POLICIES PROMOTING ENERGY RETROFITS IN THE BUILDINGS SECTOR

ENERGY EFFICIENCY POLICIES COURSE

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Abstract

Buildings account for approximately 36% of final energy consumption and 40% of energy-related CO_2 emissions worldwide, yet global retrofit rates remain below 1% of the existing stock per year, far short of the 2–3% required for net-zero trajectories. With the aim of identifying good practices, this report examines energy efficiency retrofit policies across ten national and municipal case studies spanning Africa, Europe, North America, Latin America, and South-East Asia, using a pluralist methodology combining peer-reviewed literature with analysis of official programme documentation. Drawing on the IEA Energy Efficiency Policy Toolkit as a reference framework, each case is assessed across four dimensions: policy design, financing models, equity and accessibility, and monitoring, evaluation, and scalability.

Three cross-cutting findings emerge from this report. First, no programme achieves scale on financial incentives alone. The strongest policy outcomes all combine at least two policy pillars within a regulatory structure that makes inaction progressively costly. Programmes relying on a single instrument, such as Nigeria's framework-only approach or Thailand's market-driven ESCO model, consistently underperform. Second, monitoring and evaluation emerges as the most widespread gap: most programmes lack verified post-retrofit consumption data, and only Canada's evidence-based redesign of its national scheme demonstrates M&E driving meaningful policy correction. Third, equity remains structurally unresolved, with emerging economies facing the sharpest challenge at the intersection of energy poverty, informal tenure, and nascent financing markets. Taken together, these findings suggest that the central policy question is no longer which instrument to choose, but how to combine several into coherent, administratively simple, and locally adapted packages.

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1. Introduction

Buildings account for approximately 36% of final energy consumption and nearly 40% of energy-related CO_2 emissions worldwide, making the existing building stock a critical lever for deep decarbonisation (IEA, 2023; Papangelopoulou et al., 2023). Without a dramatic acceleration in retrofit rates from the current global average of below 1% of the stock per year to at least 2–3%, net-zero trajectories will remain out of reach (IEA, 2022a).

In line with the IEA Energy Efficiency Policy Toolkit (2025), effective policies consist of an approach combining incentives, information and regulation. Financial barriers are consistently reported as the most significant obstacle to energy-efficient retrofit investments (Gillingham & Palmer, 2014; Konhäuser et al., 2026; Casquero-Modrego et al., 2025). This makes incentive packages, such as grants and loans, a central policy tool. Nevertheless, finance mechanisms alone are not a driver of demand, but an enabler, and should be introduced alongside regulation to increase uptake (Brown et al., 2019). Energy efficiency regulations are also unique in broader climate policy for a positive association between support and knowledge of policy effectiveness, meaning that targeting the information gap is pivotal (Rhodes et al, 2014).

Yet the gap between policy design and implementation in practice remains stubbornly wide. Retrofit investment decisions are shaped by layered financial, behavioural, and regulatory considerations that standard policy frameworks frequently underestimate (Petkov et al., 2021), and achieving large long-term savings requires coherent, multi-instrument strategies rather than isolated measures (Sebi et al., 2019). Even where instruments are well-designed, fragmented supply chains can prevent households from acting, pointing to the need for integrated delivery models capable of accompanying beneficiaries through the entire process (Réfabert, 2021).

A useful reference for what such policies should include comes from Neme et al. (2011), who identify a consistent set of programme elements: retrofit advice to consumers; marketing strategies to stimulate both demand and supply; technical training and certification of retrofit contractors; up-front cost discounts and innovative financing; quality assurance; R&D investment; and building-efficiency labelling. In practice, no single programme encompasses all of these dimensions simultaneously. This report does not claim to identify such a comprehensive model; rather, it analyses a selection of policies that, taken together, reflect many of these criteria, treating them as a reference framework against which real-world good practices can be mapped and assessed.

This report examines energy efficiency policies for building retrofits across a geographically diverse set of national contexts. Country selection was guided by regional representativeness, policy framework maturity, availability of documented programme experience and socioeconomic relevance. This broadening is especially urgent as buildings in emerging economies account for a rapidly growing share of global energy demand, yet remain the least served by dedicated retrofit instruments (IEA, 2022b).

The methodology used in this report is intentionally pluralist, combining a systematic review of peer-reviewed academic literature with analysis of official reports published by ministries, national energy agencies, and intergovernmental bodies.

2. Regional & Country Analysis

A) Africa

African states face a distinctive challenge in designing retrofit policy. Unlike higher-income contexts where the challenge is primarily financial, African governments must simultaneously address regulatory gaps, weak enforcement capacity, nascent financing markets and large informal housing sectors (UN-Habitat, 2024). Many countries have adopted energy efficiency codes under the impetus of international climate commitments, yet these instruments tend to focus on new construction rather than the existing stock, where the majority of inefficiency resides (UNEP, 2024). The literature consistently identifies three enabling conditions: financial incentives, technical quality assurance, and robust monitoring and evaluation (Economidou et al., 2020; Fawcett et al., 2021). Tunisia and Nigeria (Annex 1, Annex 2) illustrate how the presence or absence of these conditions shapes outcomes.

1. Policy Design: Emerging Incentives and Information

PROMO-ISOL targets a precise objective: rooftop insulation, the primary source of heat gain and loss in Tunisia's climate, with a goal of 65,000 roofs over five years, two-thirds in existing dwellings, one-third in new homes outside the 2009 Thermal Regulation's scope. Its incentive structure combines a 25% capital subsidy capped at 21 TND/m² (7.25 USD/m²), a 7 000 TND (2 430 USD) concessional loan at 5% over seven years, and a mandatory pre-disbursement technical inspection, directly addressing both the upfront cost barrier and installation quality risk. The programme also sits within a coherent ecosystem: the Energy Transition Fund simultaneously supports PROMOCLIM, PROMOFRIGO, PROMOLED and PROSOL, reinforcing uptake across sectors.

NEEAP, by contrast, operates as a framework document rather than an operational programme. It promotes efficient lighting, passive cooling and improved building envelopes across all building categories, with some demand-side support through import duty waivers and VAT exemptions. While well-anchored in Nigeria's regulatory architecture, mandated by the National Renewable Energy and Energy Efficiency Policy and aligned with the Building Energy Efficiency Code, it designates no specific retrofit intervention and no enforcement mechanism for existing buildings. Frameworks absent financing windows and institutional mandates rarely generate measurable retrofit activity at scale (Gillingham et al., 2009; Kern et al., 2017).

2. Financing Models

PROMO-ISOL's blended finance model is its most replicable feature. Channelling subsidy and concessional credit simultaneously through ANME and partner banks structurally lowers both affordability and risk barriers. The pilot phase was valued at €2.14 million ($2.52 M) and co-financed equally by the Italian Ministry of Environment and Energy Security, but no further figures were released once the program was launched.

NEEAP establishes no dedicated retrofit financing window. Its fiscal incentives, duty waivers and VAT exemptions, are equipment-level measures that leave the structural cost barriers to whole-building retrofit unaddressed. The absence of a financing instrument is consistently identified as the principal predictor of low retrofit uptake by literature (Kern et al., 2017).

3. Equity and Accessibility

Equity constitutes a persistent shortcoming of the PROMO-ISOL program, whose structure and incentive levels do not sufficiently support middle- and low-income households. Additionally, PROMO-ISOL's multi-step administrative process (application, validation, installation, inspection, payment) actively discourages households facing the greatest barriers to participation. Where installations are completed, however, improved thermal insulation generates meaningful health co-benefits, particularly for elderly residents exposed to extreme heat.

NEEAP's equity deficit is more fundamental. With 48.5% of Nigeria's urban population in informal settlements (UN-Habitat, 2024) and no policy pathway for this segment, the plan structurally excludes the stock with the greatest efficiency needs. Awareness gaps on passive cooling benefits compound the problem. Passive cooling retrofits at scale would yield substantial public health co-benefits, reduced heat exposure and lower peak grid demand, but the current design provides no mechanism to deliver them.

4. Monitoring, Evaluation, and Scalability

Both programmes share their most consequential weakness: the absence of robust M&E. PROMO-ISOL has released no consolidated public data on energy savings, insulated surface area or emissions reductions, limiting policy learning, weakening funder accountability and foreclosing the MRV infrastructure that could eventually support carbon market participation. NEEAP's situation is more structurally deficient: no institution is tasked with tracking progress, no monitoring system is embedded in the plan's design, and enforcement for existing buildings is effectively absent. Without mandate and data, the framework cannot self-correct (Kern et al., 2017).

For instance, Tunisia's National Energy Agency (ANME) has not been able to properly address the two main challenges its PROMO-ISOL program faces: the incentives remaining too low for middle and low-income households on the one hand, and on the other hand, the thermal roof-insulation sector being underdeveloped on the supply side, with too few qualified companies to meet demand. A robust M&E could significantly help ANME address these gaps. Similarly, as advocated by the UN Climate Technology Center & Network's technical assistance, an institutional structure for monitoring and reporting would facilitate the implementation of energy efficient technologies and practices in Nigeria (CTCN, 2021).

5. Conclusions

The Tunisian and Nigerian cases yield clear lessons. Effective retrofit policy requires operational mechanisms, such as blended finance, technical quality assurance and mandatory M&E, not merely regulatory framing. Tunisia shows that integrated incentive design can work in a resource-constrained context when embedded in a coherent policy ecosystem. Nigeria shows that without these tools, well-designed frameworks fail to deliver. Across Africa, closing this implementation gap is the defining challenge for building retrofit policy in the decade ahead.

B) Europe

The European building stock drives approximately 40% of EU final energy consumption and is the third sector of GHG emissions (European Commission, 2024). It is also quite inert as 85 to 95% of the buildings that will stand in 2050 are already built, meaning that most were erected under poorly efficient thermal standards, making the retrofit challenge unavoidable. Yet the EU's annual renovation rate stands at roughly 1%, placing the sector over 40% behind its required decarbonisation pathway (BPIE, 2024). The revision of the EPBD (2024) now requires member states to cut average building-sector energy consumption by at least 16% by 2030, turning the retrofit question into a binding compliance issue. Hence, which concrete policy instruments have proven effective at translating European retrofit targets into delivered renovations, and what transferable lessons can be drawn for the wider EU?

Alario (2021) estimates that EU renovation investments must double (~€170 billion per year) to meet climate targets, but economic incentives alone cannot lift the main barriers.

