Policy Brief

green deal UKRAINA

Scaling Up for Europe: A Fund for Ukraine's Reconstruction, Accession and Transformation

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List of Abbreviations

CBAM: Carbon Border Adjustment Mechanism

EEF: Energy Efficiency Fund

EU: European Union

EU ETS: European Union's Emissions Trading System

GHG: Greenhouse Gas Emissions

JSC DETF: Ukrainian Decarbonisation and Energy Transformation Fund

MFF: Multiannual Financial Framework

NECP: National Energy and Climate Plan

SAEE: State Agency on Energy Efficiency

UNDP: United Nations Development Program

UNIDO: United Nations Industrial Development Organisation

UNFCC: United Nations Framework Convention on Climate Change

WEM: With Existing Measures

WAM: With Additional Measures

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Executive Summary: Having to simultaneously defend its sovereignty and align with European Union (EU) standards, Ukraine faces a unique accession challenge: post-war reconstruction choices will determine whether its economy converges with the European climate and industrial model or locks in long-run competitiveness gaps. Current carbon pricing in Ukraine is effectively negligible (< €1/tCO_2), while EU carbon prices generated by the European Union's Emissions Trading System (EU ETS) reached €60–90/t in 2025. Integrating into the EU ETS is essential for accession, but a sudden jump in carbon prices could destabilise key industries and undermine political support. Gradual preparation is therefore critical.

Empirical evidence and EU practice suggest four mutually reinforcing design principles to make rising carbon prices feasible: (1) predictable and gradual increase in carbon prices to guide investments without causing political/social/economic disruptions; (2) smart revenue recycling to offset distributional impacts and finance green investment, helping to overcome industrial vested interests; (3) front-loading finance to bridge the time gap between the immediate costs of decarbonisation and its longer-term economic and environmental benefits; and (4) international transfers to overcome local capital scarcity allows to invest in modernisation with comparatively low mitigation cost.

Despite the establishment of a carbon revenue recycling system in Ukraine, scale remains the binding constraint: Ukraine's low carbon price, and the unlikely prospect of its soon increase, combined with only fragmented financial inflows from abroad, restrict its recycling system to the support of individual decarbonisation projects, rather than systemic decarbonisation. Therefore, political support for decarbonisation strategies, such as gradually increasing Ukraine's carbon price, remains low and is unlikely to rise during wartime.

To resolve this chicken-and-egg problem, the paper proposes a rule-based co-financing bargain in which EU-linked international contributions are matched with Ukraine's domestic carbon revenues. These combined funds would flow into a Decarbonisation Fund embedded in a Ukrainian-European governance structure, creating a large financing vehicle for industrial decarbonisation and green reconstruction. Predictable co-financing ('matching') would provide an incentive for Ukraine to gradually increase its carbon price. Recycling and co-financing enable visible domestic benefits that substantially ease the political economy of meaningful carbon price reform. For the EU, channelling significant recovery support through such a fund has the advantage of encouraging the effective delivery of climate conditionalities, while safeguarding good governance of substantial EU funding.

Delivering this outcome requires a dual commitment: domestic legal and institutional reforms to set up a meaningful carbon pricing pathway and robustly involving international partners in the funds oversight, and a willingness by the EU to provide predictable, rule-based green finance. The 2026 policy window, coinciding with the EU's Multiannual Financial Framework negotiations creates a timely opportunity.

1 Ukraine's EU Accession Challenge: The dilemma of introducing an effective carbon price

Ukraine is fighting a war of survival while simultaneously preparing for membership in the European Union. These two processes are deeply intertwined. Post-war reconstruction decisions will determine whether Ukraine's economy converges structurally with the EU's climate and industrial framework or whether misalignment creates long-term competitiveness gaps. A central element of accession is the integration into the EU's climate architecture, including eventual alignment with the European Union Emissions Trading System (EU ETS).

