International Carbon Action Partnership

COMPENSATING AND SUPPORTING CITIZENS FOR HIGHER ENERGY PRICES DUE TO CARBON PRICING

Thematic Brief

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1 Introduction

Energy affordability remains a salient political and social concern, even as the acute energy price shock linked to Russia's war against Ukraine and the associated surge in inflation continue to ease. Meanwhile, the impact of carbon pricing is expected to become more visible to end users as carbon prices and their sector coverage increase.

In the EU, the launch of the EU ETS 2 for buildings and road transport will pass through carbon costs more directly to household energy and mobility budgets. In some Member States, EU ETS 2 merely replaces existing national carbon pricing measures, while in others, it introduces meaningful carbon pricing for these sectors for the first time. Beyond the EU, many jurisdictions continue to grapple with broader cost-of-living challenges. These dynamics mean that protecting vulnerable citizens, particularly low-income households and residents in rural areas with limited transport options, remains essential to fairness, social acceptance, and the durability of carbon pricing.

This Thematic Brief samples and describes a set of selected measures to highlight design choices and trade-offs and serves as a useful resource for other stakeholders working on the design and implementation of compensation and support measures for citizens who face increased energy costs due to various policy interventions. Additionally, the paper collates a concise list of measures and signposts related and complementary studies and reviews. The focus of the paper is on measures that can mitigate the adverse impacts without blunting the price signal, and that have been embedded in existing policy frameworks and legal-institutional constraints. By underlining differences across jurisdictions regarding design choices, such as targeting, eligibility, and delivery mechanisms, and by engaging practitioners through dialogue, we aim to provide actionable options that can support vulnerable citizens effectively.

For the purposes of this paper, a "measure" is defined as a policy intervention designed to support citizens in managing the adverse impacts of higher energy costs caused by carbon pricing and to either directly compensate them for these impacts or indirectly support them in avoiding significant costs. We include only measures explicitly attached to a carbon pricing instrument, emissions trading systems or carbon taxes, through a revenue link or a direct price-impact linkage, and that target citizens' energy expenditures in heating, transport fuels, or electricity. Put differently, broad cost-of-living packages without a carbon-pricing link and measures aimed primarily at industrial competitiveness are excluded.

The rest of the paper is organized as follows. Section 2 provides an overview of measures, setting out the key dimensions of measures (instrument type, sector, target groups, objectives, and delivery mechanisms), explaining how the case studies were selected, and providing a brief overview of the main insights. Sections 3 to 5 present three illustrative case studies – Austria's Klimabonus; Germany's CO_2 Cost Sharing Act together with federal funding for efficient buildings; and California's Climate Credit – using a common template covering rationale, beneficiaries, governance, delivery, reporting, and findings from reviews. These sections served as an input to an ICAP expert dialogue conducted under the Chatham House rule on 10 September 2025, and Section 6 provides an overview of the main takeaways. An appendix summarizes additional measures mapped against

the taxonomy. This work is closely related to the European Commission study supporting the Implementation of the Social Climate Fund, which helps to inform the selection of this paper's case studies.[1]

[1] The European Commission study identifies good practices for cost-effective measures and investments for Member States' Social Climate Plans under Article 6(4) of the Social Climate Fund Regulation. It also provides practical advice on design and implementation, including pitfalls to avoid and ways to incentivize eligible groups to apply for such measures and investments. Several of the measures in EC2024 could equally serve as case studies in the current paper; much of its practical advice, as well as its limitations, remain valid in the current context and inform the selection of this paper's case studies. https://op.europa.eu/en/publication-detail/-/publication/af68b4c7-3508-11ef-b441-01aa75ed71a1/language-en

2 Overview of Measures

Compensation and support measures for citizens affected by carbon pricing vary widely in their design, scope, and objectives. While some interventions provide direct and regular financial relief, others focus on structural changes, behavioral or regulatory interventions, or long-term investments to reduce vulnerability and exposure. Understanding these differences is relevant for developing effective responses that balance social equity with the robustness of the carbon price signal. Building on the definition of "measure" set out above, this section highlights the main categories and dimensions of the set of measures that in principle could serve as a case study.

These include the type of measure employed (such as direct grants, fiscal incentives, or regulatory interventions), the sector targeted (for example, buildings, transport, or electricity), and the primary groups it is intended to benefit (such as low-income households, rural populations, or other vulnerable groups). Objectives also differ, ranging from immediate income support to longer-term investments that reduce exposure to future price increases or foster sustainable alternatives. In addition, delivery mechanisms, whether automatic, application-based, or in-kind, play a role in shaping both the accessibility and effectiveness of each measure.

The selection of case studies for this paper is guided by the need to reflect the diversity of approaches and contexts found in practice. Austria's Klimabonus was included because it provides a direct, broad-based mechanism linked to national carbon pricing, with features that address both socio-economic and regional inequalities, with net payments differentiated according to income levels, local transport accessibility and other relevant factors. Germany's CO_2 Cost Sharing Act and federal funding for energy efficient buildings were chosen to highlight targeted measures in the residential heating sector, including the challenge of split incentives through regulatory measures and the complementary role of energy efficiency investments. California's Climate Credit was selected as a high-profile example from outside Europe, demonstrating how electricity cost relief can be delivered through direct adjustments to utility bills and offering insights relevant to a wider set of jurisdictions. Together, these case studies illustrate a range of objectives, sectors, and delivery models, and provide a balanced representation of both European and non-European experiences.

In addition to the main case studies, an appendix table is provided to offer a broader overview of relevant measures. It lays out the variety of resident-facing compensation and support measures that are directly linked to a carbon pricing instrument.