1) **Financing and split incentives**. Around 32% of EU households are tenants: the agent paying for the retrofit is not the one benefiting from lower bills. Combined with European owners' low use of loans for retrofits (Alario, 2021), this produces structural under-investment that grants alone cannot reverse.
2) **Information asymmetry and risk aversion**. France Stratégie (2020) estimated that 5 to 9 million French dwellings could be retrofitted without public aid on strictly financial grounds, yet remain untouched because households underestimate profitability and fear indebtedness.
3) **Administrative complexity**. Fragmented contractor markets and paperwork generate a transaction cost that helps explain why single-measure works dominate and deep retrofits stagnate.

Energy poverty compounds these failures. An April 2026 Institut Montaigne survey shows that 34% of French households judge their energy expenditure "hardly bearable" - the households trapped in the worst dwellings are those least able to front the capital or navigate the system.

The two case studies analysed below target these failures along two complementary axes : blended financing, and industrialising the delivery process itself.

1. Policy Design

France's response to the financing barrier rests on two instruments. MaPrimeRénov' (MPR) provides income-differentiated upfront grants across three pathways : single measures, deep renovations (requiring a mandatory audit and ≥ two-class DPE jump), and collective retrofits in multi-apartment buildings (≥35% savings). The Certificats d'Économies d'Énergie (CEE) scheme, under art. 9 of the EU EED, imposes quantified savings obligations on energy suppliers, who finance works or buy certificates on a dedicated secondary market. Both are embedded in the 2021 "loi climat et résilience", which imposes a progressive rental ban for the least efficient dwellings, and in the revised DPE and RGE contractor certification. The instructive feature is the pairing logic as CEE premia typically top up MPR grants, and the "parcours accompagné" bundles financial aid with mandatory audit.

Ireland's National Home Energy Upgrade Scheme targets 500 000 BER B2 retrofits by 2030. Its innovation is not the grant level, which is similar to other EU countries, but the One-Stop Shop model : households deal with a single SEAI-registered provider managing the entire deep retrofit from initial assessment to contractor coordination and post-completion inspection. What makes Ireland distinctive is that the delivery process itself is treated as a policy instrument. Rather than leaving households to navigate a fragmented market, the model externalises the transaction cost of renovation away from the household.

2. Financing Models

The French pairing logic raises the share of renovation costs covered and crowds in private capital (~ €3 bn/year from CEE) alongside public funding (~ €4 bn/year from MPR). Since 2020, ~2.3 million dwellings have been supported, mobilising over €32 billion of investment, with roughly 569 000 retrofits in 2023. The four income brackets improve targeting and cost-effectiveness.

In Ireland, the grant covers up to ~ 50% of eligible costs, topped up by a €500 million low-interest loan scheme. Access to the highest grant levels is conditioned on going through an OSS provider, which channels demand toward deep retrofits.

3. Equity and Accessibility

MPR's four income brackets place modest households at the centre of the French scheme, and the rental ban indirectly protects tenants by forcing landlords to upgrade the least efficient dwellings. In Ireland, equity is covered by the fully funded Warmer Homes Scheme, which delivers free deep retrofits to vulnerable households, and reinforced by the OSS itself, which lowers informational and administrative access barriers.

4. Monitoring, Evaluation, and Scalability

First, in France, deep renovations remain marginal as 43 000 were engaged in 2022 against the 600 000 needed, and supported works are dominated by standalone heat-pump installations. Second, policy stop-and-go has been damaging because MPR has undergone repeated rule changes and a suspension in 2024-2025, eroding the long-term market signal that retrofits require.

Ireland, by contrast, embeds a partial pay-for-performance mechanism through post-retrofit BER certificates, which verify actual performance. In Q1 2024, nearly 12 000 upgrades were completed (+18%), with 5 000 homes reaching BER B2 or higher (+53%), making Ireland one of the few EU countries showing a real acceleration in deep retrofit. Unlike Germany's BEG, where over 90% of supported works remain single measures, Ireland reaches deep retrofits at scale because it made the OSS the mandatory delivery vehicle for the highest grant levels.

5. Conclusions

Blended public-private financing works at scale and crowds in private capital, but struggles to deliver deep retrofits unless coupled with stable rules and mechanisms addressing non-financial barriers. The OSS's integrated service approach tackles the information asymmetry and administrative complexity that financial instruments alone cannot. The French and Irish experiences are two halves of a coherent retrofit architecture that EU Member States would gain to combine.

C) North America

This chapter examines the North American region through two case studies in Canada and the United States respectively: the Canada Greener Homes Initiative (CGHI), a national residential retrofit programme, and the Renew Boston Trust (RBT), a municipal public-sector retrofit scheme.

1. Policy Design

The CGHI directly targets the financial barrier to retrofit uptake. Its initial design offered grants (up to CAD $5000) and long-term, interest-free loans (up to CAD $40,000). Mandatory pre- and post-retrofit energy audits are a strength of the programme, introducing an informational instrument. The CGHI is also complimented by Canada's 2030 Emissions Reduction Plan and stackable with provincial programs.

However, the CGHI is a voluntary scheme. While voluntary policies face less public opposition in Canada, compulsory measures are needed to meet climate targets (Odland et al., 2023). Moreover, despite heat pumps being the most effective measure for energy and carbon reduction (Heidari et al., 2022), only 6 out of 10 households installed them through CGHI, suggesting that financial support alone is not enough to steer households towards the most effective technologies.

The RBT, as a municipal retrofit programme, operates under different constraints but offers important insights through its position in Boston's regulatory landscape. It finances improvements through Energy Savings Performance Contracts (ESPCs), allowing retrofits at no cost to taxpayers. Designed to support compliance with Boston's Building Energy Reporting and Disclosure Ordinance (BERDO 1.0), the programme now functions as a lead-by-example model as BERDO 2.0 introduces emissions standards.

As a result, the RBT is not only aligned with regulation, but helps make it workable, while also building the capacity and information base needed for BERDO 2.0's implementation. When governments adopt EE policies in their own buildings, this signals that energy efficiency is a priority (Goldman et al., 2005).

2. Financing Models

Given that project costs are the primary inhibitor of energy-efficient retrofits, an analysis of the different financial mechanisms of the CGHI and RBT is essential in determining what lessons can be learned (Konhäuser et al., 2026). Risk, long payback periods and administrative burdens are also key deterrents, particularly in the residential sector (Brown et al., 2019; Gillingham & Palmer, 2014). As such, financing models that both reduce cost and perceived risk are more likely to drive uptake.

The CGHI relies on a combination of grants and interest-free loans, lowering the financial threshold for homeowners. However, this model still places responsibility on households to initiate and manage retrofits, which can limit participation. The 2025 Affordability Program (CGHAP) redesign explicitly addresses this by offering retrofits at no cost and through a direct-install model, meaning that retrofits are managed and implemented directly by third parties.

By contrast, the RBT operates through ESPCs, shielding the City from both financial and technical risk. This model is particularly effective in the public sector, where centralised ownership provides reliability and enables projects to be aggregated (Goldman et al., 2005; Fennell et al., 2016). Retrofits are reframed from a cost to a managed investment, which is less easily replicated in the private sector. Nevertheless, this newer self-financing model presents a significant opportunity for programmes for whom a more traditional funding model, like in the CGHI, is less economically feasible.

3. Equity and Accessibility

Equity concerns are central to retrofit policy, especially considering the well-established links between energy poverty, housing conditions and health (Ballesteros-Arjona et al., 2022). Equally structural barriers continue to limit investment in retrofits. This is well observed through the split incentive problem, wherein landlords invest in retrofits but tenants benefit from lower energy bills. (Melvin, 2018; Gillingham & Palmer, 2014). This issue is compounded by the fact that it impacts the low-income energy poor the most (Bird & Hernández, 2012). As a result, policies that do not explicitly address accessibility can reinforce existing inequalities.

The CGHI's initial design reflects this limitation as it excluded renters. Grants and loans also meant that upfront costs remained, further excluding low-income households. The CGHAP redesign to expand accessibility now specifically includes renters and low-income households. Nevertheless, while no-cost retrofits are an important step, a focus on maximising energy and cost savings often

incentivises shallow retrofits (Tozer et al., 2024). To promote deeper retrofits and address energy poverty, the policy domain needs to be widened.

The RBT does not directly engage with the split incentive problem, as it targets publicly owned buildings. Nonetheless, the model demonstrates that retrofits can be delivered without upfront costs, especially at the larger scale. This ultimately raises the question of whether similar approaches could be extended to social housing, where both equity and energy savings gains would be significant (Vijayan et al., 2025).

4. Monitoring, Evaluation and Scalability

Robust monitoring and evaluation (M&E) are central to effective energy efficiency policy, both to ensure accountability and to inform future policy design (IEA, 2025). Credible data on energy savings and performance helps justify continued investment or refine programmes over time. This is particularly important as a lack of planning reliability hampers energy-efficient retrofits (Konhäuser et al., 2026).

The centrality of M&E is visible in how each programme has adapted over time. The CGHI's transition to CGHAP reflects a direct response to uptake data, which showed that low-income households were not accessing the existing incentives. Similarly, the RBT's cross-departmental structure has enhanced institutional capacity, enabling Boston to extend its monitoring capacity beyond municipal buildings to the wider building stock under BERDO.

Despite these strengths, both programmes face limits when it comes to scale. The CGHI has reached over 400,000 households, which while significant, is small relative to Canada's total housing stock, which lies in the tens of millions.

The RBT, which has been effective within its scope, may face difficulty in being replicated by the private sector, who will now have to implement retrofits under BERDO 2.0. The RBT has been aided by centralised ownership and bundling measures, which the private sector and smaller projects may not necessarily benefit from.

5. Conclusions

Both the CGHI and the RBT align closely with best practices in energy efficiency policy. They demonstrate strong performance in key areas: M&E, financial design, integration within broader policy frameworks and evidence-based adaptation during implementation.

Nevertheless, an analysis of the gaps suggests that large-scale decarbonisation will require a combination of improved incentives and stronger regulatory measures, including minimum energy performance standards and mandatory disclosure. Without this, even well-designed programmes will struggle to achieve the scale necessary to meet climate targets.

D) Latin America

Energy efficiency policies remain scarce across Latin America: fewer than a third of countries have minimum energy performance standards for appliances, and mandatory building energy codes are the exception rather than the rule (IEA, 2023). Yet buildings represent one of the main drivers of projected electricity demand growth in the region, making retrofit programmes one of the most cost-effective levers available to governments seeking to decouple economic growth from energy consumption. Chile and Mexico stand out as two instructive cases, illustrating how two different policy designs can deliver results and offer replicable models.