Today, Ukraine's carbon tax remains below 1 Euro per tonne of CO_2 - a rate introduced in 2011 and only marginally increased since then. Meanwhile, the EU's carbon price has oscillated between 60 and 90 Euros per tonne in 2025. Ukraine's pursuit of full EU membership - with aspirations for accession as early as 2027 or 2030 - requires a seamless integration into the EU ETS. However, a sudden 'carbon price shock' - jumping from 1 Euro to maybe 80 Euros per tonne - has the potential to destabilise key industrial sectors. To prevent this from becoming an economic and political barrier to EU accession, the primary policy challenge is to facilitate a phased price alignment coupled with robust investment mechanisms to adapt Ukraine's economy to such price levels.

The macroeconomic context complicates this adjustment: Long-term finance from domestic banks is scarce (OECD, 2025) and inflation is volatile and relatively high[1]. Abrupt carbon price increases risk undermining industrial competitiveness and eroding political support for decarbonisation. Carbon-intensive industries in Ukraine would require substantial investments to be able to reduce their carbon footprint in order to stay competitive amid increasing carbon prices. At the same time, carbon pricing, when passed through to electricity and district heating consumers, tends to have regressive distributional effects, disproportionately affecting lower-income households.

In Ukraine, where fiscal constraints limit the scope for broad support, abrupt carbon price increases risk undermining political support for decarbonisation and EU accession. This paper, therefore, argues that abruptly increasing Ukraine's carbon price shortly before the country's EU accession and without enabling households and industry to adapt is neither politically nor economically sustainable. A predictable, more gradual pathway to increase carbon prices reduces the challenges.

Economic literature suggests that revenue recycling can mitigate the adverse effects of stringent carbon prices: When carbon revenues are channelled back into the economy through investment support, industrial modernisation, or targeted transfers, they can mitigate regressive impacts while strengthening political coalitions for climate policy. Ukraine has already taken an important step by establishing the Ukrainian Decarbonisation and Energy Transformation Fund (JSC DETF), a dedicated mechanism to channel carbon revenues into energy efficiency and decarbonisation projects.

However, scale remains the fundamental constraint. Between October 2024 and December 2025, the Fund disbursed approximately €31 million in loans, while estimated decarbonisation needs for

[1] In 2025 the National Bank of Ukraine reported annualised inflation from 13% in January increasing to 16% in May and down to 8% in December.

industry alone amount to €12 billion by 2030[2]. In other words, roughly 0.2% of projected needs have been covered. At current carbon price levels, domestic recycling cannot generate the visibility, macroeconomic relevance, or political momentum required to support a sustained carbon price increase. Thus, major emitters and industrial stakeholders do not view the current JSC DETF as a relevant partner for large-scale industrial transformation. This limits the fund's ability to generate the visibility and political trust needed to support a higher carbon price, and creates a chicken-and-egg problem:

- Without a higher carbon price, revenues remain too small to build political support.
- Without visible investment benefits, raising the carbon price becomes politically difficult.

To overcome this, Van der Ploeg (2023) argues that targeted transfers from wealthier states could enable countries to move towards a higher carbon price trajectory. If the carbon price were gradually increased in line with the "With Additional Measures" (WAM) scenario of Ukraine's first Biennial Transparency Report under the Paris Agreement[3], and international funding would match these revenues, our estimates suggest that, under a 2030 carbon price consistent with this trajectory, a co-financed structure could mobilise up to €6.6 billion annually. Revenues would scale in parallel with the carbon price, creating a strong incentive for gradual alignment with EU levels and supporting preparation for EU accession.

The European Union has already mobilised substantial financial support for Ukraine since the start of the full-scale war, exceeding €100 billion through budget support, macro-financial assistance, and emergency relief (European Council, 2026). The EU's financial efforts in Ukraine are going to stay high as suggested by the €90 billion Ukraine Support Loan for 2026–2027 approved in February 2026 by the European Parliament (European Parliament, 2026), and the proposed 2028–2034 Multiannual Financial Framework including a "Ukraine Reserve" of up to €100 billion, providing a structural, multi-year window for large-scale support (European Commission, 2025c). According to the European Commission, the whole MFF should include almost €700 billion for environmental investments for a proposed 35% spending target for climate & the environment (European Commission, 2025b). Together, this has the potential to create a realistic political and financial opportunity to link rule-based EU co-financing of the Ukrainian Decarbonisation Fund to the country's domestic carbon revenues, strengthening the rationale for gradual carbon price increases, and eventually serving the successful EU integration of the country.