3 CASE STUDY: Austrian Klimabonus

Austria introduced its Klimabonus in 2022 as part of the eco-social tax reform to compensate residents in the country for higher costs associated with the Austrian National Emissions Certificate Trading System (Nationales Emissionszertifikatehandelsgesetz – NEHG). Since October 2022, the NEHG has added a fixed carbon price to fossil fuels used in the buildings, transport, agriculture, and small industry sectors, which fuel suppliers pass through to end consumers. The carbon price was EUR 45 per tonne of CO_2 in 2024, will rise to EUR 55 in 2025, and will remain at that level unless a new price is set for 2026. The system is scheduled to be replaced by the EU ETS 2 from 2027. However, over the three years of operation (2022-2024), the scheme redistributed approximately EUR 6.7 billion to Austrian residents: EUR 3.94 billion in 2022, EUR 1.3 billion in 2023, and EUR 1.49 billion in 2024.[2] The Klimabonus program was discontinued after the 2024 payment year as part of a fiscal reform to address a broader budget deficit in the country.

3.1 Rationale for revenue use

Austria adopted its CO_2 pricing system on 1 October 2022, and along with it came the Klimabonus (*Klimabonusgesetz – KliBG,* as part of the *Ökosoziales Steuerreformgesetz 2022*)[3] with the purpose to: *"…encourage the adoption of environmentally friendly practices in transportation, heating, and consumption. Individuals who effectively reduce their CO_2 emissions will therefore keep a larger share of the Klimabonus. Furthermore, it serves as a form of social compensation for those facing challenges in transitioning to climate-friendly alternatives."*[4]

3.2 Recipients / beneficiaries of selected option

The Klimabonus was intended for all individuals with their primary residence registered in Austria for at least 183 days within the relevant year, and who possessed legal resident status if they were not Austrian citizens. Eligibility was therefore broad, encompassing nearly the entire resident population, including children and non-citizens meeting the residence requirement.[5]

A distinctive feature of the Klimabonus was its regional staggering, which adjusted the payment amount according to local transport infrastructure and accessibility. Payments varied based on regional differences in the urban-rural typology and quality grades for public transport ("ÖV-Güteklassen"). These factors assessed the availability and accessibility of public transport and public facilities including secondary schools, hospitals, and district authorities in the area of residents. In areas where transitioning to more climate-friendly transport options – and therefore reducing CO_2 – was challenging, an additional regional adjustment payment was added

[2] The 2022 figure includes a one-off Anti-Teuerungsbonus (anti-inflation/energy crisis payment) in addition to the regular Klimabonus. See Section 2.4 below or BD - UG 43-Klima, Umwelt und Energie Budget 2024, Table 6, p. 16 and p.4 and 22 for further details.

[3] https://www.parlament.gv.at/dokument/XXVII/ME/159/imfname_1009278.pdf

[4] https://www.klimabonus.gv.at/en/frequently-asked-questions/

[5] https://www.klimabonus.gv.at/en/

to the base payment. Therefore, the total amount of the Klimabonus one received depended on the availability of public transport and infrastructure in one's location.[6]

The Klimabonus thus consisted of two components: (1) the base amount received by all residents and (2) an additional payment for those living in areas with less developed infrastructure and public transport networks.[7] People with limited mobility received the maximum regional compensation in addition to the base amount, regardless of where they lived. This was made possible for those in possession of a parking permit for people with disabilities. The payment of the Klimabonus was designed to be automatic and accessible. The Klimabonus was paid out in two ways: either by bank transfer directly to recipients' bank accounts associated with their tax declarations, or in the form of vouchers sent by postal letter. The vouchers were used to reach individuals who may not have submitted tax declarations yet but were deemed eligible (e.g. recent arrivals in the country). The vouchers were redeemable at Austrian stores, from supermarkets to bookshops, and could alternatively be exchanged for cash through a banking partner.

To strengthen the progressivity of the Klimabonus, the 2024 payment was deemed taxable for those with an annual taxable income of more than EUR 66,612. However, the bonus did not constitute a creditable benefit under the Basic Social Welfare Act, so it had no influence on someone's eligibility for government benefits like minimum income support.[8]

3.3 Regulatory and institutional elements to achieve the stated objectives

The Austrian Klimabonus was governed and administered by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK). The information required for the payment of the Klimabonus (registration data or account numbers) came from the Federal Ministry of Finance and the Federal Ministry of the Interior, from the pension insurance fund in the case of pensioners, from the federal payroll in the case of federal employees, and from the Ministry of Social Affairs in the case of physical disabilities.[9] The classification of municipalities for the payment of the Klimabonus and the regional staggering was carried out by Statistics Austria in accordance with the specifications of the Federal Ministry of Finance (BMF) and of the BMK on the basis of the "Urban-Rural-Typologie[10] and the public transport quality classes of the ÖROK and BMK."[11] [12]

[6] Ibid

[7] Each eligible resident receives a base amount (EUR 145 in 2024), and then a regional adjustment is added depending on the level of access to public transport and infrastructure at their place of residence. The regional adjustment can be EUR 0, EUR 50, EUR 100, or EUR 145. This results in four possible payment categories:

- Category 1: EUR 145 (base amount only); for urban centers with very good public transport connections
- Category 2: EUR 145 + EUR 50 = EUR 195; for urban centers with good public transportation
- Category 3: EUR 145 + EUR 100 = EUR 245; for regional centers and communities in the surrounding area of centers with sufficiently good basic public transportation
- Category 4: EUR 145 + EUR 145 = EUR 290; for rural communities and areas with only basic public transport services

https://www.oesterreich.gv.at/de/themen/umwelt_und_klima/klima_und_umweltschutz/klimabonus
For more information on the methodology, please visit the Statistics Austria website or consult the STATatlas.