1. **Policy Design: Targeted subsidy for retrofits vs. Appliance replacement for electricity savings**

Chile's Programa de Mejoramiento de Viviendas y Barrios (PMVB), established under Decree DS N°255 in 2006 and expanded under DS N°27 in 2016, subsidises retrofitting interventions for low-income households in urban areas exceeding 5,000 inhabitants. Eligible measures include thermal insulation, window upgrades, solar thermal collectors, photovoltaic panels, and the replacement of wood-burning stoves, calibrated to regional climatic conditions. The programme complements an existing energy performance certificate scheme (*Calificación Energética de Viviendas - CEV)*, which had until PMVB only focused on new buildings. By channelling subsidised retrofits, PMVB progressively brings older buildings into the CEV system, generating performance data on a segment of the housing stock that would otherwise remain invisible to policymakers.

Mexico's Programa de Mejoramiento Integral Sustentable, operated by FIDE (Mexico's Energy Savings Trust Fund), SENER (Ministry of Energy) and CFE (State-owned electricity utility) since 2022, takes a fundamentally different approach. Rather than subsidising pure retrofitting improvements, it enables low- and middle-income households to acquire efficient technologies labelled under the NOM-ENER energy efficiency standards (solar water heaters, photovoltaic panels, efficient AC, LED lighting, refrigerators, etc.) worth up to 73,000 pesos (4210 USD), repaid over five years through their CFE electricity bill.

2. **Financing Models**

Chile's financing structure is primarily public, drawn from the national housing budget with co-investment from the Ministry of Energy, covering up to 5.369 USD for thermal conditioning and 2.220 USD for energy efficiency works. For projects exceeding the subsidy ceiling, households can access preferential green credit lines through BancoEstado at a minimum rate of 0.52% over up to 60

months. The model is grant-heavy by design, reflecting the limited financial capacity of the target population.

Unlike Chile's subsidy model, Mexico adopts an on-bill financing scheme, in which the cost of energy efficiency improvements is repaid through the savings generated by the investment itself and embedded directly in the household's utility bill. By routing repayment through the CFE electricity bill, the programme eliminates the need for traditional creditworthiness assessments, with the possibility of service interruption acting as an effective enforcement mechanism. Its defining innovation is that the scheme is self-financing: energy savings from more efficient appliances help offset repayment costs, keeping the net increase in the household's monthly bill modest or negligible over time, while also reducing the government's expenditure on electricity subsidies (Gopal et al., 2014).

3. Equity and Accessibility

Chile's most distinctive feature is its delivery through certified Entidades Patrocinantes, accredited organisations that guide households through the entire process, from application to completion at no cost to the beneficiary. Many proactively seek out eligible communities, reaching households who would never self-identify as applicants. Collective applications are encouraged as well, enabling collective-level interventions and reducing per-unit costs. Social equity is embedded in PMVB's design: elderly people, people with disabilities, and families in the bottom 60% of Chile's Social Household Registry are prioritised.

Mexico's equity record is more mixed. Although the CFE electricity bill allows a universal delivery channel (CFE being the only electricity supplier in Mexico), the outreach relies heavily on participating appliance retailers, a model that underserves the most isolated and least financially literate households.

4. Monitoring, Evaluation, and Scalability

Both programmes show promising early signs, though robust outcome measurement remains underdeveloped. Chile's budget grew sharply from $30.9 to 149.7 million between 2022 and 2023, and beneficiary numbers rose from 15,590 to 59,041 households (DIPRES, 2023), although these figures are partly inflated by the resumption of projects suspended during COVID-19. In Mexico, results for the current programme are not yet fully documented, but the earlier PSEE (*Programa de Sustitución de Equipos de Uso Final de Energía Eléctrica, 2009–2012*) provides a credible optimistic projection: it issued 263.000 credits and delivered 298 GWh per year in energy savings in 2009 (FIDE, 2010). The challenge for both countries is now to build the monitoring infrastructure that

would allow these results to be verified, compared, and built upon. The forthcoming extension of CEV labelling to existing buildings in Chile is a step in the right direction, but systematic M&E remains absent from both programmes' design.

5. Conclusions

The Chilean and Mexican cases yield lessons that extend well beyond the region. Chile demonstrates that embedding professional intermediaries into programme delivery, at no cost to the beneficiary, is a powerful tool for last-mile reach. Mexico shows that on-bill financing, anchored to a universal utility infrastructure, can remove the credit barrier without relying on grants alone. Neither model requires sophisticated capital markets or complex regulatory prerequisites, making both transferable to other developing country contexts.

Yet both programmes share a limitation: a nationally coordinated outreach strategy, communicating savings in concrete monetary terms through community-based intermediaries, remains an unmet need. Smart delivery channels are not sufficient: reaching the most vulnerable requires outreach that goes beyond existing infrastructure. Closing this gap is the defining challenge for building retrofit policy in Latin America.

E) South-East Asia

1. Overview of Singapore and Thailand's retrofit plans

Buildings in Singapore account for about 40% of its total electricity consumption, and energy efficiency has shown a fast-growing trend (BCA, 2021). About 66% of existing buildings were greened under the Green Mark certification by 2025, achieving 20% to 30% energy savings compared to non-certified buildings. Among these, Super Low Energy (SLE) buildings can achieve at least 60% energy savings. The updated Green Mark Incentive Scheme for Existing Buildings 2.0 aims to green 80% of buildings by 2030 (Ministry of National Development, 2021; BCA, 2022b).

In Thailand, energy consumption in the building sector accounts for approximately 20-30% of total energy use (IEA, 2024). Thailand's building retrofit strategy is primarily based on the Building Energy Code (BEC) and the ESCO Fund. The BEC sets minimum energy performance standards for new and large retrofitted buildings, whereas the ESCO Fund plays a key role in addressing financial barriers. ESCO projects have achieved energy savings of approximately 15% to 30%, with more than 50 projects implemented (International Institute for Energy Conservation, 2024). At the national level, Thailand aims to reduce overall energy intensity by 30% by 2037 compared to 2010 levels, under the Energy Efficiency Plan (Department of Alternative Energy Development and Efficiency, 2015).

2. Policy Design

Singapore's retrofit plan aims to use a mix of policies to address energy efficiency in the building sector by adopting a comprehensive and mutually complementary policy ecosystem (annex 7). Singapore's GMIS 2.0 utilizes grants to incentivize existing building owners to carry out retrofits on clear target buildings and items (BCA, 2022c). In parallel, the mandatory Green Mark scheme imposes regulatory obligations on eligible buildings, which are rated on the basis of measurable energy savings and emission reductions (BCA, 2022b, Annex 7, Annex 16).

In Thailand, it relies on a cross-sector energy intensity reduction by 30% by 2037 rather than detailed retrofit goals in the building sector. The Building Energy Code (BEC) is an energy efficiency regulation covering medium-to-large new constructions and retrofitted buildings under the Ministerial Regulation B.E. 2563 (Department of Alternative Energy Development and Efficiency, 2021), focusing on regulatory compliance for market entry, yet lacking rigorous operational enforcement. Thailand's Energy Service Company (ESCO) mechanism complements the BEC but has weak policy constraints due to the fact that it operates through market-based Energy Performance Contracting (EPC) (Climate Technology Centre and Network, 2021).

3. Financing Models

GMIS 2.0 is fully supported by government fiscal subsidies, $63-million grant. Singapore provides strong financial accessibility up to 50% of qualifying costs to reduce its upfront cost in retrofit investment, although eligibility requirements may limit participation (Annex 7). However, financial accessibility in Thailand remains constrained by limited access to commercial financing despite public support mechanisms (CTCN, 2021). In Singapore, financial risks are partially absorbed by the government through grants, limiting leverage of private capital, whereas Thailand's ESCO model transfers performance risk to service providers with stronger leverage ratios. Leverage ratios of up to 1:5 to 1:8 have been observed in energy efficiency financing programs in Southeast Asia, including ESCO-based mechanisms (Annex 8). Therefore, even though Singapore's grant incentivizes engagement in retrofitting, its long-term fiscal sustainability raises concerns compared with the ESCO Fund mechanism ensuring financial sustainability .

Moreover, Singapore enjoys high levels of banking cooperation and engaged financial institutions in green financing, supported by MAS' grant schemes and risk-sharing arrangements (MAS, 2020; OECD, 2025). Thailand's ESCO sector adopts shared saving EPC model, supported by national government revolving funds and international institutional financing. Nevertheless, commercial bank participation remains low, and financing barriers are substantial (OECD, 2025; IIEC, 2024).

4. Equity and Accessibility

GMIS 2.0 sets high eligibility thresholds, requiring mandatory Green Mark certification and professional application procedures. The scheme predominantly caters to large commercial buildings with a minimum gross floor area of 5,000 m², creating significant participation barriers for small-scale buildings and small and medium-sized enterprises (SMEs). But its unified national Green Mark standards, application system, and one-stop public services through the Building and Construction Authority (BCA) ensure equal access across all regions and no geographical disparities (annex 8, BCA, 2022b).

By contrast, information on building retrofits in Thailand is fragmented, local technical capacity remains inadequate, and awareness among building owners is limited (Netherlands Organisation for Applied Scientific Research, 2014; CTCN, 2021). Thailand's ESCO initiatives also offer insufficient support for small and medium stakeholders, accompanied by low stakeholder awareness and poor technological accessibility (CTCN, 2021).

5. Implementation & Governance & Scalability

GMIS 2.0 enforces mandatory Measurement & Verification (M&V) protocols for required buildings via permanent metering devices, compliance with the International Performance Measurement and Verification Protocol (IPMVP), and independent third-party validation. The programme adopts phased disbursement mechanisms, subsidy recovery for underperformance (BCA, 2022a). In contrast, the ESCO Fund relies on outcome-based monitoring through verified energy savings at the project level, whereas the BEC follows a compliance-based approach centred on design-stage verification and regulatory standards.

GMIS 2.0 has achieved high market penetration and efficient implementation; however, it is heavily reliant on government fiscal expenditure, making it poorly replicable for developing countries with limited financial resources (IEA, 2023). Thailand's BEC is a low-cost mandatory standard with strong replicability suitable for large-scale national deployment, despite its limited implementation depth (DEDE 2021-2023). The Thai ESCO model holds theoretical scalability potential, yet its market uptake remains extremely low due to financing bottlenecks, stakeholder trust deficits, and institutional capacity gaps.

3. Conclusion

The policies surveyed in this report point to a clear finding: instruments work when matched to a diagnosed barrier, not applied generically. France's coupling of grants, certified advisors, and progressive rental bans works because each element targets a distinct obstacle (cost, quality, regulatory inertia). Where programmes rely on a single lever, results are more fragile: Thailand's ESCO model reaches only the most financially attractive projects, and Nigeria's well-designed framework has produced no measurable activity without dedicated financing.

