents above the rent limit where energy performance is below threshold are non-payable). Directly addresses rent inflation post-renovation.
- **Climate resilience integrated in audits (Measure 23) —** 100% of audits to include an adaptation component from 2030; PEB tool to integrate climate resilience criteria by 2030. Unique in the 6 plans analysed.

Likely advocacy priorities for the final version

- Define kWh/m² thresholds for MEPS on non-residential buildings, aligned with the 16% / 26% milestones (currently absent from the plan).
- Introduce a dedicated measure around market activation/development for the innovative practices (such as insulation materials, smart devices, or glazing solutions) to offer clear signal to sector players on the market opportunities — today only indirectly mentioned in Measure 9 on rebound effects.
- Disaggregate the €175bn investment envelope by public vs private contribution and by 5-year period (currently only the 2025-2030 €33bn slice is explicit).
- Use multiple benefits (energy cost savings, health, jobs) as an explicit funding allocation criterion, leveraging the quantified ~30% energy cost increase evidence.

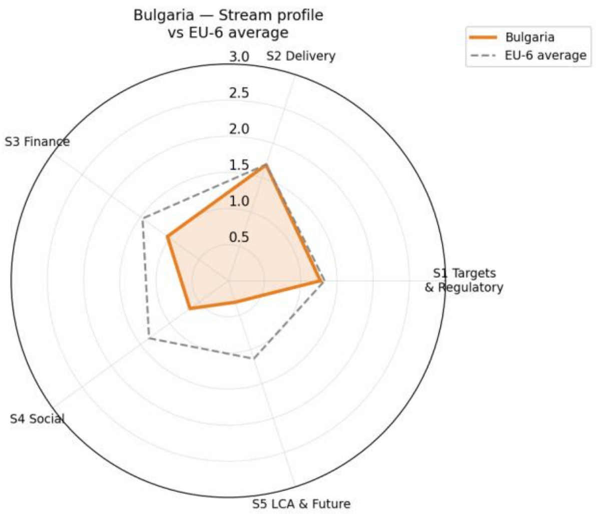
Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.

Bulgaria

Global score: 1.09 / 3 · Ranking: 5th of 6

The Bulgarian NBRP combines a strong diagnostic foundation (detailed MEPS thresholds by typology, extensive energy-poverty infrastructure, comprehensive BUILD UP Skills roadmap) with a weak delivery infrastructure on social and financial instruments. Several key topics are either at conceptual/pilot stage only (one-stop shops) or near-absent (rental market activation) or near-zero (Affordable Housing Plan integration, climate resilience).

Stream profile vs EU-6 average



Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential renovation rate	Light 0.01% / Medium 0.38% / Deep 0.08%; Total ~0.47%/yr (1.43 M m²) as of now	n/s
Non-residential renovation rate	n/a — no national reporting system	n/s
Stock structure	>64% multi-family buildings built 1960-1999 Residential stock: 29,562 multi-family (79.98M m², 35.99% of stock)	n/s
Residential investment need	€2-35 bn in 2022 (indicative range in the draft)	n/s
Non-res investment need	n/s	~€48 bn to 2050 total
Public resource deployed	BGN 6.33 bn (NPEEMZHS 2bn + NRRP 1.14bn + NEPT 2.5bn planned) for ~6,790 large social units (~8.3% of 82k potential)	n/s
Workforce gap	198,200 (2022) → ~249,600 by 2030 (+25%, +52,368 workers) BUS4RoBOOST roadmap in place	n/s
OSS network	CCA/OSS concept defined (≥1/80 000 inhabitants criterion, NFC legal mandate, pilot structures via SHEERenov+); no operational national network — pilot mode only	n/s

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

Bulgaria publishes the most detailed MEPS kWh/m² thresholds by building use in the 6 plans (e.g. 488 kWh/m² Administrative, 188 Schools, 550 Health, 813 Commercial). ZEB thresholds per typology are also explicit, although indicative. Heating device transition is strong (phase-out 2040 boilers, 2050 RES district heating). On smart and technical systems, the plan recognizes the value of BACS/BMS and points to future SRI integration, but does not yet define explicit TBS/BACS requirements, thresholds or enforcement mechanisms.

S2 — Delivery architecture & implementation capacity

Workforce is the stream's strong point, with the BUILD UP Skills Bulgaria 2030 roadmap quantifying the gap (198,200 → 249,500 workers, +25%, 52,368 upskilling) and identifying 5 priority areas. Public buildings strategy is solid (1.9% / year energy reduction, 3%/year renovation for buildings >250 m²). 28 Regional Information Centres for renovation are set to be replaced or complemented with a network of accredited private or public-private Integrated Services Centers, after successful pilot projects in 6 cities, with one center per >80,000 inhabitants.

S3 — Finance & political attractiveness

The National Decarbonisation Fund (NDF) is a cornerstone financing innovation, with pilot deep-renovation schemes combining ~49.9% grants with loans, guarantees and blending. However, multiple benefits are not operationalised (T3.3 = 0.25): the plan does not quantify health/social/economic co-benefits.

S4 — Social robustness

The plan states Bulgaria as one of the most energy-poor country in the EU. As an answer to this, vulnerable households targeting is meaningfully developed (legal definition of energy poverty, 1.83M people in energy poverty quantified as per annual monitoring of Bulgarian authorities), but rental market activation, social safeguards, and Affordable Housing Plan integration are near-zero. Rural depopulation (~41% vacancy rate in rural areas) creates a specific challenge where "inactive owners" matter more than classic rental issues.

S5 — Long-term quality & future-proofing

Both LCA/embodied carbon and climate resilience are largely absent (T5 = 0.38, T5.6 = 0.25). The plan references EN 15804/15897 methodology alignment but provides no 2027 commitment, no roadmap timetable, no risk mapping.