[8] https://www.oesterreich.gv.at/de/themen/umwelt_und_klima/klima_und_umweltschutz/klimabonus

[9] BMF is also responsible for the administration of the NEHG. Due to the recent reorganization, the administration (and winding down) of the Klimabonus is currently in the portfolio of the Federal Ministry of Agriculture, Forestry, Climate Protection and Environmental Protection, Regions and Water Management (BMLUK)

[10] https://www.statistik.at/fileadmin/pages/453/urbanRuralTypolgie.pdf

[11] https://www.oerok.gv.at/raum/themen/raumordnung-und-mobilitaet#c6416

[12] https://www.statistik.at/en/services/tools/services/regional-information/climate-bonus-klimabonus#:~:text=Regional%20staggering%20of%20the%20climate,were%20included%20in%20the%20classification

The Klimabonus was designed to be automatic in its delivery and easily accessible with all residents who are registered in the country for at least six months in a given year being eligible, and no application being required. The bonus was deposited directly into recipients' bank accounts if the residents' personal details were registered with the Finanzonline government portal. If they were not registered with the portal, residents received the bonus by post as a voucher. Updates and details about the Klimabonus were published on the official Klimabonus website, and the Ministry was responsible for responding to public enquiries and providing guidance.[13]

3.4 How revenue use is reported and communicated.

While information about the Klimabonus is published on official government websites, there are currently no publicly available annual reports that provide details such as the number/category of beneficiaries, or regional statistics for each year of its operation. However, aggregated figures for annual allocations are available in official budget documents from the Austrian Parliament. The following table summarizes the Klimabonus allocations as reported in the 2024 budget analysis (Table 6):

Year	Disbursed Amount (EUR million)	Notes
2022	3,943.3	Includes Anti-Teuerungsbonus (energy crisis payment)
2023	1,300.0	Regular Klimabonus only
2024	1,492.3	Planned/estimated; regular Klimabonus only

The 2022 allocation was significantly higher than in subsequent years due to the inclusion of a one-off Anti-Teuerungsbonus, paid in response to the energy crisis. This bonus was not part of the original Klimabonus rationale and makes direct comparison with later years problematic. More granular data (e.g., number of beneficiaries or regional distribution) is not currently published in official annual reports.[14]

Public communication campaigns, including FAQs and explanatory materials, are used to raise awareness and explain the rationale behind and eligibility for the payments. Assistance with related personal queries is also available via telephone five days per week.[15]

3.5 Findings from regulatory or independent reviews

An impact assessment of the Klimabonus was conducted in 2021. As it predates the energy crisis, it does not account for Anti-Teuerungsbonus and assumes a smaller budget allocation of EUR 1.25 billion in 2022. There is currently no official review or audit of the Klimabonus. However, independent academic research and policy analyses provide insights into the effectiveness and distributional impacts of Austria's Klimabonus.

One recent study, *"Welfare and inequality impacts of carbon pricing and compensation schemes on fuel poor households in Styria, Austria"*, finds that carbon pricing impacts both vertical and horizontal inequality, and shows that targeted compensation schemes, can effectively reverse negative welfare impacts and inequality.

[13] https://www.theinternational.at/klimabonus-payments-to-begin-on-september-2/
[14] Austrian Parliament, Budget Service: UG 43 - Climate, Environment and Energy Budget 2024. Table 6, p.17 along with explanations on p.4 and p.22. https://www.parlament.gv.at/dokument/budgetdienst/untergliederungsanalysen/BD-UG-43-Klima-Umwelt-und-Energie-Budget-2024.pdf
[15] https://www.klimabonus.gv.at/en/

The study finds that absent compensation, carbon pricing has nearly twice the negative welfare impacts on fuel poor households than on the average Styrian household, especially those that live in rural areas and if the fuel poverty includes transport expenditures. The study also finds that price changes in motor fuels were the dominant impact channel. Comparing several types of compensation, the study shows that they all turn the slightly regressive effects of the carbon price into a progressive pattern. However, the region-based compensation, which most closely resembles Austria's Klimabonus, was identified as particularly effective at protecting vulnerable rural populations.[16]

Conversely, a recent macroeconomic analysis, *"Are rural households hit hardest? Exploring the distributional effects of region-specific compensation payments in the Austrian CO_2 pricing scheme"*, offers a contrasting perspective. Considering Austria's scheme, this study uses the recursive dynamic macroeconomic CGE model WEGDYN-AT and finds that the carbon pricing scheme does not necessarily need to contain region- or income-based targeting to enhance distributional equity. The analysis finds that households in rural areas were not burdened substantially more than those in urban areas by carbon pricing alone. The results show that a no-transfer-scenario performed best in terms of overall welfare. This scenario rests on the assumption that in a no-transfer-scenario the funds would be spent by the government for general public consumption, which also adds to welfare.[17] It is important to note that the specific ways in which the government chooses to spend the funds in a no-transfer-scenario, such as investing in public services or infrastructure, can lead to different welfare outcomes for households adversely impacted by the carbon price.

The Klimabonus program was discontinued after the 2024 payment year as part of a fiscal reform to address a broader budget deficit in the country.[18] Claims for previous years remain valid and can be asserted retrospectively, provided eligibility requirements are met. It is understood that the government's decision to end the Klimabonus reflects shifting fiscal priorities rather than a negative evaluation of the measure's effectiveness.