This paper develops a conceptual blueprint that matches rising domestic carbon revenues with predictable international co-financing, and uses these combined funds to finance investments that prepare Ukraine's economy and society for a level of carbon prices that is consistent with EU accession. This mechanism is not intended as a permanent parallel architecture. Rather, it should

[2] Estimations according to the Head of the Decarbonisation and Energy Transformation Fund, Anna Zamazeeva (Delano, 2024).

[3] For the modelling of the WAM scenario, particularly for the energy, industry, and energy supply sectors, the assumption is that the CO_2 emissions price will remain at 30 UAH/t during martial law until 2025, and from 2026 to 2027 will be about 1EUR/t. Thereafter, it will reach the levels indicated in the International Energy Agency's 'announced commitments' scenario for developing countries (including Ukraine) that have net-zero commitments: 38EUR/t in 2030, 105EUR/t in 2040, 152EUR/t CO_2 in 2050.

function as an enabling tool that helps Ukraine transition to EU ETS price levels, build the necessary institutional and industrial capacity, and eventually phase itself out once full integration into the EU ETS is feasible.

The remainder of the paper proceeds as follows. Chapter 2 evaluates carbon pricing lessons from the academic literature and practical EU experience. Chapter 3 assesses how these lessons are applied in Ukraine. Chapter 4 develops a design blueprint of a UA-EU co-financing model. Chapter 5 elaborates on the upscale potential of the proposed approach. Chapter 6 concludes.

2 Carbon Pricing Lessons from the Literature & the European Union: How to make carbon pricing work

Full implementation of the EU's climate legislation requires alignment with the EU ETS and related regulatory and fiscal frameworks. Ukraine cannot realistically complete the regulatory and market convergence demanded by accession without a credible path toward comparable carbon prices. Therefore, this chapter discusses how to make a strongly rising carbon price politically and economically viable.

The literature and EU policy practice point to four mutually reinforcing design principles that can make a rising carbon price politically feasible without triggering sustained backlash.

2.1 Gradualism matters

Policy acceptance improves when price rises are predictable and gradual rather than abrupt. Evidence shows opposition is strongest in the run-up to a new tax and tends to fall as actors adapt once the policy is in place (Carattini et al., 2018). Successful schemes, therefore, tend to follow a gradual trajectory, providing time for adjustment while building political and social acceptance. The EU's own phased approach, which implied rising carbon prices over time, illustrates how gradualism reduces short-term political salience and increases policy durability. A recent national example is the introduction of a national carbon price for transport and heating in Germany that also served to prepare the country for the forthcoming European trading system for permits for emissions in these sectors (ETS2).

2.2 The criticality of carbon revenue recycling

Carbon pricing imposes costs in the present, while environmental benefits materialise mainly in the longer term. For the industry, it raises costs. At the household level, carbon pricing can create indirect distributional effects through cost pass-through into the prices of energy and other carbon-intensive goods. As lower-income households typically spend a larger share of their income on such necessities, these effects can be regressive. This temporal asymmetry creates resistance, as voters and firms face immediate costs with few visible benefits (Silvi & Padilla, 2023). Carbon revenue recycling - the practice of using carbon pricing proceeds to lower other taxes or fund public investments - can compensate for perceived losses. In specific circumstances, a 'double dividend' (Pearce, 1991) might arise in the form of additional economic growth by reducing the distortionary effects of existing taxes

or growth-stimulating public investments. Smart revenue recycling can hence improve economic efficiency and political acceptability.