Key country-specific strengths

- Most detailed kWh/m² MEPS thresholds by use-type across the 6 plans (Administrative 488, Schools 188, Hotels 550, Commercial 813, etc.).
- BUILD UP Skills Bulgaria 2030 consortium roadmap: quantified workforce gap (198k→250k, +25%) with 5 priority areas and VET modernisation project.
- Legal and monitoring infrastructure on energy poverty: Art.38e providing the legal definition, 1.83M people quantified and annually monitored by SEDA from 2024 (28.47% of households being energy-poor, as per Bulgarian indicator).
- National Decarbonisation Fund (NDF) as an anchor financing vehicle, with deep-renovation pilots blending ~49.9% grants + loans + guarantees.
- Detailed public-building strategy: comprehensive inventory by 2025 (2-year updates), 1.9%/y energy reduction, 3%/y renovation of buildings >250 m².

Key country-specific weaknesses

- Multiple benefits near-absent (T3.3 = 0.25): co-benefits are not quantified, not monetised, not used as funding allocation criterion.
- Rental market and social safeguards near-absent (T4.2 = 0.5; T4.3 = 0.5): no split-incentive solutions, no anti-renoviction protections, no binding affordability safeguards.
- Missed opportunity in embedding affordable housing challenges into the plan (T4.4 = 0.125): no coordination with housing policy, no use of vacant dwellings as lever.

- LCA/embodied carbon and climate resilience barely addressed (T5 = 0.38, T5.6 = 0.25): EN 15804 alignment referenced but no 2027 commitment or timetable.
- No operational OSS network: CCA/OSS structures are extensively planned (coverage criterion ≥1/80,000 inhabitants, NFC legal mandate, EU-funded action 2026–2027) but exist only in pilot mode (SHEERenov+, Integrity Centres) without a national budget or confirmed staffing. The concept and legal framework are in place; the delivery infrastructure is not.

Flagship features

- **BUILD UP Skills Bulgaria 2030 roadmap —** Multi-actor project which quantified 25% employment growth target, 52,368 workers to upskill, 5 priority areas, VET modernisation project. Includes retirement trends and a structured pipeline.
- **National Decarbonisation Fund (NDF) —** Anchor financing vehicle designed for structural market shift. Pilot deep-renovation scheme with ~49.9% grant + loans + guarantees + blending. Differentiated rules for interventions >50% vs ≤50%.
- **Legal energy-poverty architecture (Art.38e Energy Act) —** November 2023 legal definition + Council of Ministers Decree 24/2025 on household status determination + SEDA mandated annual monitoring (deadline 31 March each year) + 76% structural vulnerability recognition for single-family dwellings.
- **Typology-differentiated MEPS thresholds —** The most detailed kWh/m² breakdown among the 6 plans: thresholds by use-type (9+ categories), consistent with 16% and 26% milestones, integrated with SEDA compliance framework and digital labelling.

Likely advocacy priorities for the final version

- Better embed the Affordable Housing Plan challenges into the plan (T4.4 = 0.125) to leverage ~39% vacancy rate + fragmented ownership, and target inactive owners and co-ownership structures.
- Develop binding affordability safeguards and anti-renoviction protections (currently absent): rental market and safeguards score 0.5 each.
- Operationalise multiple benefits: quantify health, social and economic co-benefits and use them as a funding allocation criterion.
- Develop a national climate resilience strategy linked to the NBRP (risk mapping for heatwaves, floods, extreme weather; integration of resilience into renovation packages).

Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.

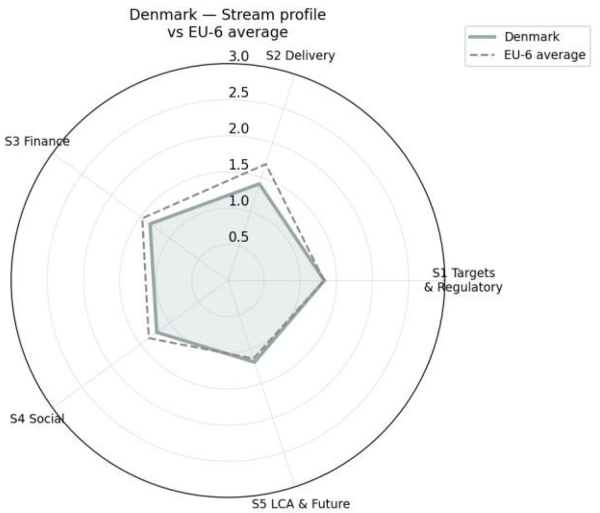
Denmark

Global score: 1.31 / 3 · Ranking: 4th of 6

The Danish NBRP is a deliberately concise document that relies extensively on cross-references to pre-existing Danish legislation rather than re-detailing operational mechanisms. Its 1.31 global score reflects what the NBRP document itself contains, not the full maturity of Danish building policy, which is among the most advanced in the EU on several dimensions.

⚠ ***Reading note.*** *The Danish NBRP is deliberately concise and relies extensively on cross-references to existing Danish legislation (Building Code BR18, Erhvervspuljen, Sparenergi.dk, Landsbyggefonden, Green Housing Agreement) rather than re-detailing operational mechanisms. The global score of 1.31 reflects what the NBRP PDF itself contains. Denmark's broader building policy architecture is among the most advanced in the EU — notably on binding LCA (world-class), digital OSS, and public building renovation — and the v3 audit has corrected 7 dimension-scores upward to reflect this. Where the NBRP is genuinely silent (climate resilience, rental market instruments, Affordable Housing Plan integration), the gap is real; where it cross-references mature frameworks, the audit has adjusted accordingly.*

Stream profile vs EU-6 average



Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential renovation rate	n/s in NBRP PDF	n/s
Non-residential renovation rate	n/s in NBRP PDF	n/s
Heating systems	n/s in NBRP PDF	n/s
Residential investment need	€1.889 bn (2026-2030); WPB-43 €1.330 bn	€9.446 bn (2026-2050)
Non-res investment need	€464 M (2026-2030)	€3.734 bn (2026-2050)
Public financing	€1.388 bn total (local €940M / regional €52M / national €396M, 2026-2030)	Proportional public share maintained; no EU funds allocated
Private financing	€966 M total (2026-2030); sub-breakdown n/a	n/s
Workforce need	n/s in NBRP PDF	n/s
OSS network	n/s in NBRP PDF (Sparenergi.dk operational but volume targets absent)	n/s