[16] https://www.sciencedirect.com/science/article/pii/S2666278725000042
[17] https://www.sciencedirect.com/science/article/pii/S0140988324008272#s0080
[18] https://www.finanz.at/news/klimabonus-letzte-auszahlung-maerz-2025-11112/

4 CASE STUDY: Germany's CO_2 Sharing Act (CO2KostAufG) and the Federal Funding for Efficient Buildings (BEG)

Since 1 January 2021, Germany's Fuel Emission Allowance Trading Act (BEHG) has added a carbon price to all fuel emissions, specifically in the heating and transport sectors. It is an upstream system: the suppliers of fuels are responsible for purchasing CO_2-certificates and passing through the costs to households and end users. In the introduction phase, the carbon price is an increasing fixed price. In 2024 the carbon price was EUR 45 per tonne of CO_2, in 2025 it is 55 EUR, and in 2026 certificates will be auctioned within a price corridor of EUR 55–65. The system will then transition to EU ETS 2 which is set to start in 2027. To share this additional burden and counteract split incentives in rentals, the Carbon Dioxide Cost Sharing Act (CO2KostAufG) has, since 1 January 2023, allocated the CO_2 cost of heating fuels between landlords and tenants via a ten-step schedule tied to the building's specific emissions. Furthermore, the Federal Funding for Efficient Buildings (BEG) helps finance the investments the carbon price intends to trigger by providing grants and concessional loans for renewable heating and energy efficiency measures. The revised heating support regime, one among several BEG funding guidelines, came into force on 1 January 2024 and is financed by the Climate and Transformation Fund (KTF).

The BEG is complemented by the building energy act (GEG). An amendment of the GEG also came into force in January 2024. A key step for the heating transition in the building sector is the implementation of the GEG requirement to use 65 percent renewable energies or unavoidable waste heat for heating in the future. The amendments to the GEG stipulate that, as a rule, every newly installed heating system in new buildings in new development areas must use at least 65 percent renewable energies or unavoidable waste heat from 1 January 2024.[19]

4.1 Rational for revenue use

CO2KostAufG is a regulatory, not a budgetary, instrument. Its legal purpose is to apportion CO_2 costs between landlords and tenants according to their respective responsibilities and influence over a building's emissions, applying to billing periods beginning on or after 1 January 2023. The ten-step schedule increases the landlord's share as a building's emission intensity (kg CO_2/m^2/year) worsens. This preserves a consumption price signal for tenants while creating a renovation and heating replacement incentive for owners.

BEG's objective is to accelerate the switch to renewable heating and to deepen energy efficiency renovations, beyond the requirements laid down in the Federal Building Act (GEG). It is the federal government's central funding program for heating replacement and building efficiency. Financed from the KTF, it is delivered through either loans with reduced interest rates and repayment subsidies or grants and a concessional loan (Ergänzungskredit).[20]

[19] https://energiewende.bundeswirtschaftsministerium.de/EWD/Redaktion/EN/Newsletter/2024/02/Meldung/news1.html
[20] https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilie/

CO2KostAufG aims to correct split incentives by reallocating carbon costs within rental contracts and without committing fiscal resources: in inefficient buildings, landlords bear most costs, while tenants in efficient buildings continue to face a carbon price signal. BEG includes loans with reduced interest rates, grants and concessional loans funded by the KTF for building renovations, increasing energy efficiency and the adoption of clean heating investments which may be held back by liquidity constraints and behavioral biases. Both measures preserve behavioral incentives and unlock owner investment – illustrating two elements in a coherent policy mix that advance decarbonization and equity.

4.2 Recipients / beneficiaries of selected option

In residential leases, CO2KostAufG allocates the CO_2 cost using a statutory ten-step ladder based on the building's specific emissions (kg CO_2/m^2/year)[21]. There is no cash transfer mechanism in CO2KostAufG: the CO_2 cost is split via the annual heating cost statement using the statutory step schedule and the CO_2 cost itemized on supplier invoices.[22]

The law applies to billing periods beginning on or after 1 January 2023 and governs the allocation of CO_2 costs contained in fuel and heat supply charges; exceptions exist where public rules substantially constrain upgrades (e.g., heritage protection or designated social conservation areas), which can reduce or waive the landlord's share in defined cases.

The BEG benefits building owners across the residential and non-residential sectors and is structured into three subprograms: single/individual measures (BEGEM, e.g. single heating unit replacement), residential building measures (BEGWG), and non-residential building measures (BEGNWG).[23] Targeting is primarily need- and performance-based: the program supports renewable heating installation, building envelope measures, plant technology, and systems optimization that meet technical criteria laid down in the funding guidelines. Social targeting is introduced via an income bonus in the heating replacement track for self-occupied homes below a taxable income threshold (verified via tax assessments). This income bonus for the replacement of heating systems, introduced in 2024, is an important step toward a socially differentiated subsidy aimed at achieving climate and energy transition goals. Households with an annual taxable income of up to EUR 40,000 will receive an additional subsidy of 30%. In addition, households with an annual taxable income of up to EUR 90,000 can take advantage of low-interest loans.

Support is delivered indirectly via application-based grants (BAFA), reimbursed against invoices and verified compliance, or via KfW concessional finance and any product specific repayment subsidies. Applications are made through BAFA/KfW portals using the published guidelines, forms and product terms. The redesigned heating support under BEGEM started on 1 January 2024. It aligns with the amended Building Energy Act (GEG), which requires 65% renewable energy for new heating systems. KfW provides a current Merkblatt for

[21] For nonresidential leases, the law currently applies a 50/50 split. A -sector specific- step model is envisaged after preparatory data work to account for different usage patterns and lease structures. Some sector communications referenced a potential 2025 horizon.

[22] In self supply cases (for example, gas combi--boilers-), tenants claim the landlord's share under §5(3) CO2KostAufG using the same logic.