To signal to voters that carbon taxes are not just a new revenue stream for public budgets, studies have shown that earmarking revenues for climate mitigation and compensation measures significantly increases public support for carbon pricing policies (Mohammadzadeh Valencia et al., 2024). Accordingly, many EU member countries channel ETS revenues into dedicated climate and energy funds to support industrial decarbonisation while also mitigating adverse impacts on households. Several European countries already use carbon-pricing revenues to cushion household impacts, for example by financing energy-efficiency measures or reducing electricity network charges. Revenue recycling therefore serves a dual purpose: it facilitates industrial transformation while addressing the distributional consequences of higher carbon prices for households.

2.3 Front-loading finance helps overcome the time mismatch between costs and benefits

While carbon revenues theoretically expand fiscal resources, the immediate entry costs of an ambitious price trajectory often exceed the domestic capacity of economies facing acute structural or conflict-related constraints. Lackner (2024) et al. write:

"[O]ver the long term, carbon taxes hold the potential to trigger a positive social tipping point […] The question of whether these carbon taxes might undermine their own public support before the positive tipping point occurs remains unanswered […] Policymaking strategies relying on the assumption that public opinion will favourably shift at the opportune moment appear excessively risky."

Thus, a key political-economy challenge of carbon pricing is the timing mismatch between when costs occur and when benefits materialise, highlighting the importance of front-loading investments. One potential response to this challenge might be the possibility of borrowing against future carbon revenues in order to frontload mitigation investments.

2.4 International transfers can enable higher ambition

Countries with limited fiscal space or conflict-related economic constraints face particular difficulties in sustaining robust carbon pricing. Literature suggests that targeted transfers from wealthier to poorer, carbon-intensive economies can help overcome distributional concerns and political resistance, thereby enabling a credible carbon price trajectory (Van der Ploeg, 2023). The existence of the EU's Modernisation Fund, created to support lower-income EU jurisdictions to modernise energy systems and manage distributional transitions, illustrates this insight: where domestic fiscal capacity is limited, predictable co-financing is needed to make carbon pricing socially acceptable. By implication, the case for international co-financing is even stronger for Ukraine. As Europe's poorest country, currently preparing for EU accession under wartime conditions and severe fiscal constraints, Ukraine faces far greater structural and financial barriers than the lower-income EU Member States for which the Modernisation Fund was designed. If solidarity-based co-financing is considered necessary within the EU to enable carbon price convergence, it follows logically that a comparable, institutionalised support mechanism will be essential for Ukraine to develop a credible carbon price trajectory compatible with eventual EU ETS integration. Co-financing Ukraine's decarbonisation from the side of the EU would therefore not represent an exceptional concession, but rather the external

extension of an established principle within the EU's own climate governance architecture. Such support would be mutually beneficial: it would facilitate Ukraine's transition, and at the same time also reduce future integration costs and contribute to a more level playing field within an eventually integrated European carbon market.

Academic analyses show that large-scale, stable finance programmes are more likely to deliver systemic emissions reductions, as they enable long-term investments in infrastructure, clean energy, and institutional capacity (Kulkarni & Dubey, 2024). Accordingly, the UNFCC emphasises that effective climate action requires sustained and predictable financial flows (UNFCC, 2026). This suggests that co-financing from the EU should happen on a large-scale basis, and as predictably as possible, at best embedded in a rules-based matching approach.

3 Carbon Pricing Lessons applied in Ukraine?

The following chapter assesses Ukraine's success in implementing the above-described carbon pricing lessons.

3.1 Ukraine's carbon price recycling system is promising, but has not yet proven effective

Since 2024, Ukraine's carbon-tax receipts have been credited to a dedicated special budget line[4] - the State Fund for Decarbonisation and Energy Efficiency Transformation - and a legislated share of those receipts (90% of the budgeted amount) is allocated to the fund's operational vehicle, the JSC DETF. The Ministry of Finance retains formal budgetary control over the special fund, while the State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE) is the founding shareholder and supervisory coordinator for the JSC DETF.

The JSC DETF has been constituted as a state-owned joint-stock company rather than a classical budgetary agency to permit financial intermediation activities that are difficult to execute within ordinary budgetary structures, including concessional and commercial lending, financial leasing, factoring and blending of revenue streams (domestic CO_2 tax receipts, bilateral and multilateral grants, and private co-finance).