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

Building Code BR18 is operational and serves as the backbone (ZEB thresholds explicit in Table 31: <27 kWh/m^2·y residential, <33 non-residential; mandatory 2028 public / 2030 all). Erhvervspuljen business scheme is operational. MEPS for non-residential have single thresholds (2030: 190 kWh/m^2·y; 2040: 139 kWh/m^2·y) rather than typology-differentiated. Glazed areas are minimally addressed in the NBRP itself, while TBS/BACS are present in a more fragmented way through Article 23(6) alternative measures, automation requirements for certain systems >290 kW, and QA/QC and commissioning provisions, rather than through a single coherent framework.

S2 — Delivery architecture & implementation capacity

Sparenergi.dk operates as a national digital one-stop shop (segmented digital mail to home-owners, 5-region public meetings by DEA, Energi- og Bygningsanalysen tool free for all municipalities). The audit corrected the OSS score upward (Scalability 1→2). Area-based approach is fragmented (Klimaalliancen voluntary + hospital sectoral). Public buildings strategy is substantive (3.9M m^2 + 3%/year + EED Art.6 agreement).

S3 — Finance & political attractiveness

Structured investment envelope (EUR 1,889M residential 2026-2030 + EUR 964M private) but private funds not disaggregated. The financing toolbox lacks innovative instruments (no PACE, no on-bill, no CAE-style market). Multiple benefits remain at study stage.

S4 — Social robustness

Vulnerable households targeting through Landsbyggefonden (National Building Fund) for non-profit housing. Rental market split-incentive explicitly acknowledged ("Paradoksproblemet", 2014 attempt documented) but no new instrument. Social safeguards weak in the plan despite Denmark's broader welfare architecture.

S5 — Long-term quality & future-proofing

LCA framework is the most advanced: Building Regulation BR18 operational since 2023 (binding WLC GWP methodology, differentiated values, A4+A5 modules, tightening schedule to 2029). The only country with binding LCA legislation. However, climate resilience is entirely absent from the NBRP (T5.6 = 0), confirmed as a genuine policy gap rather than a document artefact.

Key country-specific strengths

- Binding LCA framework (BR18, 2023 in force): differentiated GWP values, A4+A5 modules, tightening schedule to 2029. World-class — no other analysed country has binding LCA legislation.
- ZEB thresholds already explicit in the Building Code (Table 31: <27 kWh/m^2 residential, <33 non-residential); mandatory 2028 (public) / 2030 (all). Voluntary today, binding next.
- Sparenergi.dk — operational national digital one-stop shop, with segmented digital outreach and Energi- og Bygningsanalysen tool free for all municipalities.
- Landsbyggefonden — mature social-housing financing vehicle, with Green Housing Agreement €3.6bn, which the NBRP references for vulnerable-household renovation.
- Public buildings strategy substantive (3.9M m^2 + 3%/year + EED Art.6 agreement, EPC class B target by 2040).

Key country-specific weaknesses

- Climate resilience completely absent from the plan (T5.6 = 0): no risk mapping, no integration into renovation packages, no adaptation component.
- MEPS for non-residential use a single cross-building threshold rather than typology-differentiated thresholds (190 kWh/m^2 2030; 139 kWh/m^2 2040).
- Financing toolbox lacks innovative instruments beyond grants and schemes — no PACE, no on-bill, no CAE-style certificate market.
- OSS is digital-only: Sparenergi.dk recommendations are not sufficiently tailor-made — risk of not driving the most performance-effective works despite addressing individual cases.

- Affordable Housing Plan integration: the NBRP address affordable housing challenges via Landsbyggefonden, but these are not articulated as housing-policy integration.

Flagship features

- **Binding LCA framework (Building Regulation BR18) —** Operational since 2023, with binding whole-life-cycle (WLC) GWP methodology, differentiated values per building type, A4+A5 transport and construction-site modules, progressive tightening schedule to 2029. No equivalent in the 5 other plans analysed.
- **Sparenergi.dk national digital OSS + Energi- og Bygningsanalysen —** Mature national digital OSS providing segmented digital mail, 5-region public meetings via DEA, and the free Energi- og Bygningsanalysen tool for all municipalities. The only digital-first OSS architecture at national scale in the 6 plans.
- **Erhvervspuljen (Business Scheme) —** Operational national-scale grant scheme covering automation requirements for systems >290 kW (controls, monitoring, fault detection for cooling and ventilation).
- **Landsbyggefonden + Green Housing Agreement (€3.6bn) —** National Building Fund operating as anchor financing vehicle for non-profit housing renovation; provides a structural linkage between NBRP and social-housing renovation delivery.

Likely advocacy priorities for the final version

- Introduce a dedicated climate resilience chapter in the next NBRP iteration: risk mapping, integration of overheating/flooding criteria into renovation packages, Southern-Denmark heatwave provision.
- Move MEPS for non-residential from single thresholds to typology-differentiated thresholds (per use-type and per climate condition) — today at 168/139 kWh/m² single values.
- Introduce innovative financing instruments (PACE-style, on-bill, efficient mortgages) to complement the grant-based financing toolbox.
- Make Sparenergi.dk recommendations more tailor-made to the building and the household — increase performance-targeting of the digital OSS.
- Explicitly articulate the linkage between the NBRP and Danish affordable/social housing architecture (Landsbyggefonden) as a housing-policy integration, not only as a financing route.

Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.