No programme in the dataset achieves scale on incentives alone. The strongest results (Canada's 400,000 households, Singapore's 66% of commercial stock greened, France's 2.3 million dwellings) all combine at least two IEA toolkit pillars within a regulatory structure that makes inaction increasingly costly over time. Programmes lacking this anchor remain vulnerable to low uptake and stop-and-go politics, as Mexico and Tunisia both suggest.

Monitoring and evaluation is where most programmes fall shortest. Canada's shift from the Greener Homes Grant to the Greener Homes Affordability Programme, redesigned specifically because evaluation revealed systematic exclusion of low-income households, is the clearest example of M&E enabling better policy. It is also the exception: Chile and Nigeria publish no energy or CO_2 savings data, Mexico acknowledges M&E gaps explicitly, and most programmes lack verified post-retrofit consumption figures. Without outcome-based reporting disaggregated by building type, tenure, and income group, cross-country learning remains inference rather than evidence.

Finally, equity remains the most structurally unresolved gap. Chile's Entidades Patrocinantes and Canada's direct-install stream come closest to reaching the hardest-to-treat households, but coverage stays partial. This challenge is sharpest in emerging economies, where retrofit policy is nascent, financing thin, and the intersection of energy poverty, informal tenure, and rapid urbanisation makes high-income country models difficult to transplant. Developing frameworks suited to these contexts is the field's least addressed frontier.

Taken together, the comparative analysis suggests that the central question that policy makers will have to face for retrofit policy is no longer which instrument to choose, but how to combine several into coherent, administratively simple and locally adapted packages.

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Appendix

Annex 1: Tunisia's Case Study

Tunisia – PROMO-ISOL Program

Country/Region/Province/City: Tunisia (National), 2024-ongoing
Sector and approach: Buildings (Residential); Incentive and Information
Source: Promo-Isol Program

Objective
The PROMO-ISOL programme aims to reduce energy consumption in Tunisian homes by improving the thermal insulation of rooftops, which represent the main source of heat gain and loss in the country's climate. Its stated objective is to insulate 65,000 roofs over a five-year period, with two-thirds of interventions targeting existing dwellings and one-third focusing on new homes that fall outside the scope of the 2009 Thermal Regulation of Buildings.

Results
Publicly available results remain limited, as the program stayed at pilot stage for several years and only began implementation in 2024. No consolidated data on energy savings, insulated surface area or emissions reductions has been published by the national energy agency (ANME). The pilot phase was valued at €2.14 million, co-financed equally by the Italian Ministry of Environment and Energy Security and Tunisian institutions[1]. Beyond this financial information, no performance indicators have been released.

Unique aspects of the policy
PROMO-ISOL stands out for its comprehensive incentive structure, combining a direct subsidy, a concessional loan and the requirement to use certified installers, which together help ensure affordability and installation quality. It is also distinctive in the way it integrates into Tunisia's broader PROMO ecosystem, creating synergies with programs on efficient cooling, lighting, refrigeration, and solar water heating. Another unique feature is its targeted scope: it focuses specifically on individual houses not covered by the national thermal regulation, a segment that often escapes energy-efficiency policies. The program also adopts a phased approach, beginning with a 3,000-home pilot to test administrative and financial mechanisms before scaling up.

Description
PROMO-ISOL is a national scheme managed by the National Agency for Energy Management (ANME) and dedicated to improving rooftop insulation in individual dwellings. It provides a subsidy covering up to 25 percent of investment costs, capped at 21 dinars per square meter (7.25 USD/m²) for existing homes, along with an additional 6-dinar subsidy per square meter for the pilot phase. Beneficiaries can also access a concessional loan of 7 000 dinars (2 430 USD) at an interest rate not exceeding five percent over seven years through participating banks. A mandatory technical inspection is required before any subsidy is released, ensuring compliance with program standards.

Alignment with the regulatory and policy frameworks

[1] https://www.mase.gov.it/portale/documents/d/guest/1_promo_isol_tunisia-engl-pdf

The program is fully aligned with Tunisia's broader energy-efficiency and building-sector strategies. It complements the 2009 Thermal Regulation of Buildings by covering homes that are not subject to the regulation, thereby filling a major policy gap. It is also consistent with the National Strategy for Energy Management in Buildings and relies on the Energy Transition Fund, which finances all PROMO programs. PROMO-ISOL fits within a policy environment that includes mandatory energy performance certification and a suite of complementary efficiency and renewable-energy initiatives.

Implementation and enforcement

Implementation is shared between ANME, which oversees technical standards, certification and quality control, and the partner banks that issue concessional loans. Enforcement relies on a mandatory technical inspection prior to subsidy disbursement, ensuring that installations meet program requirements. However, the administrative process involves multiple steps (application, technical validation, installation, inspection and payment) which may slow uptake. However, the main challenges appear to be coming from the incentives which are still too low for middle and low-income households, as well as from the supply side, with the thermal roof-insulation sector being underdeveloped, with too few qualified companies to meet demand. Another, key barrier remains the lack of transparent, publicly available monitoring and evaluation, as no systematic reporting has been published to date.

Lessons learned

The PROMO-ISOL pilot shows that combining subsidies, concessional loans and certified installers can create a strong incentive structure and ensure high-quality installations, especially when paired with successful complementary programs such as PROMO-CLIM, PROMO-FRIGO, PROMO-LED and PROSOL. At the same time, the initiative highlights four persistent challenges: the absence of systematic reporting, an administratively heavy, the level of incentives and the need to incentivize and train companies for rooftop thermal retrofitting. Overall, the program demonstrates both the value of integrated policy design and the need for streamlined procedures and robust monitoring.

Annex 2: Nigeria's Case Study

Nigeria – National Energy Efficiency Action Plan (NEEAP)

Country/Region/Province/City: Nigeria (National and Federal), 2016-ongoing
Sector and approach: Buildings (Residential, Industrial, Commercial and Public buildings)
Source: National Energy Efficiency Action Plan

Objective

Nigeria's National Energy Efficiency Action Plan (NEEAP) aims to improve energy performance across residential, commercial, industrial and public buildings by promoting efficient appliances, better cooling strategies and improved building-envelope performance. The overarching objective is to reduce national energy demand, alleviate pressure on the electricity grid and support long-term energy security through efficiency gains rather than new generation capacity.

Results

No retrofit-specific results have been reported under the NEEAP. The plan does not include a dedicated monitoring and evaluation framework, and no consolidated data exists on the number of buildings retrofitted, energy savings achieved or emissions reductions.

Unique aspects of the policy

Nigeria's policy landscape is notable for its breadth: the country has developed a comprehensive suite of strategies, guidelines and codes addressing energy efficiency in buildings, including the NEEAP, the National Renewable Energy and Energy Efficiency Policy, the Building Energy Efficiency Code and the Building Energy Efficiency Guidelines. This creates a strong conceptual framework that recognises the importance of passive design, efficient cooling and lighting, and appliance performance.

Description

The NEEAP is a national plan covering all major building categories and promoting measures such as efficient lighting, improved cooling systems, better appliances and passive design strategies. It is supported by fiscal incentives such as import duty waivers and VAT exemptions for efficient equipment. While the plan identifies priority actions and technologies, it does not establish a dedicated retrofit programme to drive large-scale upgrades in existing buildings.

Alignment with the regulatory and policy frameworks

The NEEAP is fully aligned with Nigeria's broader energy and climate policy framework. It is mandated by the National Renewable Energy and Energy Efficiency Policy and complements the National Energy Policy, which identifies buildings as a priority sector. It also aligns with the Building Energy Efficiency Code and the Building Energy Efficiency Guidelines, which set minimum standards for new construction and promote passive cooling and efficient lighting.

Implementation and enforcement

Implementation of the NEEAP has been limited. The plan does not include a monitoring and evaluation system, and no institution has been tasked with systematically tracking progress. Enforcement of building-efficiency standards is weak, particularly for existing buildings, and the absence of a dedicated financing mechanism has prevented widespread adoption of retrofit measures. Awareness gaps among homeowners and stakeholders further constrain uptake, especially regarding passive cooling benefits and the needs of informal housing. As a result, the policy framework remains largely aspirational, with limited translation into concrete retrofit activity. As advocated by the UN Climate Technology Center & Network's technical assistance reports, an institutional structure for monitoring and reporting would facilitate the implementation of energy efficient technologies and practices in Nigeria[2].

Lessons learned

The Nigerian experience shows that a strong policy framework on paper does not automatically translate into effective retrofit deployment. The programme also highlights persistent awareness gaps, particularly regarding passive cooling benefits among homeowners, and the need for tools tailored to high cooling demand and informal housing.

2 https://www.ctc-n.org/technical-assistance/projects/developing-institutional-framework-energy-efficiency-act-and

Annex 3 : Ireland's Case Study

Ireland - National Home Energy Upgrade Scheme

Sector and approach : Buildings - Incentive + Information

Source : https://www.seai.ie/grants/home-energy-grants/one-stop-shop

Objective

Ireland's national home energy upgrade scheme, administered by the Sustainable Energy Authority of Ireland (SEAI), aims to retrofit 500,000 homes to a Building Energy Rating (BER) of B2 or higher by 2030. Its central innovation is the one-stop shop (OSS) model, which provides households with a single point of contact managing the entire deep retrofit process. It aims to address the non-financial barriers including administrative complexity and coordination failures that financial incentives alone fail to overcome.

Description

Grants cover up to approximately 50% of eligible renovation costs for deep retrofits. A complementary €500 million low-interest home energy upgrade loan scheme also allows households to borrow at reduced rates for eligible works to address the liquidity constraint. OSS providers must be SEAI-registered to ensure quality standards. Works provided typically combine insulation of the full building envelope, heat pump installation, ventilation upgrades and solar PV.

Results

In Q1 2024, nearly 12,000 home energy upgrades were completed, which represented a 18% increase year-on-year. Over 5,050 homes achieved a BER of B2 or higher - a 53% year-on-year increase, making Ireland one of the only EU countries showing a real acceleration in deep retrofit delivery. The "SuperHomes" pilot, which is the original OSS initiative launched in 2015, achieved an average reduction in energy consumption of 85%, with an average return on investment of approximately 7 years. The fully funded Warmer Homes Scheme for energy-poor households also provides free deep retrofits to vulnerable households to ensure equity of access.

Unique aspects

The one-stop shop model is unique in European retrofit policy because it treats the delivery process itself as a policy instrument. Rather than simply subsidising works and leaving households to navigate a fragmented market of contractors, auditors and grant systems, the OSS provides an integrated

service. Households benefit from a dedicated project manager coordinating all contractors, handling all paperwork and grant applications, with a single point of contact throughout, and all completed work inspected by SEAI.