[23] https://www.bafa.de/DE/Energie/Effiziente_Gebaeude/Foerderprogramm_im_Ueberblick/foerderprogramm_im_ueberblick_node.html
https://www.bafa.de/SharedDocs/Downloads/DE/Energie/beg_em_foerderuebersicht.pdf?
https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2024/02/06-neue-heizungsfoerderung.html

homeowners' heating support alongside product details for the Ergänzungskredit. The KfW BEG page[24] and BAFA overview[25] explain the BEG's purpose and architecture, and the ministry underscores KTF financing and the 1 January 2024 start of the revised heating support regime.[26]

4.3 Regulatory and institutional elements to achieve stated objectives

CO2KostAufG's legal basis and scope are set out in the Federal Law Gazette (BGBl. I 2022, p. 2154). The Act only regulates the allocation of CO_2 costs contained in fuel and heat supply costs within landlord tenant relationships and applies to billing periods beginning on 1 January 2023. BEHG imposes a carbon price which the fuel and heat suppliers pass through to landlords and tenants, and CO2KostAufG then allocates the resulting CO_2 cost in rentals using the statutory schedule. In practice, landlords (or tenants, in self-supply cases) calculate the specific emissions and apply the ten-step schedule in the annual statement. There is no upfront payment, only allocation on the bill. The ministry provides the official table, calculation formula, examples, and a public calculator to standardize application.[27]

The BEG guidelines for EM/WG/NWG are issued under §§ 23 and 44 of the Federal Budget Code (BHO) and designate BAFA (grants) and KfW (loans and selected grant products) as implementing bodies. Financing comes from the Climate and Transformation Fund (KTF).[28] The program architecture follows three pillars: BEGEM (individual measures, incl. heating replacement), BEGWG (residential buildings) and BEGNWG (non-residential) – each with defined eligibility, technical criteria and subsidy rates published in the guideline and implementers' materials.[29] Applicants apply via BAFA/KfW portals. BAFA verifies eligibility and technical compliance (e.g., Fachunternehmererklärung/energy expert confirmation, invoices) and disburses grants to beneficiaries after proof of implementation, while KfW extends concessional loans and any product specific repayment subsidies per its product terms – i.e., funds are not paid upfront but released upon compliance and verified implementation (grant reimbursement or loan drawdown).[30] The redesigned heating support under BEGEM has applied since 1 January 2024 in step with the Building Energy Act's 65% renewable heating trigger, linking regulatory obligations and funding delivery.[31]

4.4 How revenue use is reported and communicated

The CO2KostAufG operation is facilitated by the ministry-provided official guide and public calculator. The allocation appears transparently within the annual heating cost statement provided to tenants, drawing on the CO_2 cost itemized by suppliers.

[24] https://www.kfw.de/inlandsfoerderung/Bundesf%C3%B6rderung-f%C3%BCr-effiziente-Geb%C3%A4ude/
[25] https://www.bafa.de/DE/Energie/Effiziente_Gebaeude/Foerderprogramm_im_Ueberblick/foerderprogramm_im_ueberblick_node.html
[26] https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2024/02/06-neue-heizungsfoerderung.html
[27] Official table: https://www.gesetze-im-internet.de/co2kostaufg/BJNR215400022.html#BJNR215400022BJNG000300000
[28] https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2024/02/06-neue-heizungsfoerderung.html
[29] https://www.bafa.de/SharedDocs/Downloads/DE/Energie/beg_em_foerderuebersicht.pdf?
[30] https://www.bundesanzeiger.de/pub/publication/TevdpcR9NeEp7m7RhbJ/content/TevdpcR9NeEp7m7RhbJ/BAnz%20AT%2029.12.2023%20B1.pdf?inline
[31] https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2024/02/06-neue-heizungsfoerderung.html

For BEG, official communication and documentation are provided on BAFA and KfW portals (guidelines, FAQs, product pages, forms and Merkblätter).[32] The 2024 reform was communicated by the ministry and BAFA.[33] For ongoing transparency, BMWE publishes quarterly BEG Reporting on Energiewechsel (Q1–Q3 2024) and BAFA publishes an annual BEGEM statistics PDF (2024),[34] [35] which together provide operational KPIs such as the number of applications/approvals, the technology mix (e.g., heat pumps vs. biomass), the bonus uptake (e.g., Klimageschwindigkeits Bonus), and the financial volumes/beneficiary reach.

4.5 Findings from regulatory or independent reviews

A statutory evaluation of CO2KostAufG is foreseen by the end of 2025, including consideration of aligning the allocation schedule more closely with energy efficiency classes using energy performance certificate data. Comprehensive official impact results are therefore not available at the time of writing.

Analytical work at the interface of social and environmental policy in housing consistently argues that stronger standards or rising carbon prices should be accompanied by targeted support to ensure fairness and enable investment – a rationale that supports the pairing of CO2KostAufG (incentive and burden-sharing) with BEG (capital support) within the German building transition discourse.[36]

The ministry commissions regular external evaluations of BEG. The ongoing evaluation by a Prognos-led consortium covers 2021–2025 and assesses effectiveness, efficiency, and program improvements.[37] According to the 2023 evaluation communication, the BEG met its annual targets laid out in the guidelines. Key results for the year included:

- ~286,000 projects supported;
- ~ EUR 31 billion private investment mobilized with ~ EUR 7.6 billion in federal funds;
- expected annual savings of ~7.5 TWh (primary/end energy) and ~2.2 Mt CO_2-eq.;
- ~ 95% of cases and ~88% of GHG reductions are from BEG-EM;
- induced macro effects are estimated at ~ EUR 26 billion gross value added and ~360,000 FTEs, predominantly in SMEs, materialized over up to four years.