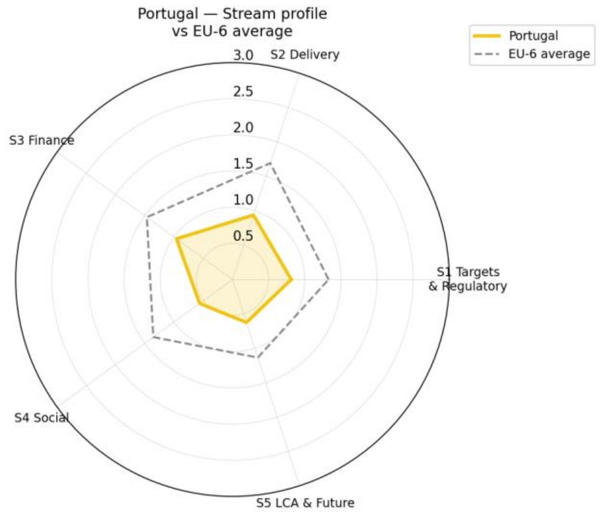
Portugal

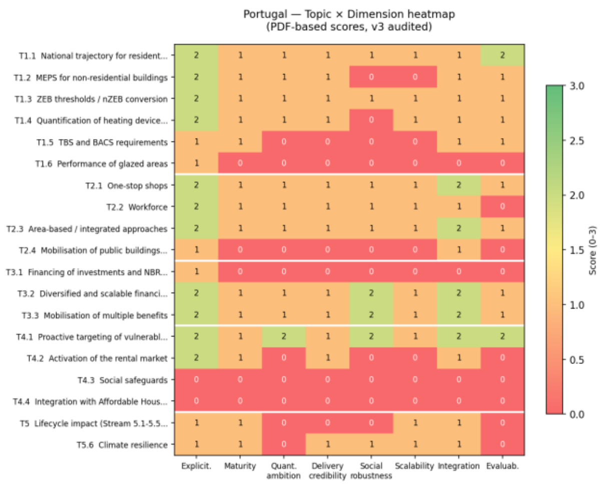
Global score: 0.79 / 3 · Ranking: 6th of 6

The Portuguese NBRP is a draft-stage document that explicitly acknowledges its own incompleteness through recurring language such as "Por iniciar", "Por orçamentar", "A determinar". Several topics (financing of investments, social safeguards, Affordable Housing Plan integration) are close to zero because the plan itself is not yet quantified, rather than because of policy absence. This score must be read as a snapshot of the current draft and will likely evolve significantly in the next iteration.

> ⚠ ***Reading note.*** *The Portuguese NBRP is a draft-stage document: the plan itself acknowledges repeatedly that key provisions are "Por iniciar" (to be initiated), "Por orçamentar" (to be budgeted), or "A determinar" (to be determined). Several topic scores of 0 reflect this incompleteness, not a systemic policy absence in Portuguese building policy. This score should be read as a snapshot of the current draft and is likely to evolve significantly in the next iteration.*

Stream profile vs EU-6 average





Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential renovation rate	4.1% (as of 2023)	n/s
Non-residential renovation rate	2.7% (as of 2023)	n/s
Investment need	n/a in current draft	n/a in current draft
Workforce baseline	≈80,000 professionals (construction sector)	Needs: circularity, BIM, energy performance skills
Rental stock	~18% of housing stock is rental	n/s
OSS coverage criteria	n/s	Target: ≥1 per 80,000 inhabitants, vulnerable-area priority (EPBD-aligned) Progressive implementation 2027-2050

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

Trajectory is outlined with 2030 -16% and ramps through 2035-2040-2045, but interim milestones to 2050 are not fully quantified and conversion to annual renovation rates is limited. MEPS and ZEB thresholds are referenced (16% by 2030 / 26% by 2033, aligned with EPBD Article 9) but not binding. TBS/BACS are only marginally addressed as binding requirements, although the plan does reference BACS promotion, interoperability and SRI as enabling tools; glazed areas remain absent.

S2 — Delivery architecture & implementation capacity

OSS coverage criteria (≥1 per 80,000 inhabitants, vulnerable-area priority) are defined but remain at conceptual stage: no staffing, no budget, no service-level quantification. Workforce needs are acknowledged (construction sector ≈80,000 professionals; circularity, BIM, energy-performance skills). Area-based approach is referenced. Public buildings is one of the weakest topics (T2.4 = 0.25) — no operational lead-by-example logic.

S3 — Finance & political attractiveness

Financing of investments scores the lowest of any topic across the 6 plans (T3.1 = 0.125): no total investment envelope, no public/private split, no period-by-period disaggregation. The financing toolbox shows interesting elements (explicit inclusion of condominiums; going beyond one-size-fits-all) but remains at design stage.

S4 — Social robustness

Vulnerable households targeted with 2030/2040/2050 energy poverty reduction goals (1.8 to 3 million people affected). Rental market (≈18% of stock) with split-incentive identification and tax incentives when buildings reach NZEB/ZEB. Social safeguards and Affordable Housing Plan integration, however, are entirely absent (T4.3 = 0; T4.4 = 0).

S5 — Long-term quality & future-proofing

Both LCA and climate resilience at very early stage. LCA topic (T5) = 0.5: no roadmap, no GWP limit values, methodology not fixed. Climate resilience shows some positive elements (nature-based solutions reference, urban heat / stormwater recognition) but without binding integration.

Key country-specific strengths

- Recognition of OSS national coverage criteria aligned with EPBD principles (≥1 per 80,000 inhabitants, vulnerable-area priority).
- Financing toolbox explicitly includes condominiums and collective decision-making structures — an acknowledgement of Portuguese building-stock specifics.
- Split-incentive on rental market (≈18% of stock) clearly identified; tax incentive for NZEB/ZEB buildings.
- Integration of nature-based solutions and recognition of urban heat / stormwater / microclimate issues in climate resilience (T5.6).
- Alignment with National Strategy to Combat Energy Poverty; vulnerable household targets set for 2030 / 2040 / 2050.
- Recognition of indoor environmental quality (IEQ), health and comfort as renovation co-benefits, with indicators and support-programme links under development.