Alignment with regulatory and policy frameworks

Obligations under EED and EPBD are embedded in Ireland's climate action plan, which translates these EU obligations into a binding target of 500,000 homes retrofitted to BER B2 by 2030, with SEAI as the responsible delivery authority. The BER certificate system provides as well the informational baseline and performance benchmark.

Implementation and enforcement

SEAI registers and monitors OSS providers, inspects completed works, and administers grant payments. Post-renovation BER certificates verify performance outcomes, which creates a partial pay-for-performance mechanism. Finally, annual reporting tracks progress against the national 2030 target.

Lessons learned

Ireland stands out as one of the few EU countries to make concrete progress on deep retrofits because it addressed the organisational barrier by making the one-stop shop the mandatory delivery vehicle for access to the highest grant levels. Unlike France's MPR or Germany's BEG where over 90% of supported works remain on single measures, Ireland manages to externalise almost the entire transaction cost of renovation away from households, providing a single managed service covering audit, grant administration and quality control. This successfully tackles the information asymmetry and administrative complexity.

Annex 4 : France's Case Study

France - MaPrimeRénov' & CEE

Sector and approach: Buildings - Regulation+Information+Incentive

Source: MaPrimeRénov'

Objective

France combines two complementary instruments to overcome the main barriers to residential retrofits. MaPrimeRénov' (MPR), administered by the national housing agency (ANAH), provides direct public grants to homeowners and landlords for energy efficiency works. The Certificats

d'Économies d'Énergie (CEE) scheme imposes quantified energy savings obligations on energy suppliers, who must finance renovation works or purchase certificates on a secondary dedicated market. Together, they mobilise both public and private financing to target the renovation of France's approximately 5.2 million thermally inefficient dwellings, in line with EU's climate targets for 2030 and 2050.

Description

MPR operates through three pathways including individual measures (insulation, heat pump installation), deep whole-building renovations requiring a certified advisor and a minimum two energy-class improvement at the end, and collective renovations in multi-apartment buildings (MPR copropriété, requiring ≥35% energy savings). The CEE scheme uses standardised operation sheets to certify savings, with bonus multipliers for the most impactful measures.

Results

Since 2020, MPR has supported roughly 2.3 million dwellings, mobilising over €32 billion in total renovation investment. In 2023, around 569,000 homes benefited from the grant, with estimated savings of 6.6 MWh/dwelling/year and 2.8 tCO_2 avoided annually. The CEE scheme mobilises approximately €3 billion per year in private financing, with a mandatory one-third of the obligation targeting energy-poor households. However, actual energy savings in the CEE scheme are estimated at roughly half the certified theoretical volumes (Wald & Glachant, 2023[3]), and non-additionality rates for MPR remain high (~80% for its predecessor CITE).

Unique aspects of the policy

The MPR-CEE couple is interesting for its blended public-private financing model. Indeed, CEE premia are often stacked on top of MPR grants, which significantly increase the share of renovation costs covered. MPR's shift from a tax credit to a unit-based upfront subsidy improves incentives for quality works. Its income-differentiated structure (four household income brackets) improves targeting and consequently cost-effectiveness. The deep renovation pathway ("parcours accompagné") combines financial support with mandatory energy auditing and certified advisory services (Mon Accompagnateur Rénov), also addressing non-financial barriers that subsidies alone can not overcome.

Alignment with the regulatory and policy frameworks

Both instruments sit within a three-pillar package. The "loi climat et résilience[4]" (2021) progressively bans the rental of the least efficient dwellings (G from 2025, F from 2028 and E from 2034), creating regulatory pressure that MPR and CEE are supposed to support financially. The reformed DPE

[3] https://www.faee.fr/files/file/aee/seminaires/2023/WALD_GLACHANT_2023.pdf
[4] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000043956924

(Diagnostic de Performance Energétique - legally binding since 2021) provides the informational baseline, while the RGE (reconnu garant de l'environnement) contractor certification label reduces information asymmetries on work quality. More widely, the CEE scheme is also France's primary compliance instrument for Article 9 (energy efficiency obligation schemes) of the EU Energy Efficiency Directive[5] (EED).

Lessons learned

First, we see that deep renovations remain marginal despite the scale of public investment. Against a target of 600,000 comprehensive retrofits per year needed to meet France's 2050 objectives, only around 43,000 dwellings were engaged in a full low-energy building renovation process in 2022[6] (ADEME, 2024), with isolated heat pump installations dominating supported works.

Second, France's retrofit policy has suffered from stop-and-go instability : MaPrimeRénov' has undergone repeated abrupt rule changes and has been suspended for a few months which has disrupted contractor investment, undermining the long-term market signal the policy needs to deliver.

Finally, the CEE scheme remains academically and politically contested as state interventions through bonus multipliers have eroded its market-based rationale, while standardised theoretical savings values, for scholars, overestimate actual energy savings by a factor of approximately two (Wald & Glachant, 2023).

Annex 5 : Canada's Case Study

Canada - Canada Greener Homes Initiative

Country/Region/Province/City: Canada (National), 2021-ongoing

Sector and approach: Buildings (Residential); Incentive and Information

Source: Canada Greener Homer Initiative

Objective

The initiative aims to help Canadian homeowners make where they live more energy efficient and reduce energy bills by providing financial support for deep energy retrofits. It specifically targets the 2030 Emissions Reduction Plan roadmap to a 40% reduction in emissions below 2005 levels by 2030.

Results (if available)

As of December 2025, the program has invested almost CAD $1.8 billion (USD $1.31bn) in retrofit grants and loans reaching over 400k households. Over 275k heat pumps have been installed and total greenhouse gas emissions reductions are estimated at over 775k metric tonnes CO2.

[5] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOL_2023_231_R_0001&qid=1695186598766
[6] https://librairie.ademe.fr/batiment/7274-position-paper-high-performance-retrofitting-of-housing.html

Unique aspects of the policy
One unique aspect of the policy was the mandatory EnerGuide energy audit pre- and post-retrofit ensuring measurable savings under the grant and loan schemes. The newer Greener Homes Affordability Program provides no-cost retrofits, with a direct install approach, to both homeowners and tenants.

Description
The policy is comprised of the Greener Homes Grant (end 2024), the Greener Homes Loan (end 2024), the Oil to Heat Pump Affordability Program (OHPA; ongoing), and the Greener Homes Affordability Program (CGHAP; ongoing). The grant provided homeowners up to CAD $5,000 (USD $3650), plus CAD $600 (USD $438) for pre- and post-retrofit energy audits. The loan provided up to CAD $40,000 (USD $29,120) with an interest-free, 10-year repayment term. OHPA specifically targets low-to-median income homeowners with an upfront payment of up to CAD $10,000 (USD $7330) for the purchase and installation of heat pump systems. CGHAP provides low-to-median income homeowners and tenants with no-cost retrofits using a direct-install approach and additional support for Indigenous organisations.
Eligible retrofits include heat pumps, windows, doors, air sealing, home insulation, thermostat, and solar panel installation. The program involves stakeholders such as energy advisors and service organisations, HVAC professionals and the Canada Mortgage and Housing Corporation (CMHC).

Alignment with the regulatory and policy frameworks
The initiative is a cornerstone of Canada's 2030 Emissions Reduction Plan and the Green Buildings Strategy. It complements provincial programs like "CleanBC", offering stackable rebates for energy retrofits, and works in tandem with new municipal bans on oil and gas heating in cities like Montreal and Quebec.

Implementation and enforcement
Implementation is managed by Natural Resources Canada (NRCan). Enforcement of efficiency standards is handled through the EnerGuide rating system, where third-party auditors verify that installed equipment meets the program's performance criteria before funds are released. Under CGHAP, implementation and enforcement is now overseen at provincial level, allowing for greater adaptation to local contexts. The direct-install approach means the program is delivered by approved third-party organisations, ensuring quality and measurability of results.

Lessons learned
A key lesson learned was that upfront costs required for grants and loans present accessibility and affordability challenges for low-income households, reducing uptake. This led to the 2025 launch of the Greener Homes Affordability Program (CGHAP), which shifts from a rebate model to a direct-install model for lower-income Canadians and includes tenants as eligible recipients. The shift from national to provincial administration with CGHAP additionally addresses problems with national administrative burdens and difficulties in managing demand.

Annex 6 : USA Case Study

USA - Renew Boston Trust

Country/Region/Province/City: Boston, Massachusetts (Municipal), 2017-ongoing

Sector and approach: Buildings (Municipal); Incentive and Information

Source: Renew Boston Trust

Objective
The objective is to decarbonize the City of Boston's municipal buildings (schools, libraries, police stations) at no net cost to taxpayers by using energy savings to pay for the initial investment.

Results
Phase 1 retrofitted 14 buildings, resulting in over $645,000 in verified dollar savings in Year 1 alone, with savings increasing year-on-year. Guaranteed energy savings are over 15,700 MMBtu/year with annual greenhouse gas emissions reductions approximately 1300 mtCO2.
Phase 2 retrofitted 31 buildings, with Year 1 results of over $415,000 in verified dollar savings, over 10,700 MMBtu/year in guaranteed energy savings and just under 1000 mtCO2 in annual greenhouse gas emissions reductions.
Phase 3 is currently underway with a $112.5 million investment targeting deep retrofits in 13+ schools and the Boston City Hall.

Unique aspects of the policy
The RBT is a prime example of the exemplary role of the public sector model and stands out for its use of Energy Savings Performance Contracts (ESPC), which shift the technical and financial risk to the energy service company (ESCO), who must guarantee the energy savings. This model allows the RBT to self-finance, removing financial burdens from taxpayers.

Description
The RBT is a program designed to bundle municipal energy savings projects, including retrofits of insulation, heating, cooling, lighting, smart controls and electrification.

The programme began with the selection of an Energy Service Company (ESCO), which conducted Investment Grade Audits (IGA) across the City's 300+ buildings to identify opportunities for significant energy improvement potential. These upgrades were then implemented through an Energy Management Service Agreement (EMSA), under which the ESCO guarantees long-term savings. Initial financing was secured through a combination of EMSA-backed guarantees and general obligation bonds.

To strengthen oversight of energy use, the City implemented an Enterprise Energy Management System (EEMS). This system enables continuous monitoring and reporting of energy consumption across the City's building portfolio, allowing Boston to meet its public reporting requirements under the Building Energy Reporting and Disclosure Ordinance (BERDO).

Alignment with the regulatory and policy frameworks
The RBT ensures public sector compliance with the Building Energy Reporting and Disclosure Ordinance (BERDO 1.0) that requires large buildings to report greenhouse gas emissions. BERDO 2.0 now requires compliance with emissions standards for large residential and non-residential buildings to ensure all buildings comply with Boston's 2030 Climate Action Plan and reach net-zero emissions by 2050.