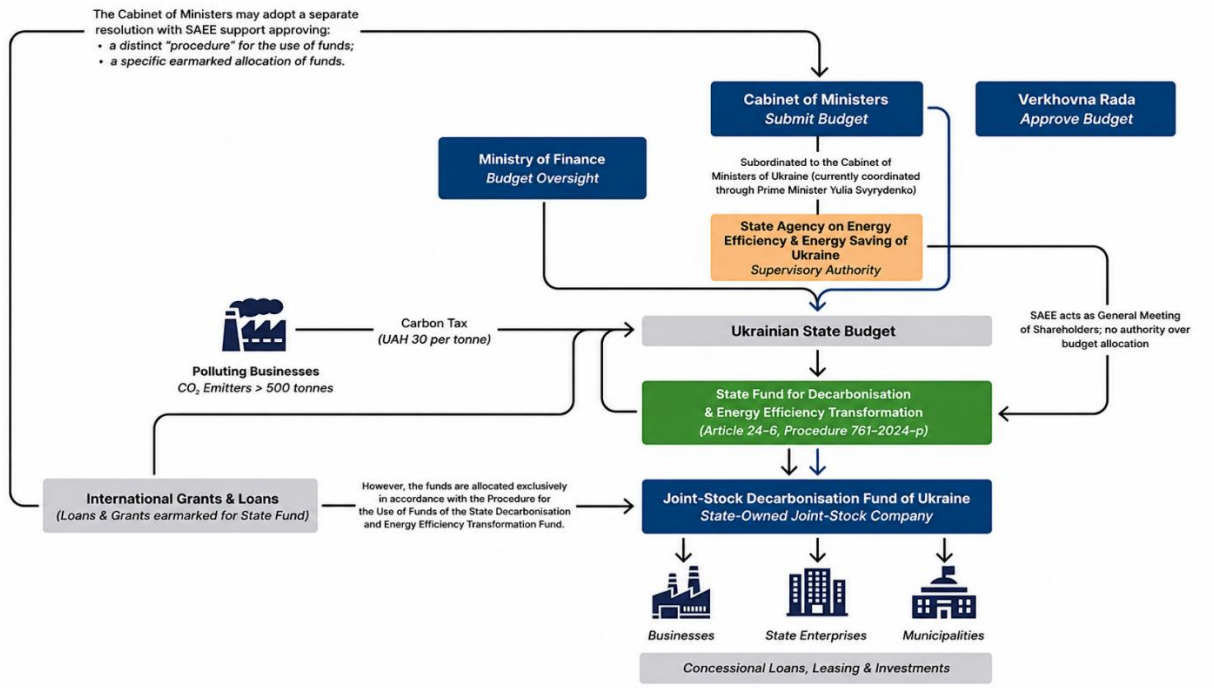
Formally, the JSC DETF's mandate (as set out in the national budgeting framework and related regulations) is to finance projects that deliver energy efficiency, renewable generation, alternative fuels, and broader greenhouse-gas reductions using a mix of concessional and market instruments. Eligible recipients include firms, state enterprises, municipalities and homeowners' associations[5] (SAEE, 2025a).

The following scheme attempts to illustrate Ukraine's carbon revenues recycling system, in which the JSC DETF is embedded:

[4] In accordance with Article 24-6 of the Budget Code and Government Procedure No. 761-2024-p