Key country-specific weaknesses

- Financing of investments is the weakest topic across the 6 plans (T3.1 = 0.125): no total envelope, no public/private split, no period disaggregation.
- Social safeguards completely absent (T4.3 = 0): no anti-renoviction protection, no rent-retention mechanism, no affordability conditionality.
- Affordable Housing Plan integration completely absent (T4.4 = 0): no coordination with housing strategy, no joint instruments.
- Public buildings strategy weak (T2.4 = 0.25): no binding annual renovation rate, no market-shaping role articulated.

- Extensive "Por iniciar / Por orçamentar / A determinar" language throughout the plan: the NBRP explicitly flags itself as draft-stage, not yet quantified.

Flagship features

- **Condominium-explicit financing approach —** Rare among the 6 plans: financing toolbox explicitly includes condominiums and collective decision-making structures, acknowledging the structural specificity of Portuguese building stock.
- **Vulnerable household targeting aligned with National Strategy to Combat Energy Poverty —** 1.8 to 3 million people estimated in energy poverty; targets set for 2030 / 2040 / 2050; linked to the National Strategy to Combat Energy Poverty.
- **Rental market split-incentive architecture —** ~18% of housing stock identified as rental; tax incentives when buildings renovated to NZEB or ZEB. One of the clearer rental-market problem framings in the 6 plans.

Likely advocacy priorities for the final version

- Quantify total investment needs and public/private split — this is the single most critical gap in the plan (T3.1 = 0.125).
- Develop binding social safeguards and anti-renoviction protections (today T4.3 = 0).
- Establish Affordable Housing Plan integration with joint governance and shared instruments (today T4.4 = 0).
- Articulate the public-building strategy as a market-shaping lever with binding annual renovation rate (today T2.4 = 0.25).
- Translate the long-term trajectory into annual renovation rates, floor area and depth assumptions — currently only 2030/2035 milestones are explicit.

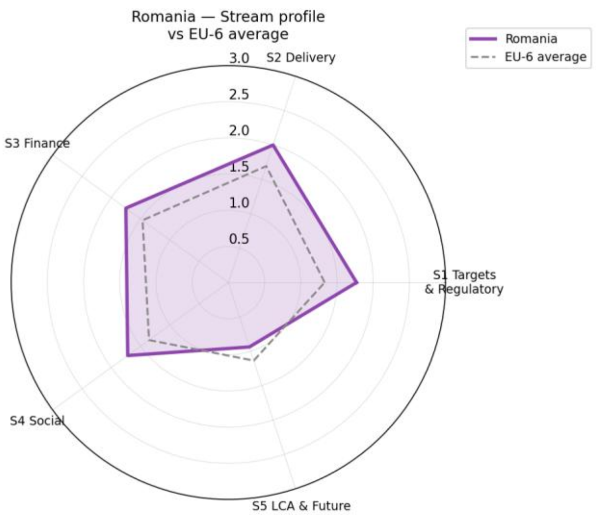
Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.

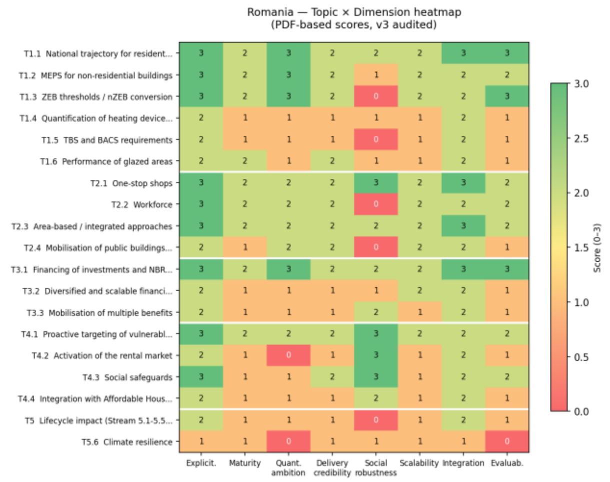
Romania

Global score: 1.72 / 3 · Ranking: 2nd of 6

The Romanian NBRP is the most granular regulatory document among the 6 plans for a first draft. It publishes numeric MEPS thresholds (T16 = 422, T26 = 340 kWh/m²·y), ZEB thresholds per typology × 5 climate zones (new and renovated), and glazing U-values — a level of detail unusual at first-draft stage. Delivery and financing architecture is well sized (€122-125bn total to 2050; 42-office operational OSS network). Weaker on LCA, climate resilience, and innovative financing instruments.

Stream profile vs EU-6 average





Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential stock	5.05M buildings / 657.0M m² (2020); WPB-43: 2.07M / 282.5M m²	n/s
Residential renovation rate	18.06M m²/yr (2.75% of stock); WPB-43 14.58M m²/yr (2.22%)	~180.6M m² decade volume; WPB-43 ~145.8M m²
Renovation depth mix	2026-2030: light 5% / medium 57% / deep 38% (total stock)	n/s
Non-residential stock	62.0M m² / 242,455 buildings	n/s
Non-residential renovation rate	2.33M m²/yr (3.76%); worst-performing 1.95M m²/yr (3.15%)	~23.3M m² decade; WPB ~19.5M m²
Residential investment need	€26.251 bn (2026-2030); WPB-43 €24.461 bn	€39.906 bn (2026-2035)
Non-res investment need	€2.321 bn (2026-2030); WPB €1.941 bn	€4.406 bn (2026-2035)
Total public financing	n/s split by residential/non-res	€29.773 bn total (all buildings, 2026-2035)
Total private financing	n/s split	€17.754 bn total (all buildings, 2026-2035)
OSS network	42 offices (1 per county + Bucharest); €250k per new OSS; €250k/yr operating cost 2026-2035 then €100k/yr	Expansion to ~100 OSS by 2035
Workforce need	>160,000 workers to upskill/reskill by 2030 (incl.	n/s