Complementing the BEG evaluation, BMWE/BAFA publish BEG statistics that provide operational KPIs on program activity and targeting, including numbers of applications/approvals, technology mix (e.g., heat pumps vs. biomass), and bonus uptake (e.g., KlimageschwindigkeitsBonus), with quarterly BEG Reporting for 2024 available on Energiewechsel (Q1–Q3) and BAFA's annual BEGEM statistics for 2024 showing volumes and

[32] https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Schlaglichter-der-Wirtschaftspolitik/2024/02/06-neue-heizungsfoerderung.html
[33] https://www.bafa.de/SharedDocs/Kurzmeldungen/DE/Energie/Effiziente_Gebaeude/20240104_anpassung_beg.html
[34] https://www.energiewechsel.de/KAENEF/Redaktion/DE/PDF-Anlagen/BEG/beg-reporting-20241212.pdf?__blob=publicationFile&v=2
[35] https://www.bafa.de/DE/Service/Statistiken/statistiken_node.html?cms_gtp=2111430_Dokumente%253D3
[36] https://www.umweltbundesamt.de/sites/default/files/medien/11850/publikationen/projektionsbericht_2024_instrumentenpapier.pdf
https://www.energie-effizienz-experten.de/news/beg-foerderung-schafft-beschaeftigung-und-steigert-effizienz
https://mieterbund.de/app/uploads/2024/07/20240731_Studie-soziale-Foerderung_DMB-Oeko-Institut.pdf
https://www.rwi-essen.de/publikationen/wissenschaftlich/referierte-artikel/detail/split-incentives-in-energy-efficiency-investments-evidence-7331
[37] https://www.prognos.com/de/projekt/evaluation-derbundesfoerderung-fuereffiziente-gebaeude-beg

beneficiary reach.[38,39] In modeling and projections, the Federal Environment Agency's 2024 instrument report treats the BEG (along with the 65% renewable heating trigger under GEG) as a central building sector lever, i.e., an officially recognized component of the forward mitigation pathway.[40]

[38] https://www.energiewechsel.de/KAENEF/Redaktion/DE/PDF-Anlagen/BEG/beg-reporting-20241212.pdf?__blob=publicationFile&v=2

[39] https://www.bafa.de/DE/Service/Statistiken/statistiken_node.html?cms_gtp=2111430_Dokumente%253D3

[40] https://www.umweltbundesamt.de/sites/default/files/medien/11850/publikationen/projektionsbericht_2024_instrumentenpapier.pdf

5 CASE STUDY: California Climate Credit

The California Climate Credit (hereafter, the Credit) is a recurring on-bill credit provided to investor-owned utility customers in California as a direct benefit from the state's Cap-and-Trade Program (hereafter, the California C&T).[41] The Credit was first implemented in 2014 and is funded by revenues from the auctioning of greenhouse gas allowances freely allocated to utilities under California's program. Other uses of these revenues include renewable energy, energy efficiency, building electrification, and transportation electrification projects.

Each year, the California Air Resources Board (CARB) allocates a number of allowances free of charge to electric distribution utilities and natural gas utilities. Investor-owned electric utilities are required by regulation to consign all of their allocated allowances to auction and cannot use them for their own compliance obligations. The utilities must use the revenues from the sale of these utility-owned allowances at auctions for the benefit of utility ratepayers, primarily by providing direct bill credits through the California Climate Credit. This mechanism ensures that the value of the allowances is returned to utility customers, supporting both affordability and the broader goals of the Cap-and-Trade Program. Publicly owned electric utilities also receive allowances free of charge but have an option to consign the allowances to auction and use the revenues for the benefit of their ratepayers or to use the allowances for California C&T compliance.[42]

A natural gas credit is provided every April, and electric credits are provided in April and October of each year. Credit amounts vary depending on the utility, but all residential customers of the same electricity or natural gas provider receive the same amount. In this way, utility rates include the carbon price signal, and the lump sum credit does not disincentivize energy reduction practices by customers. In 2025, the April natural gas credit was between USD 54.21 and USD 86.60, and each of the two electric credit disbursements are between USD 34.91 and USD 259.36.[43]

5.1 Rationale for revenue use

CARB sets the methodologies to determine the number of freely allocated allowances each utility receives, and the California Public Utilities Commission (CPUC) sets the methodology for how revenues from sale of the free allowances are returned to ratepayers as credits.[44]

The CPUC's methodology for how the revenue is distributed is described in its 2012 *Decision adopting cap-and-trade greenhouse gas allowance revenue allocation methodology for the investor-owned electric utilities* (D.12-12-033) as a mechanism to return the value of GHG emission allowances, allocated to investor-owned utilities under the Program, directly to residential electricity customers. The CPUC requires that the allowance

[41] On 19 September 2025, the California Governor signed AB 1207 and SB 840 into law, extending the state's cap-and-trade program until 2046 and renaming it the California Cap-and-Invest Program. The new bills foresee changes to the California Climate Credit through regular rulemaking. The content of this section is accurate at the time of writing (September 2025). https://icapcarbonaction.com/en/news/california-extends-cap-and-trade-2045-renames-program-cap-and-invest

[42] https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/allowance-allocation/edu-ngs

[43] https://www.cpuc.ca.gov/climatecredit

[44] https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/allowance-allocation/edu-ngs

value allocated to investor-owned electric utilities be distributed to *"residential customers on an equal per residential account basis delivered as a semi-annual, on-bill credit."*

As stated in the Decision, "*A non-volumetric return (climate dividend) of remaining GHG revenues to residential customers on an equal per-residential account basis provides a greater return as a share of income to lower-income households. This is the most equitable method of distributing remaining GHG revenues to residential customers given the neutralization of GHG costs in residential customers' rates*." The Decision also notes that non-volumetric returns preserve the carbon price signal of the program to incentivize the efficient use of electricity."[45]

5.2 Recipients / beneficiaries of selected option

California households and small businesses that receive electricity or natural gas from an investor-owned utility (IOU) automatically receive the Credit.[46] No application is required. Rather, eligibility is confirmed by the presence of an account with a participating utility at the time of disbursement. Customers of community choice aggregators (CCAs) also receive credits through the investor-owned utility in which the CCA operates.