Implementation and enforcement
At the municipal level, the program is overseen through the joint work of the Environment Department, the Budget Office and the Public Works Department. The program is implemented through multi-year contracts with ESCOs with savings monitored and verified annually.

Lessons learned
RBT functions as a 'lead-by-example' for BERDO 2.0, which requires compliance with emissions standards for large residential and non-residential buildings that reduce over time, with all buildings expected to reach net-zero emissions by 2050.
The use of ESCO and guaranteed energy savings to pay off debt has helped prove the success of the self-financing model and enabled the City to defend benefits of retrofit investments.
Bundling, or combining measures with short-term paybacks and long-term paybacks, was the most effective retrofit approach, as payback from measures like LED lighting or steam trap replacements allowed for financing of more expensive measures. The City now provides building consultations for BERDO buildings advising them to follow a similar strategy.
Cross monitoring and evaluation of RBT by Environmental, Budget and Public Works Departments helped create an organisational structure to then monitor and evaluate BERDO 1.0 and 2.0.

Annex 7: Singapore's Case Study

Singapore – Green Mark Incentive Scheme for Existing Buildings 2.0 (GMIS-EB 2.0)

Country/Region/Province/City: Singapore (National), 2021-ongoing
Sector and approach: Buildings (Commercial and institutional developments, Light industrial buildings, and Residential buildings)
Source: GMIS-EB 2.0

Objective & Description & policy/regulatory framework:
Singapore's retrofit initiative is guided by ambitious targets, to green 80% of existing buildings by 2030, under the Green Mark scheme aligning with its national strategies, including the Singapore Green Building Masterplan (SGBMP) and the Singapore Green Plan 2030. In parallel, the policy also seeks to scale up the share of Super Low Energy (SLE) and Zero Energy buildings, reflecting a shift towards more advanced levels of energy efficiency and decarbonization (Building and Construction Authority, n.d.).
These targets are supported by systematic retrofit programs and targeted financial incentives, underpinned by a mandatory measurement and verification (M&V) framework that requires the validation of actual energy savings and carbon emissions reductions. This emphasis on verified performance ensures accountability and strengthens policy effectiveness (Building and Construction Authority. 2026).
Implementation:
GMIS-EB 2.0 is applicable to existing buildings with a GFA of at least 5,000sqm and: 1) Commercial and institutional developments, 2) Light industrial buildings, 3) and Residential buildings in regards to cooling systems, Building Automation System (BAS), etc (annex 16). $63-million grant under Green Mark Incentive Scheme is applied to lower upfront costs of energy efficiency retrofits for building owners who achieve higher energy performance standards (i.e., SLE and Zero Energy) (Building and Construction Authority, n.d.).

The Scheme is outcome-based, where funding support is based on the Green Mark certification rating and Energy Improvement Works (EIWs), subject to the funding cap. In addition, the enforcement process of the scheme follows a structured three-stage application procedure through the Building and Construction Authority (BCA) (Annex 15). Overall, the scheme is designed to support deep retrofit projects, ensuring verified energy performance improvements through a rigorous, evidence-based disbursement process. This staged verification mechanism helps reduce information asymmetry and ensures accountability in public funding allocation (Building and Construction Authority, 2025a; Building and Construction Authority, 2025b; Building and Construction Authority, n.d.).

Results:

Under GMIS-EB 2.0, incentives are disbursed based on verified emissions reductions (tCO_2), with each project assessed individually. For example, Energy consumption was reduced by approximately 40% for Thong Chai Building (EUI: ≈ 106 kWh/m²·yr), Electricity cost reduced by approximately 40% (National Environment Agency, 2024). By 2025, 66% of Singapore's gross floor area (GFA) had been certified as green, published in 2026 with the next update expected in 2028 ((Building and Construction Authority, 2026).

Unique aspects:

In Singapore, existing buildings account for the vast majority of the building stock, while buildings contribute a significant share of electricity consumption (around 31%) (Building and Construction Authority; National Environment Agency). This context makes systematic retrofit measures, supported by targeted grants, The Green Mark（BCA）as a core tool to quantify the retrofitting performance essential for achieving the "80-80-80" targets in a realistic manner. The retrofit approach follows a holistic pathway, progressing from energy systems to building envelope improvements, then to lighting and equipment upgrades, and finally to operational optimization. The latter includes measures such as sub-metering, improved maintenance practices, and user behaviour changes. A key characteristic of this approach is its systemic nature: beyond technological upgrades, operational and behavioural improvements can deliver substantial energy savings, in some cases at little to no cost (Building and Construction Authority, 2021). This highlights that cost-effective decarbonisation in buildings does not rely solely on capital-intensive technologies, but also on low-cost operational and behavioural interventions. Singapore's retrofit projects typically focus on cooling systems and building automation systems, reflecting the country's tropical climate and high level of development.

Lessons learned:

A comparison with other Singaporean retrofitting programmes shows that Singapore's approach is not to solve all problems with a single scheme, but to address different stages through separate policies. Its policy mix includes: GMIS-EB (expired in April 2019), the Grant for Low-GWP Refrigerant Chillers (LoGR), which aims to promote decarbonization of chiller systems by phasing out high-GWP refrigerants, and GMIS 2.0 (Building and Construction Authority, n.d.). The Building Retrofit Energy Efficiency Financing (BREEF, 2011–2014) focused on improving access to financing for energy efficiency retrofits, particularly by reducing upfront investment barriers for building owners (Building and Construction Authority, 2014). Meanwhile, the Gross Floor Area (GFA) incentive scheme targets new developments by providing additional floor area incentives for projects that achieve higher Green Mark standards (Building and Construction Authority, n.d.). Together, these policies demonstrate a staged and complementary approach, covering both new construction and existing building retrofits while addressing financial, technological, and regulatory barriers. Direct cash subsidies combined with mandatory certification by the Building and Construction Authority and quantitative management tools help reduce upfront costs and investment risks while ensuring standardized

certification and oversight. Together, these measures enhance incentives for retrofitting and drive overall improvements in energy efficiency across the existing building sector.

Annex 8: Thailand's Case Study

Thailand – Thailand - Building Energy Code (BEC) and the ESCO Fund

Country/Region/Province/City: Thailand, 2020-ongoing/ 2008-ongoing
Sector and approach: Buildings (BEC/Commercial and Public buildings; ESCO/all buildings)
Source: BEC, ESCO Fund

Objective & Description & policy/regulatory framework:
Thailand's building retrofit strategy is characterised by a policy mix combining regulatory standards and financial mechanisms, primarily through the Building Energy Code (BEC) and the ESCO Fund (Department of Alternative Energy Development and Efficiency, 2015; World Bank, 2017). These instruments are embedded within a broader policy framework, including the Energy Conservation Promotion Act, the Thailand Energy Efficiency Plan (EEP 2015 - 2036), and the Alternative Energy Development Plan (AEDP). The BEC functions as a regulatory tool, minimum performance requirements to ensure minimum energy performance standards, particularly for new and large-scale buildings. In parallel, the ESCO Fund operates as a financial instrument supporting energy efficiency improvements providing funding mechanisms such as loans, equity investment, and guarantees, often implemented through ESCOs using energy audits and measurement and verification (M&V) (Department of Alternative Energy Development and Efficiency, 2015; World Bank, 2017; Asian Development Bank, 2019).
Implementation:
In terms of implementation, the ESCO Fund is designed to address financial barriers by leveraging public funds to attract private investment. The Thai government initially allocated approximately 500 million THB to the fund, which is used to support Energy Service Companies (ESCOs) through mechanisms such as equity investment, soft loans, credit guarantees, and technical assistance. A key feature is the Energy Performance Contracting (EPC) model, where ESCOs implement projects and are repaid through achieved energy savings, thereby reducing upfront costs for building owners. The fund also incorporates risk-sharing mechanisms, allowing the government to absorb part of the financial risk and encourage private sector participation. This structure enables a leverage ratio of approximately 1:5 to 1:8, significantly amplifying the impact of public funding (World Bank, 2017; Asian Development Bank, 2019).
Results:
In terms of results, the ESCO Fund has supported more than 50 projects, mobilising investment of approximately USD 150 million. These projects have achieved energy savings in the range of 15-30%, demonstrating the effectiveness of the ESCO model in delivering measurable efficiency improvements at the project level (World Bank, 2017; Asian Development Bank, 2019).
Unique aspects:

A distinctive aspect of Thailand's approach is its strong reliance on financing mechanisms rather than mandatory retrofit requirements. The ESCO Fund plays a central role in enabling market-driven implementation, while the BEC ensures baseline compliance for building energy performance.

Lessons learned:

However, several limitations remain. The ESCO model has proven effective in addressing financing challenges, with a clear technological focus on HVAC and lighting systems. Nevertheless, the absence of mandatory retrofit policies has resulted in limited coverage, with projects implemented on a case-by-case basis rather than at scale. In addition, participation among small and medium-sized buildings remains relatively low, highlighting the need for more inclusive and systemic policy instruments.

Annex 9 : Chile's case study

Chile – Programa de Mejoramiento de Viviendas y Barrios

Country/Region/Province/City: Chile, 2016

Sector and approach: Residential Buildings

Source: Programa de Mejoramiento de Viviendas y Barrios

Objective

Chile's *Programa de Mejoramiento de Viviendas y Barrios – Proyectos de Eficiencia Energética e Hídrica* targets the millions of low-income households largely living in buildings built before modern energy standards existed, aiming to improve their thermal envelope, reduce energy poverty, and contribute to national decarbonisation commitments.

Description

Established under Decree DS N°255 in 2006 and expanded under DS N°27 in 2016, the programme subsidises retrofitting interventions for low-income households in urban areas (>5000 inhabitants) including thermal insulation, window upgrades, solar thermal collectors, photovoltaic panels, and the replacement of wood-burning stoves with cleaner heaters, calibrated to the climatic context of different regions.

Alignment with the regulatory framework

The programme operates within one of Latin America's most comprehensive building energy policy frameworks. Law 21.305 on Energy Efficiency (2021) established binding national targets, including a 10% reduction in energy intensity by 2030, and made energy labelling mandatory for all new construction. "The Calificación Energética de Viviendas (CEV), mandatory for new residential

buildings from October 2025, will progressively extend to existing buildings through this retrofit programme, allowing older stock to be tracked energy-wise for the first time[7].