	79,963 unskilled)	

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

Romania publishes the most detailed numeric regulatory thresholds of the 6 plans: T16 = 422 kWh/m²·y and T26 = 340 for MEPS non-residential; ZEB thresholds per typology × 5 climate zones (NZEB-10% method explicit); glazing U-value ≤1.10 W/m²·K with triple-glazing warm-edge specifications in NZEB envelope. Trajectory fully quantified 2020-2050 with 5 milestones and 43% worst-performing buildings break-out. On TBS/BACS, the draft is also comparatively advanced in framework terms: it introduces a 290 kW BACS threshold, links smart controls to MEPS and renovation pathways, and relies on commissioning, inspection, metering and EPC-linked verification, although the BACS obligation itself is not yet fully settled. The quantified trajectory is also supported by a renovation-depth mix in which medium and deep renovation dominate, reinforcing the importance of building-envelope performance as part of the delivery logic.

S2 — Delivery architecture & implementation capacity

Operational OSS network: 42 existing offices (1 per county + 1 in Bucharest municipality), legal framework GEO 92/2024, unit cost €250k transparent, planned expansion to 100 offices by 2035 with €250k annual operating cost (2026-2035) then €100k (2036-2050). Workforce is a relative strength: BUS4RoBOOST roadmap with 160,000 upskill target and 79,963 unskilled workers focus. Area-based approach strong with district-level annual indicators 2026-2030 and PNRR Local Fund.

S3 — Finance & political attractiveness

Financing is comprehensive on needs quantification: €122-125bn total 2050 investment need, €31bn by 2030, full breakdown by period (Table 4.2.4) with dedicated "Other Funding" stream (OSS, vulnerable HH, TA, administration, awareness). Financing toolbox remains exploratory (ESCO, EPC, guarantees, green mortgages, state-guaranteed loans, utility on-bill recovery) — instruments are referenced but not yet sequenced with institutions and timelines.

S4 — Social robustness

Vulnerable households targeting is meaningful: OSS prioritisation, Art.17(19) safeguards, GEO 92/2024 energy-poverty definition, I4/I7 vouchers, Social Climate Fund integration planned. Social safeguards operationalised via Table 3.3.11. Rental market and Affordable Housing Plan integration remain lighter.

S5 — Long-term quality & future-proofing

Chapter 3.18 on whole life carbon (WLC) provides a real framework discussion, but remains early-stage and not well operationalised: no GWP limit values yet defined, and methodology and data still design-stage. Climate resilience is handled piecemeal (overheating in NZEB envelope; seismic integrated in PNRR C5) without a dedicated resilience chapter.

Key country-specific strengths

- Numeric MEPS thresholds published (T16 = 422, T26 = 340 kWh/m²·y) — exceptional for a first draft.
- ZEB thresholds per typology × 5 climate zones (residential + non-residential; new + renovated), with explicit NZEB-10% conversion method (Table 5.2.3).
- Fully quantified 2020-2050 trajectory with 5 milestones and 43% worst-performing buildings break-out.
- Operational OSS network: 42 offices today, legal backing (GEO 92/2024), €250k unit cost, expansion plan to 100 offices by 2035.
- BUS4RoBOOST workforce roadmap: 160,000 upskilling target, 79,963 unskilled workers focus, inter-ministerial memorandum in signing.
- €122-125bn total investment need quantified with period-by-period breakdown and dedicated "Other Funding" stream (OSS, vulnerable HH, TA).

Key country-specific weaknesses

- Financing toolbox remains exploratory (T3.2 = 1.375): instruments (ESCO, green mortgages, on-bill recovery) described but not sequenced with specific institutions and timelines.
- LCA / whole-life-carbon at design stage (T5 = 1.125): no GWP limit values yet, data gaps explicitly flagged.
- Climate resilience handled piecemeal rather than through a dedicated chapter (T5.6 = 0.75): overheating in envelope + seismic in PNRR C5 without coherent resilience track.
- Heating device quantification acknowledges data gap explicitly: household biomass ~3,140 ktoe + heat-pump/solar thermal "negligible" in 2020, no full device-stock inventory.
- Rental market split-incentive is recognised, but instruments remain weakly operationalised: the draft points to model clauses, HOA cost-sharing and landlord–tenant frameworks, but not yet to binding instruments with a clear implementation route.

Flagship features

- **Operational 42-office OSS network (GEO 92/2024) —** National OSS architecture with legal backing: 41 county OSS + 1 in Bucharest. Planned expansion to 100 offices by 2035. Transparent cost structure: €250k per new OSS, €250k/year operating cost 2026-2035, then €100k/year. End-to-end service (not information-only), with dedicated I4/I7 voucher channel.
- **BUS4RoBOOST 2030 workforce roadmap —** Quantified workforce gap: 160,000 workers to upskill/reskill by 2030 including 79,963 unskilled workers. Multi-ministerial memorandum in signing, linked to inter-ministerial coordination.
- **Numeric regulatory thresholds (MEPS, ZEB, glazing) —** Exceptional first-draft granularity: T16 = 422, T26 = 340 kWh/m²·y MEPS non-residential; ZEB thresholds per typology × 5 climate zones (Tables 5.2.1-5.2.4); glazing U-value ≤1.10 W/m²·K with triple-glazing warm-edge in NZEB envelope (Mc 001-2022). Romania is the only country with a dedicated glazing provision scoring above 1.
- **Quantified €122-125bn trajectory with "Other Funding" stream —** Most complete financing need quantification among the 6 plans: €122-125bn total to 2050; €31bn by 2030; full period breakdown; dedicated "Other Funding" stream (OSS, TA, vulnerable HH, administration, awareness).
- **District-level annual indicators 2026-2030 —** Strong area-based chapter with indicative district-programme targets for renovated floor area, average depth, share of area in worst-performing buildings, RES share in building or district demand, district-heating connections, public-private leverage, energy-poverty targeting.