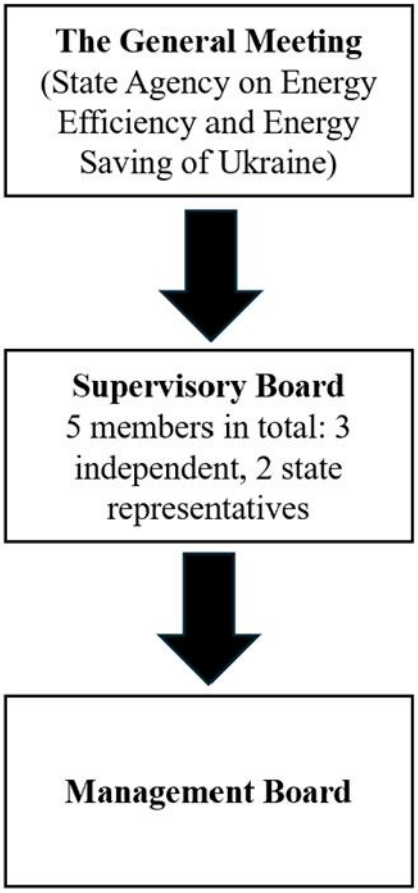
[5] Through a cooperation framework between Ukraine's Energy Efficiency Fund and the DETF as of 2025, HOAs and housing cooperatives can apply under programmes such as GreenDim.

Figure 1 Scheming Ukraine's carbon revenue recycling system



The State owns 100% of the shares in the JSC DETF, and retains the legal authority to direct carbon-revenue allocations. The State's shareholder role is exercised through the SAEE, which represents the State in the '*General Meeting*' (the fund's supreme governance body). As SAEE is the only shareholder, all decisions that would normally require a '*General Meeting*' are formalised in written resolutions by SAEE.

Figure 2 Governance of JSC DETF



The '*Supervisory Board*' is appointed by the '*General Meeting*' and must include a majority of independent members; formally, it comprises five members (three independent, two state representatives) (Decarbonisation Fund Ukraine, 2024). This is in line with the Law of Ukraine on Joint Stock Companies, stipulating that in joint stock companies where the state holds 50 percent or more of the share capital, independent members must constitute the majority of the supervisory board (Верховна Рада України, 2023).

However, competitive selection for '*Supervisory Board*' members was suspended under martial law via a resolution of the Cabinet of Ministers of Ukraine (CMU Resolution No. 643), and, despite invitations to international stakeholders, the '*Supervisory Board*' remained composed exclusively of domestic appointees as of May 2026.

The '*Supervisory Board*' appoints and supervises the '*Management Board*', and establishes its key performance indicators. The '*Management Board*' is responsible for the day-to-day management of the Fund and implements the decisions approved by the '*Supervisory Board*' and the '*General Meeting*'.

Project selection is a two-stage process: projects are evaluated by the '*Competition Commission*'[6], established and headed by the SAEE. The '*Competition Commission*' reviews eligible applications, applies the scoring criteria set out in Annex 1, and adopts preliminary recommendations. According to Annex 1 of the official Procedure on Using the Funds of the State Decarbonisation and Energy Efficiency Transformation Fund (No. 761), projects are assessed for meeting the compliance-based, quantitative and technical criteria, such as reductions in energy consumption, substitution of fossil

[6] The selection process for the Competition Commission is vague. It is established by the head or the deputy of the State Energy Efficiency Agency, with representatives of ministries, other executive authorities, and international organisations allowed to participate. However, the nomination procedures, membership criteria, or formal appointment rules are not specified. As the concrete roles of the Fund, Supervisory Board, and Management Board in the approval or endorsement of commission decisions are not documented, this leaves an accountability gap. According to the head of SAEE, UNIDO was invited to participate in the project evaluation process.

fuels with renewable energy, greenhouse gas emission reductions, and the use of nationally produced equipment[7].

The final decision on which projects are financed, however, is then made by the management of the Fund. While this has allowed all eligible projects to be funded to date, leaving the final decision to management could create an accountability gap once demand outstrips available financing.

3.2 Carbon prices and revenues stagnate at a low level

The JSC DETF is funded primarily through quarterly transfers from the State Decarbonisation and Energy Efficiency Transformation Fund, the special fund, established as a line item in the budget line item in the budget under the Ministry of Finance. As elaborated above, this budget line item is based on revenues from Ukraine's carbon tax. The tax was first introduced in 2011 at a rate of UAH 0.2. Since then, it has increased minimally, rising to UAH 0.41 in 2018, UAH 10 in 2019 and UAH 30 per ton of CO2 equivalent in 2022. Liable entities to the carbon price are business taxpayers with annual CO_2 emissions above 500 tonnes.