Implementation

Delivery relies on certified Entidades Patrocinantes: accredited organisations that guide households through the entire process, from application to completion, at no cost to the beneficiary. This intermediary model enables the state to reach isolated households without building a large administrative apparatus. Financing is primarily public, drawn from the national housing budget with co-investment from the Ministry of Energy (up to 4,785,766 CLP), complemented by advantageous green credit lines through BancoEstado.

Results

Thanks to a growing budget, the number of beneficiaries reached 59,041 households in 2023, up from 15,590 in 2022, though the figures should be interpreted with caution as they partly reflect the resumption of projects suspended during the COVID-19 pandemic. Outcome data on energy savings and CO2 reductions remain unavailable for the period covered.

Unique aspects

The programme's most distinctive feature is the Entidades Patrocinantes model, which solves a persistent failure of retrofit programmes: the inability of low-income households to navigate complex administrative processes alone. Every beneficiary receives free professional, legal, and social support. Many EPs proactively seek out eligible communities, extending reach to households who would never self-identify as applicants. Neighbours can apply collectively, reducing per-unit costs and enabling block-level interventions. Social equity is embedded throughout: elderly people, people with disabilities, and families in the bottom 60% of the social registry are fully exempt from the minimum savings requirement, making the programme as much a social policy as an energy efficiency intervention.

Lessons learned

The Entidades Patrocinantes play a crucial role by handling technical and administrative procedures, removing barriers for households with limited capacity. The programme shows that accessibility is essential to reach vulnerable households. The progressive extension of mandatory energy rating to existing dwellings will strengthen the programme by generating data to track stock-wide performance, a feedback loop between investment and measurement that few countries in the region have yet built.

[7] See Annex 1 : Building energy rating label in Chile

Annex 10 : Mexico's Case Study

Mexico – Programa de Mejoramiento Integral Sustentable

Country/Region/Province/City: Mexico, 2022

Sector and approach: Appliances and Buildings

Source: https://www.fide.org.mx/?page_id=44536

Objective

To help low- and middle-income homeowners replace inefficient household appliances and improve their homes' energy performance, reducing electricity and gas consumption, lowering energy costs for vulnerable consumers, and contributing to Mexico's national decarbonisation commitments.

Description

The Programa de Mejoramiento Integral Sustentable, operated by FIDE (the national Energy Savings Trust Fund) under SENER (the federal Ministry of Energy) and CFE (the state-owned electricity utility), allows low-income households to acquire eco-technologies worth up to 73,000 pesos, financed over 5 years and repaid through their CFE electricity bill. Eligible technologies include solar water heaters, photovoltaic panels, thermal insulation, efficient air conditioning, LED lighting, and energy-efficient refrigerators. This programme succeeds the PSEE (2009–2012), which issued approximately 1.88 million credits using the same bill-based financing model.

Alignment with the Regulatory Framework

The programme builds on mandatory energy efficiency standards (the NOM-ENER norms) and the voluntary Sello FIDE quality label, which had already reduced emissions by incentivising efficient appliance purchases. The current programme continues and broadens that ambition, aligning with Mexico's National Energy Strategy 2013–2027 and requires eligible appliances to comply with the NOM-ENER-015-2018 standard.

Implementation and Enforcement

Since CFE is the only electricity distributor in Mexico and most Mexicans hold a contract with them, the electricity bill remains the central tool for both reaching beneficiaries and collecting repayments. Outreach is complemented by participating appliance retailers. The possibility of service interruption acts as an efficient backstop to protect the financial integrity of the scheme, removing the need for traditional creditworthiness assessments. The programme prioritises households on the lowest

domestic tariffs and families in high-temperature regions where energy costs weigh most heavily on household budgets.

Results

Results for the relaunched programme are not yet fully documented. The original PSEE delivered 298 GWh/year in energy savings, prevented around 199,000 tonnes of CO_2 emissions, and generated roughly 350 million pesos in household savings, providing a strong baseline for the current scheme's expected impact. At the broader national level, energy efficiency measures in the residential sector, partly achieved through this programme, are estimated to have reduced household energy consumption by 14.9 Mtep between 2000 and 2023[8].

Unique Aspects

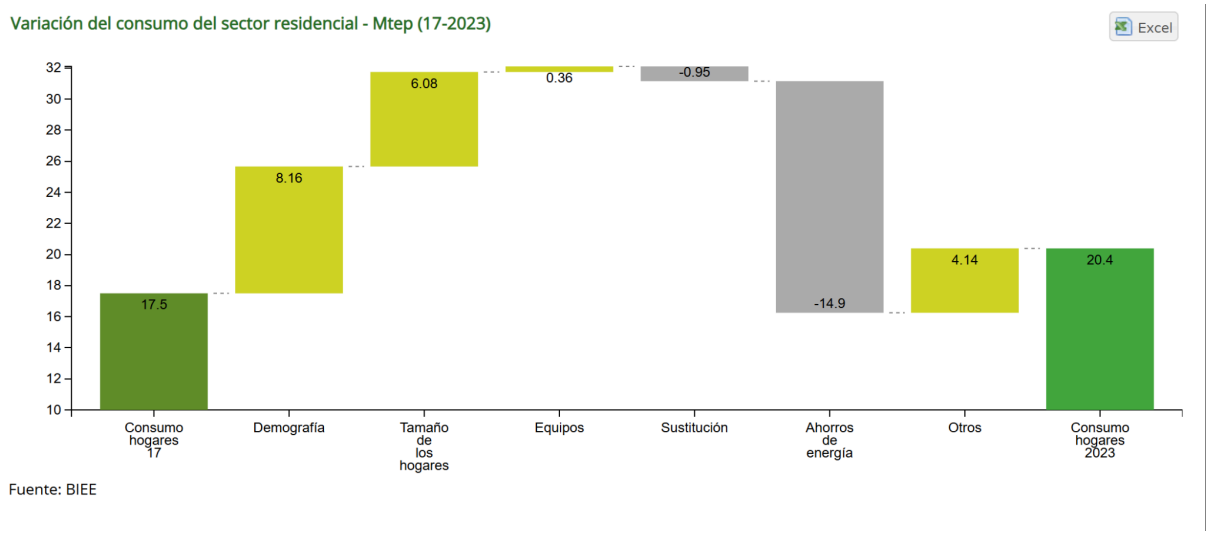
The defining innovation of the scheme is that repayment is partly self-financing: because the new appliance consumes significantly less electricity, the household's monthly bill may rise only modestly or not at all compared to what it would have been without the replacement. In effect, the energy savings generated by the new appliance help cover its own cost over time, especially with a long paying back period (up to 60 months)[9].

Lessons Learned

The retail-led communication model is hardly reaching the most isolated and least financially literate households, those with the most to gain. A dedicated, nationally coordinated outreach strategy, using local community intermediaries and communicating savings in concrete monetary terms, is essential to ensure equitable reach in future programmes. A potential limitation to consider is the rebound effect: lower energy bills from more efficient appliances may encourage increased energy use or additional appliance purchases, potentially offsetting part of the expected energy savings.

[8] See Annex 11 : Decomposition of residential energy consumption variation in Mexico, 2017–2023
[9] See Annex 12 : Illustration of the Self-Financing Mechanism in Mexico's Appliance Replacement Programme

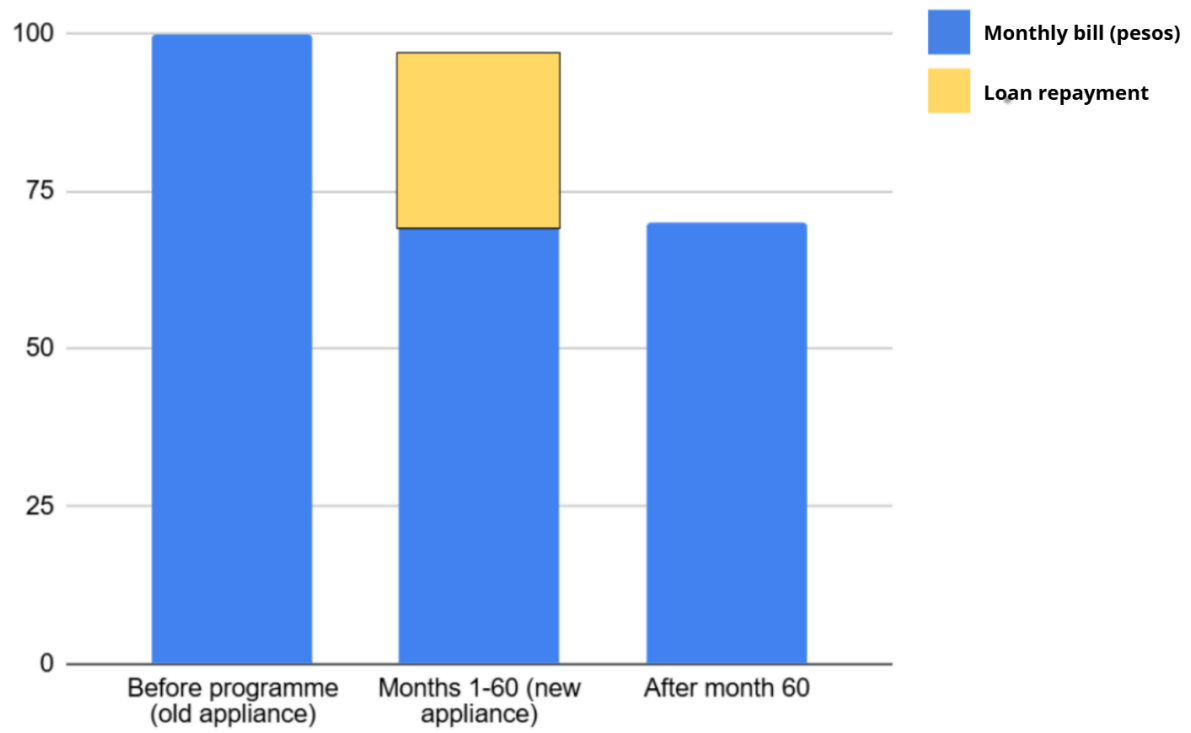
Annex 11 : Decomposition of residential energy consumption variation in Mexico, 2017–2023



Source: BIEE (Base de Indicadores de Eficiencia Energética), SENER/CONUEE/AFD/ADEME, available at biee-conuee.net.

Note: The 'Ahorros de energía' bar (-14.9 Mtep) represents energy savings achieved through energy efficiency measures in the residential sector, including appliance standards and programmes such as the PSEE/Mejoramiento Integral Sustentable. Without these savings, household consumption would have reached approximately 35 Mtep instead of the 20.4 Mtep recorded.