Likely advocacy priorities for the final version

- Move the financing toolbox from description to sequenced pilot deployment: identify which instruments (ESCO, green mortgages, on-bill) move first, through which institutions, on which timetable.
- Define GWP limit values and an LCA roadmap timetable (today chapter 3.18 is comprehensive on logic but design-stage on metrics).
- Consolidate climate resilience into a dedicated chapter with risk mapping (today handled piecemeal: overheating in envelope, seismic in PNRR C5).
- Close the heating device data gap: quantified stock split by fuel/technology and by building segment (today acknowledged as gap).
- Strengthen the market signal for medium and deep envelope renovation by linking the quantified trajectory more explicitly to fabric-first performance improvements and support conditions.
- Move the rental-market split-incentive chapter from model clauses tand design concepts to concrete binding instruments, with a clear implementation route for landlord–tenant and HOA-related cases.

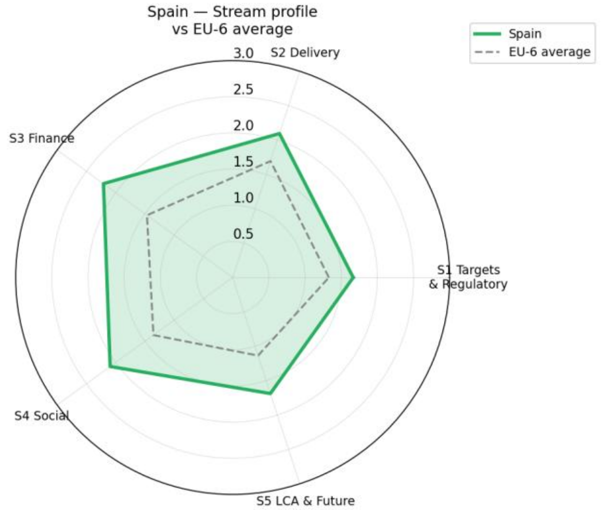
Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.

Spain

Global score: 1.93 / 3 · Ranking: 1st of 6

The Spanish NBRP (PNRE) is the most comprehensive and quantified of the 6 plans analysed. It articulates a fully backcast 2050 trajectory (17.8M dwellings cumulative, 22 kWh/m² endpoint), a €39.35bn 2026-2030 investment plan, a diversified financing toolbox unique among the 6 plans, and strong vulnerable-household architecture. Main gaps: ZEB thresholds are still "tentative" pending EU harmonised methodology; several Royal Decrees are at the early procedural stage.

Stream profile vs EU-6 average



Quantitative market snapshot

Indicator	Annual / short-term figure	Decade / long-term figure
Residential renovation rate	445,500 dwellings/yr; 148,500 buildings/yr; 47.4M m²/yr (2030)	5.46M dwellings; 1.82M buildings; 582M m² (2031-2040)
Renovation depth	30,000 deep / 91,695 medium / 323,805 light dwellings/yr (2030)	270,000 deep / 690,680 medium / 4,504,120 light (2031-2040)
Non-residential renovation rate	0.69% (2023); 5,686 bldg/yr; 4.13M m²/yr	Rate milestone 40.8% (2030) → 62.4% (2040); 79,729 bldg, 128.3M m² added
Residential investment need	€14.736 bn (2026-2030)	€30.048 bn (2026-2035)
Non-res investment need	€22.883 bn (2026-2030)	€46.659 bn (2026-2035)
Total public financing	€11.306 bn (all buildings, 2026-2030)	n/s
Total private financing	€28.044 bn (all buildings, 2026-2030)	n/s
OSS financing	Strategic planning €450k + reinforcement €51.0M (AGE €34.2M + CCAA €16.8M) + TA €2.0M €53.45 M total programmed across OSS measures	n/s
OSS target	≥1 per 80k inhabitants + per region + older stock + neighbourhood renewal + <90 min ~614 OSS nationally by 2030 (derived)	n/s

Workforce	~700,000 additional workers needed in construction (CNC estimate) ~740,000 job opportunities 2023-2035; ~200k VET to 2030	n/s

Plan narrative by stream

S1 — Targets, standards & regulatory backbone

Trajectory backed by backcasting to 2050 (17.8M dwellings cumulative, 22 kWh/m² endpoint; 1.57M equivalent deep renovations 2020-2030, above NECP's 1.38M). MEPS thresholds per use category × 4 climate zones (kWh/m²·y in 2030/2033/2040/2050) are explicit and operationalised. ZEB values, however, are labelled "tentative" pending EU Commission harmonised methodology (10% reduction vs 2024 nZEB cost-optimal). TBS/BACS addressed but BACS-specific operationalisation (≥70 kW threshold) missing.

S2 — Delivery architecture & implementation capacity

Delivery is strong (avg 2.09). OSS is the strongest-quantified of the 6 plans: territorial density formula (≥1 per 80,000 inhabitants + per region + in areas with older stock + in neighbourhood renewal areas + <90 min travel time), Observatorio Ciudad 3R diagnostic study underway, €53.45m programmed across OSS measures, national platform set up February 2025. Workforce: 700,000 additional workers needed (CNC estimate); 740,000 job opportunities in construction 2023-2035. Area-based: strong integration with Spanish Urban Agenda + Local Heating Plans + Sustainable Urban Mobility Plans. Public buildings: 3%/y renovation (EED-aligned) + Order PCM/466/2022 + FNEE/CAE/SNOEE financing channels.

S3 — Finance & political attractiveness

Finance is the top-performing stream (avg 2.21). €39.35bn 2026-2030 total (€11.31bn public, €28.04bn private) with 7-policy breakdown + ETS2/PSpC integration. Diversified toolbox: PACE-style, on-bill, efficient mortgages, CAE certificate market, SIF, HEVA, co-investment, guarantees. Multiple benefits quantified through MICATool ex-ante (2M beneficiaries, HEP, deaths avoided, GDP).