Residential customers can receive both the electric and natural gas credits. All sub-metered residential customers (including those living in apartments and trailer homes) of participating utilities are eligible for both credits regardless of income level, housing type, or energy usage.

Small business customers from the commercial, industrial, and agricultural sectors are eligible if they generally use less than 20 kilowatts (kW) of maximum power in any given month. Nonprofit organizations are eligible if their power demand did not exceed 20kW more than three times over the past year.

The credits are distributed automatically to customers as a separate line item on customers' utility bills with each disbursement.

5.3 Regulatory and institutional elements to achieve the stated objectives

The California C&T is managed by CARB. As the regulator of the state's investor-owned electric and natural gas utilities, the CPUC partners with CARB on the administration and oversight of the Credit. The CPUC oversees and ensures that the costs utilities include in the electric and natural gas rates are fair and reasonable. CARB provides oversight to ensure the uses of freely allocated allowances by utilities meet its regulatory requirements.

California's Global Warming Solutions Act of 2006 (Assembly Bill 32) authorized the creation of the California C&T, which results in the allowance auction revenues that are distributed as the Credit.[47] California's Public Utilities Code (Section 739.5) provides the statutory basis for CPUC's involvement ensuring the credits are distributed to eligible customers.[48] The process for electric utilities was first operationalized and detailed in the CPUC's 2012 *Decision adopting cap-and-trade greenhouse gas allowance revenue allocation methodology for*

[45] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M040/K631/40631611.PDF

[46] In addition to residential and small business customers that receive Climate Credits, California also issues annual Industry Assistance Credits to facilities in emissions-intensive, trade-exposed (EITE) industries to minimize leakage related to Program costs included in their utility rates.

[47] https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006

[48] https://codes.findlaw.com/ca/public-utilities-code/puc-sect-739-5/

the investor-owned electric utilities (D.12-12-033).[49] Natural gas utilities were brought under the California C&T program starting in 2015, and the methodology for distributing credit revenues to gas customers was established in a later decision, CPUC D.15-10-032.[50]

Each IOU supports the determination of the credit amounts by forecasting the total amount of allocated allowance auction revenues it anticipates receiving for the upcoming year. Most of these revenues are divided amongst the eligible customers, with about 20% used for *"administrative and outreach expenses, CPUC-approved clean energy and energy efficiency programs, and California Industry Assistance to prevent leakage of emissions to other states."*[51]

5.4 How revenue use is reported and communicated.

Each year, investor-owned utilities report on their spending to the CPUC, and these utilities also must submit annual reports to CARB on their use of allocated allowance value. CARB publishes an annual report that summarizes how electric utilities used the auction revenues, including the amounts used for residential and small business Credits.[52] The report on usage in 2023 notes that of the revenues spent by IOUs from 2013 to 2023, 72% (USD 7.75 billion) was returned to residential customers as Credits and about 2% (USD 245 million) was returned as small business Credits. CARB also publishes annual Use of Allowance Value reports for natural gas suppliers. The most recent report notes that of the revenues spent by IOUs from 2015 to 2023, 36% (USD 2.48 billion) was returned as residential Credits.[53]

Further information about the distribution of the Credit, including eligibility, credit amounts, and distribution schedules, is published on the official website of the CPUC. The CPUC provides annual tables showing the total value received per household and per utility, and the timing of credits. Communication materials, including bill inserts and an FAQ section of the website, are provided to inform customers about the credit and its climate policy rationale.[54]

In 2025, further attention was drawn to how revenues were distributed through the Credit via a public announcement from the Governor of California. In addition to explaining the rationale for the Credit and other areas of public investment that have benefited from California C&T revenues, the Governor laid out key indicators of the Credit program's effectiveness. These included the average annual amount that California households have received since the program's inception in 2014 (USD 1,120), the total value of bill credits delivered back to utility customers (USD 10.9 billion) over the history of the program, as well as the total value of bill credits to be delivered this year (USD 2.4 billion; USD 1.4 billion for electric customers and USD 1 billion for natural gas customers).[55]

[49] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M040/K631/40631611.PDF
[50] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M155/K330/155330024.PDF
[51] https://www.cpuc.ca.gov/industries-and-topics/natural-gas/greenhouse-gas-cap-and-trade-program/california-climate-credit/california-climate-credit---faq
[52] https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/allowanceallocation/EDU%202023%20Use%20of%20Allowance%20Value%20Report.pdf
[53] https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/allowanceallocation/NGS%202023%20Use%20of%20Allowance%20Value%20Report.pdf
[54] https://www.cpuc.ca.gov/industries-and-topics/natural-gas/greenhouse-gas-cap-and-trade-program/california-climate-credit
[55] https://ww2.arb.ca.gov/news/millions-californians-get-average-137-credits-their-april-utility-bills-thanks-states-climate

5.5 Findings from regulatory or independent reviews

A 2016 independent academic analysis from the UCLA Luskin Center for Innovation found that the Credit provides meaningful bill relief for residential customers and helps to offset the costs associated with carbon pricing. The study focused on the California C&T's impact on households in disadvantaged communities across the state, due to the disproportionate percentage of their incomes that goes toward energy costs.