Annex 12 : Illustration of the Self-Financing Mechanism in Mexico's Appliance Replacement Programme



Note: Theoretical illustration of the self-financing mechanism underlying the programme. A baseline monthly electricity bill of 100 pesos is used for reference. The scheme works by using energy savings from more efficient appliances to partially offset the repayment of the credit, reducing the net increase in the household's monthly bill and making the investment more affordable and attractive. Actual values will vary depending on household consumption, tariff, and appliance characteristics.

Annex 13 : Grant Process of Green Mark Incentive Scheme for Existing Building 2.0 (GMIS_EB 2.0)

Grant Process

SCHEME APPLICATION Establishing expected carbon abatement		FIRST TRANCHE APPLICATION Mitigating upfront costs			ACTUAL GRANT AMOUNT APPLICATION Establishing realized carbon abatement		
Submit Application Form to BCA	BCA issues Letter of Acceptance (LOA)	Commencement of EIWs	Submit First Tranche Application Form to BCA	BCA approves First Tranche disbursement	Completion of EIWs	Submit Actual Grant Amount Application Form to BCA	BCA approves Actual Grant Amount
Applicants can apply for the scheme via FormSG.		First Tranche Application can be made after commencement of EIWs.			Actual Grant Amount Application can be made post-retrofit, after achieving Green Mark certification and completing verification, where applicable. Applicants are to submit the Actual Grant Amount Application within 36 months from the LOA.		
BCA will commence evaluation once Application is complete with the necessary documents, including but not limited to: ▪ **Application Form** includes basic project details, to be submitted by the Owner ▪ **Retrofit Proposal** endorsed by a third-party Qualified Professional which includes technical details and Estimated Qualifying Costs of the EIWs, M&V methodology used to determine the Baseline Energy Consumption, proposed M&V methodology to determine the Actual Energy Consumption, and the Estimated Carbon Abatement from the EIWs, and the corresponding Maximum Grant Amount. ▪ **1 week of measured energy consumption data for the existing Air-Conditioning and Mechanical Ventilation (ACMV) system proposed to be retrofitted or replaced and calculated energy consumption data for other systems proposed to be retrofitted or replaced, for establishing the Baseline Energy Consumption**		BCA will commence evaluation once First Tranche Application is complete with the necessary documents, including but not limited to: ▪ **First Tranche Application Form** includes basic project details, to be submitted by the Applicant ▪ **Evidence of amount paid out** (e.g. invoices and payment receipts) ▪ **Evidence of BCA Green Mark application** (e.g. Green Mark application form and acknowledge receipt of Green Mark application)			BCA will commence evaluation once Actual Grant Amount Application is complete with the necessary documents, including but not limited to: ▪ **Actual Grant Amount Application Form** includes basic project details, to be submitted by the Applicant ▪ **Evidence of amount paid out** (e.g. invoices and payment receipts) ▪ **BCA Green Mark Letter of Award and Letter of Clearance** ▪ **Retrofit Report** endorsed by a third-party Qualified Professional which includes updates to the information provided in the Retrofit Proposal, if any, photographic evidence of permanent M&V instrumentations installed for the EIWs, Actual Energy Savings from the EIWs to establish the Actual Carbon Abated and the corresponding Actual Grant Amount. ▪ **1 week of measured energy consumption data for the Air-Conditioning and Mechanical Ventilation (ACMV) system approved under the Scheme and calculated energy consumption data for other systems approved under the Scheme, for purpose of establishing the Actual Energy Consumption.** The measurement of energy consumption data of the ACMV system should be carried out after the completion of the EIWs, the operation of the Development has stabilized and optimized building occupancy >60%		
If the Application is approved, BCA shall issue the LOA (which shall indicate the Maximum Grant Amount) to the Owner within 3 weeks from BCA's receipt of the complete application from the Owner. Note: Proposed EIWs can only commence after the LOA is granted by BCA. Applicants are advised not to issue Purchase Orders before receiving the LOA from BCA.		If the First Tranche Application is approved, BCA shall issue its approval to the Owner within 3 weeks from BCA's receipt of the complete First Tranche Application from the Owner. Applicants can expect to receive the disbursement amount credited into their bank account registered with Vendors@Gov within 3 months from the approval date.			If the Actual Grant Amount Application is approved, BCA shall issue its approval to the Owner within 3 weeks from BCA's receipt of the complete Actual Grant Amount Application from the Owner. Applicants can expect to receive the final disbursement amount credited into the bank account registered with Vendors@Gov within 3 months from the approval date.		

Source: Building and Construction Authority. (2025). GMIS-EB 2.0 grant process (Version 2). https://isomer-user-content.by.gov.sg/338/25b3948c-6c20-4cbd-93e6-274307bd65c3/gmis-eb-2-0-grant-process-(ver-2)-(20250715).pdf

Annex 14 : Eligible Equipment for GMIS_EB 2.0

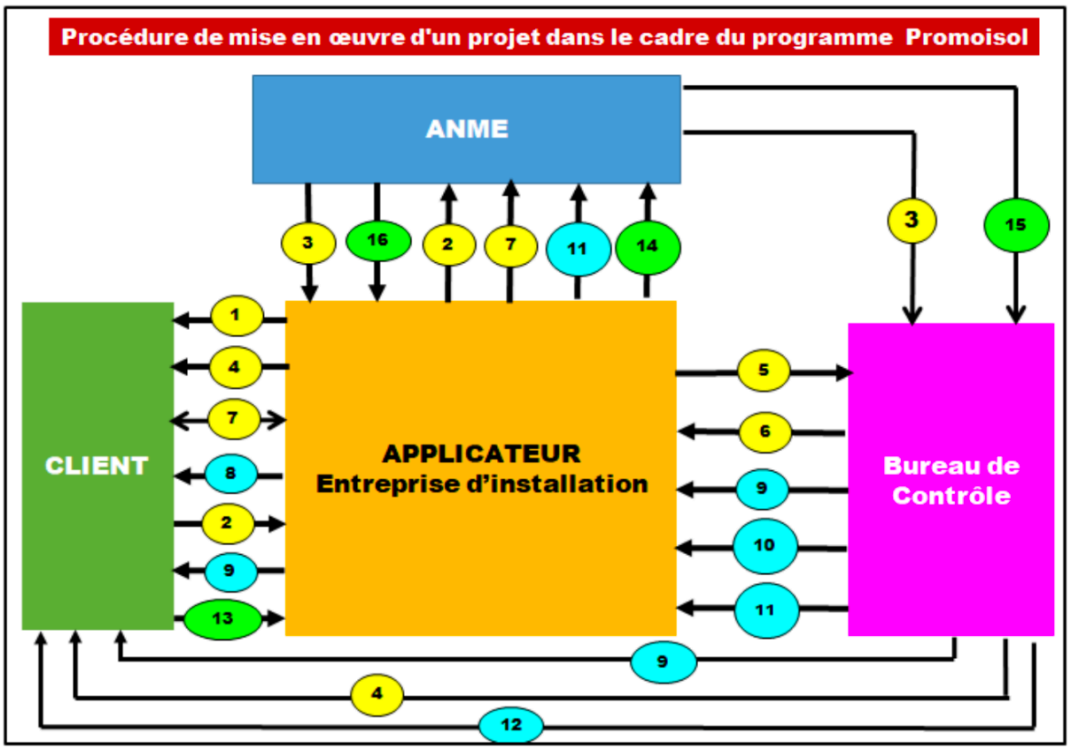
Eligible Equipment

S/N	Examples
1	Energy Efficient Lighting (e.g. LED)
2	High Energy Efficient Chillers
3	Chilled Water Pumps
4	Condenser Water Pumps
5	Cooling Towers
6	Chiller Plant Energy Optimization System
7	Chiller Auto Condenser Tube Cleaning System
8	Building Automation System (BAS)
9	Variable Speed Drives (VSD)
10	Air-conditioning Systems using Alternative Cooling Technologies (e.g. evaporative cooling)
11	Unitary Air-Conditioning System (e.g. 5-ticks VRV/VRF)
12	Efficient Air Handling Units (AHU) and Fan Coil Units (FCU)
13	CO2 Sensors for AHU System
14	CO Sensors for Carpark Ventilation Control System
15	Photo Sensors
16	Motion Sensors
17	Heat Pipe & Energy Recovery Wheel
18	Energy Efficient Lifts and Escalators
19	Regenerative Drives for Lifts
20	On-site Photovoltaics (PV) or other renewable energy sources

Note: Equipment not in the above list will be subject to review and approval from BCA.

Source: Building and Construction Authority. (2025). GMIS-EB 2.0 terms and conditions (Version 1) for projects with scheme application before 15 July 2025.
https://isomer-user-content.by.gov.sg/338/fa1379b8-1682-4430-92cb-d23699dcbed0/gmis-eb-2-0-terms-and-conditions-%28ver-1%29-for-projects-with-scheme-application-before-15-jul-2025.pdf

Annex 15 : General outline of the implementation procedure for the Pilot phase of the PromoIsol Program



Phases de réalisation :

1. Démarchage du client par l'applicateur de l'entreprise d'application éligible. 2. Transmission du dossier d'adhésion : formulaire d'adhésion accompagné du justificatif de résidence + CIN + ... 3. Désignation du Bureau de Contrôle (BC) par l'ANME et Information de l'applicateur du BC désigné. 4. Visite de diagnostic et de choix de la solution adéquate par l'applicateur et le bureau de contrôle. 5. Transmission du dossier technique d'exécution par l'applicateur au bureau de contrôle. 6. Approbation du dossier technique par le BC. 7. Signature du contrat type entre l'applicateur et le client et transmission d'une copie signée dudit contrat à l'ANME par l'applicateur.	ADHESION
8. Réalisation des travaux par l'applicateur. 9. Visite de contrôle de la bonne exécution du déroulement du chantier par le bureau de contrôle (en cas de besoin). 10. Certification du BC de la bonne exécution des travaux en cours de mise en œuvre par l'entreprise d'installation (en cas de besoin). 11. Transmission du dossier de bon exécution du déroulement des travaux par l'entreprise d'installation à l'ANME (en cas de besoin). 12. Vérification des travaux à la fin du chantier et signature du PV de réception par les trois parties (client/applicateur/BC)	TRAVAUX
13. Paiement des coûts des travaux par le client à l'Applicateur (hors prime). 14. Transmission par l'applicateur, du dossier complet (dossier technique, contrat des travaux, facture Applicateur, approbations et facture BC) à l'ANME pour approbation. 15. Traitement du dossier puis déblocage de la prime à l'entreprise d'installation (montant net des forfaits de contrôle et de gestion du dossier).	REGLEMENT

Source: ANME. (2024). Manuel de procédures du programme PROMO-ISOL. Isolation thermique des toitures des logements individuels en cours de construction et existants. Document provided by the project team.