S4 — Social robustness

Strongest social architecture (avg 2.09): 5 sub-actions for vulnerable households with €3bn budget, 21.88% reduction target, differentiated subsidy intensity, direct contractor payment (3.5-8.1 million people in energy poverty quantified). Rental market: 6 sub-actions (split-incentive, eviction, vacant housing, 5-year social/affordable rent commitment). Social safeguards: rent increase allowed after renovation showing 30% energy savings (Law 12/2023 mechanism). Affordable Housing Plan: State Housing Plan 2026-2030 with 30% allocation and 260,000 dwellings target.

S5 — Long-term quality & future-proofing

LCA/embodied carbon: clear EPBD Art.7 transposition route (Measure 6.3.x) + PERTE industrialisation + circularity (6.2.x); GWP limit values pending National Roadmap. Climate resilience: dedicated Section 8.1, National Adaptation Plan integration, climate shelter network — among the stronger resilience provisions in the 6 plans (T5.6 = 2.0).

Key country-specific strengths

- Most quantified trajectory across the 6 plans: 17.8M dwellings cumulative 2050 backcast, 1.57M equivalent deep renovations 2020-2030 (above NECP 1.38M target).
- Most diversified financing toolbox among the 6 plans: PACE-style, on-bill, efficient mortgages, CAE certificate market, SIF, HEVA, co-investment, guarantees.
- Strongest OSS quantification of the 6 plans: explicit territorial density formula (≥1 OSS per 80k inhabitants + per region + older stock + neighbourhood renewal areas + <90 min travel time), €53.45m programmed envelope, national platform February 2025.
- Vulnerable households architecture with direct contractor payment (anti-Matthew logic) — €3bn budget, 5 sub-actions, 21.88% reduction target, differentiated subsidy intensity.
- MICATool ex-ante multiple-benefits quantification (2M beneficiaries, HEP, deaths avoided, GDP) — the most quantified co-benefit framing among the 6 plans.
- Dedicated climate resilience Section 8.1 with National Adaptation Plan integration and climate shelter network — one of the strongest resilience provisions in the 6 plans.

Key country-specific weaknesses

- ZEB thresholds still labelled "tentative" pending EU harmonised methodology — 10% reduction vs 2024 nZEB cost-optimal but not yet final (T1.3 = 1.25).
- Several Royal Decrees at early procedural stage (MEPS RD "in early stages of the procedure") — enforcement framework still under definition.
- Glazed areas treated as a renovation component rather than a dedicated performance topic (T1.6 = 0.75).
- BACS-specific operationalisation missing (≥70 kW already due per EPBD): typo in plan ("by 20230") flagged by Word assessor; thresholds without detailed scope.
- Workforce quantified (700k CNC) but not translated into annual training output targets by profile; women's segregation acknowledged but not addressed operationally.

Flagship features

- **Diversified financing toolbox (PACE + on-bill + HEVA + CAE + SIF + co-investment) —** The widest financing toolbox among the 6 plans. Includes property-assessed clean energy (PACE-style), on-bill financing, bill-based efficient mortgages, Housing Efficiency Valuation (HEVA), Energy Savings Certificates (CAE) market, State Investment Fund (SIF), co-investment structures, public guarantees. Most innovative instruments still at design/pilot stage — National Platform set up February 2025.
- **Anti-Matthew vulnerable-household architecture (€3bn) —** 5 sub-actions with €3bn budget, 21.88% reduction target, differentiated subsidy intensity by vulnerability level, direct contractor payment to remove liquidity barriers. Quantified population: 3.5-8.1 million people in energy poverty. Tightly linked with PSpC 2026-2032.
- **Strategic OSS design with nationwide coverage formula —** Unique among the 6 plans in combining multiple coverage criteria: ≥1 per 80,000 inhabitants + per region + in areas with older-than-national-average stock + in neighbourhood-renewal areas + <90 min travel time. Underpinned by Observatorio Ciudad 3R diagnostic study and €53.45m programmed across specific OSS measures.
- **MICATool ex-ante multiple-benefits quantification —** Quantified co-benefits integrated in plan design: ≈2M beneficiaries, HEP, deaths avoided, GDP. The most quantified co-benefit framing among the 6 plans, corroborated by NECP, ENPE and BC3 cross-studies.
- **Neighbourhood and district-level state aid programme —** State Aid within AGE for renovation actions at neighbourhood or district level; 60% MIVAU / 40% CCAA financing split; builds on Royal Decree 853/2021 PRR Investment 1, Component 2. Specifically designed to overcome the fragmented building-by-building approach.
- **Typology × climate-zone MEPS thresholds —** Most detailed MEPS architecture among the 6 plans: kWh/m²·y per use category (administrative-commercial vs other) × 4 climate zones (AB/C/D/E) for 2030/2033/2040/2050 (range 84-294 in 2030 down to 41-96 in 2050). Exemption threshold 65 kWh/m²·y in warm areas to avoid disproportionate demands.

Likely advocacy priorities for the final version

- Move ZEB thresholds from "tentative" to final and binding — today they await the EU harmonised methodology (Commission delegated act not yet published).
- Accelerate the legal procedure for pending Royal Decrees (MEPS RD "in early stages of the procedure") to operationalise the sanctions regime and enforcement framework.
- Introduce BACS-specific operationalisation at the ≥70 kW threshold (already due per EPBD), including clear scope, minimum functionalities, trigger points and verification route; also correct the in-plan typo on the effective date.
- Translate the 700k CNC workforce gap into annual training output targets by profile, region and role; operationalise the explicit acknowledgement of women's segregation.
- Introduce explicit ex-post tracking of multiple benefits beyond the MICATool ex-ante modelling.

Note. Transversal priority improvements that apply to this country (e.g. operationalise trajectory into annual rates; move ZEB thresholds from tentative to binding; introduce ex-post tracking of multiple benefits) are developed in Document 2 — Transversal Analysis and are not restated here unless particularly critical.