The study showed that the Credit likely delivered a positive financial impact for low-income households in each category of application. Factoring in the compliance cost associated with the California C&T and the Credits delivered from 2016 to 2020, low-income electricity utility customers were estimated to receive a cumulative net benefit of USD 215 to USD 246. For natural gas utility customers, the estimated cumulative net benefit ranged from USD 44 to USD 83 between 2015 and 2020.[56]

A 2020 report by the California Legislative Analyst's Office underscores the positive impact of the Credit. The report noted that compliance costs for IOU ratepayers are far less than the amount of IOU revenues that go to benefit ratepayers, suggesting that ratepayers have generally benefitted financially from the economic transfers that occur.[57]

Notably, the CPUC has recently instituted a new rulemaking to explore ways to enhance the effectiveness of the Credit and support customer affordability. This may instigate changes to the structure and methodology of the Credit, potentially introducing different elements of targeting criteria.[58]

[56] https://innovation.luskin.ucla.edu/wp-content/uploads/2019/03/Protecting_the_Most_Vulnerable.pdf
[57] https://lao.ca.gov/Publications/Report/4131
[58] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M574/K655/574655670.PDF

6 Expert dialogue

An in-person ICAP discussion convened national experts and policymakers to reflect on the design and delivery of compensation and support measures that are connected to carbon pricing instruments. The discussion took place under the Chatham House rule on 10 September 2025 in Berlin during the ICAP Annual Meeting. Participants shared experiences from a range of jurisdictions, highlighting both common challenges and important contextual differences. The session emphasized the need for ongoing adaptation and learning, as well as the importance of clear communication and stakeholder engagement in ensuring the effectiveness and public acceptance of these measures.

Key conclusions from the discussion include:

- There is no one-size-fits-all solution; compensation and support must be tailored to local contexts and periodically reassessed.
- Effective communication is critical, with transparency around financial impacts and revenue use essential for public trust.
- Targeting compensation and support to vulnerable groups is important but administratively complex, and future changes in policy may shift who requires support.
- Planning for future shocks and having an exit strategy from the outset is necessary to avoid unforeseen costs or inflexibility.
- Delivery mechanisms matter: automatic transfers can improve reach but may reduce visibility, while application-based systems risk missing those most in need.
- Linking compensation and support programs directly to indices like CPIs can aid social acceptability but introduces new challenges, especially when revenues fluctuate.
- There is a recognized tension between using revenues for direct compensation and support measures such as investing in green measures; while compensation eases immediate burdens, investments tend to deliver more lasting climate impact and public support.
- Considerations around electricity pricing highlight the need to align compensation and support with broader policy objectives to avoid counterproductive incentives.

7 Appendix

No.	Measure	Category	Description	Country / Jurisdiction	Further information
1	Austrian Climate Bonus (Klimabonus)	Income support measure	Direct payments to residents to offset energy price impacts from national ETS	Austria	https://www.klimabonus.gv.at/en/
2	Federal Funding for Efficient Buildings (BEG)	Grants and grant schemes	Grants/support for household renovations and heating transitions linked to national ETS revenues	Germany	KfW BEG funding for heating systems and heat pumps in 2024 - autarc.energy
3	Carbon Dioxide Cost Sharing Act (CO2KostAufG)	Legal/regulatory measure	Splits carbon cost between landlords and tenants to reduce tenant burden	Germany	https://www.gesetze-im-internet.de/co2kostaufg/
4	Renewable Energy Levy (EEG Levy)	Lumpsum energy bill support	Removal of surcharge lowering electricity bills for households	Germany	Renewable energy financing: levy
5	Electricity Savings Check (Stromspar-Check)	Information and advisory services	Energy-saving advice and direct support for low-income households	Germany	https://stromspar-check.de/
6	Housing Benefit (Wohngeld)	Income support measure	Direct payment/top-up for low-income households addressing ETS-related costs	Germany	See: Deutscher Bundestag Drucksache 20/11660 (Klimaschutzberich 2023) No. 231
7	California Climate Credit	Lumpsum energy bill support	Credit on electricity and natural gas bills for households and small businesses	California	California Climate Credit
8	Energy Voucher (Chèque Énergie)	Lumpsum energy bill support	Energy voucher for household energy bills	France	Energy voucher - Beneficiary area
9	Climate Action Tax Credit	Income support measure	Non-taxable payment to low/moderate income households funded by former carbon tax	British Columbia	https://www2.gov.bc.ca/gov/content/taxes/income-taxes/personal/credits/climate-action
10	Canada Carbon Rebate	Income support measure	Direct household rebate formerly linked to the federal fuel charge	Canada	https://www.canada.ca/en/revenue-agency/services/child-family-

					benefits/canada-carbon-rebate.html
11	Rénoclimat Program	Grants and grant schemes Information and advisory services	Personalized advice and financial assistance supporting home energy performance and reduced energy consumption	Québec	https://www.quebec.ca/en/housing-territory/heating-energy-consumption/financial-assistance-retrofits/renoclimat/about
12	Roulez vert Program	Grants and grant schemes	Financial assistance for the purchase of electric vehicles and the installation of charging stations	Québec	https://www.quebec.ca/en/transports/electric-transportation/financial-assistance-electric-vehicle/about-roulez-vert-program
13	Switzerland CO2 Levy Distribution	Income support measure	Revenue from the CO_2 levy paid by the general public is redistributed equally to all persons resident in Switzerland who are insured under the Federal Health Insurance Act	Switzerland	https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/reduction-measures/co2-abgabe/CO2-Abgabe%20f%C3%BCr%20Privatpersonen.html
14	Electric utility credit	Lumpsum energy bill support	Cap-and-invest revenue funds electricity bill credits for low/medium income households	Washington	Climate Commitment Act: Polluters pay, communities benefit | Climate