Ukraine's first Biennial Transparency Report under the Paris Agreement (UNFCC, 2025) sets out two scenarios for the further development of Ukraine's carbon tax without specifying the implementation mechanism:

- **"With Existing Measures" (WEM) scenario:** the CO_2 emissions tax rate remains at 30 UAH/t during martial law and potentially for some time afterwards. It is expected that from 2026, all taxes, including the CO_2 emissions tax, will be indexed. Accordingly, the CO_2 tax rate will increase slightly and reach about 1 EUR/t by 2050.
- **"With Additional Measures" (WAM) scenario:** Particularly for the energy, industry, and energy supply sectors, the assumption is that the CO_2 emissions price will remain at 30 UAH/t during martial law until 2025, and from 2026 to 2027 will be about 1 EUR /t. Thereafter, it will reach 38 EUR/t in 2030, 104.5 EUR/t in 2040, and 152 EUR/t CO_2 in 2050. At the same time, for other sectors (transport, agriculture, residential, and commercial), a more gradual price increase is envisaged.

Having the goal of EU accession by at the latest 2030 in mind, which would be accompanied by integration into the EU ETS, Ukraine's carbon tax needs to be assessed against the carbon price of ~60-90 EUR/t currently observed within the EU ETS. Hereby, not even the WAM scenario would be sufficient to prepare the country sufficiently for EU ETS integration. Even more: it seems highly unlikely that Ukraine will be able to implement the WAM pathway, given that this scenario would constitute a more than 60-fold increase in Ukraine's current carbon tax by 2030, which would need to happen during or shortly after wartime.

[7] Projects are scored based on quantitative thresholds for (i) energy intensity or fuel consumption reductions (0–4 points for 10–15 % to ≥ 35 %), (ii) substitution of fossil fuels, electricity, heat or transport fuels with renewable or alternative energy sources (0–5 points for < 20 % to ≥ 70 %), (iii) greenhouse gas emission reductions (0–3 points for ≤ 10 % to ≥ 40 %), (iv) own financial contribution (0–5 points for < 20 % to > 70 %), and (v) use of nationally produced equipment (5 points if national content exceeds 70 %). Bonus points may be awarded for renewable generation, energy storage or high-efficiency cogeneration projects.

Thus, implementing a gradually rising carbon pathway constitutes a challenge in Ukraine, also given that a fully-fledged cap-and-trade system would not emerge until at least three years after the end of martial law.

Ukraine's limited carbon tax resulted in revenues of more than UAH 2 billion in 2024. Revenues for 2025 are expected to reach approximately UAH 1.75 billion, with nearly UAH 1.9 billion forecasted for 2026 (Danish Energy Agency, 2025). This is in line with Ukraine's National Revenue Strategy until 2030, which intends to maintain the level of revenue mobilisation during martial law and strengthen revenue mobilisation only after its termination. At current exchange rates, collected carbon revenues correspond to roughly €40 million per year.

While these revenues provide a stable domestic funding base, their scale remains modest relative to the investment volumes required for economy-wide decarbonisation and industrial modernisation.

3.3 Patchy international transfers do not yet encourage higher climate ambition

In addition to the Ukrainian carbon revenues, DETF JSC aims to attract international contributions (Ukrainian Government, 2023) in the form of loans and grants. To date, a $350,000 grant has been provided by the United Nations Development Program (UNDP) (Pobel, 2024), and $1.5 million from the United Nations Industrial Development Organisation (UNIDO) (Decarbonisation Fund, 2026). Other international partners, including the EU, have refrained from contributing so far, whilst negotiations with the European Bank for Reconstruction and Development are in process.

Donors have problems committing funds for a longer period of time, driven, for instance, by concerns over misallocation of their funds (Swedlund & Lierl, 2020). The mentioned international donor contributions consist of isolated, project-based grants since October 2024. While they may signal some initial confidence in Ukraine's implementation capacity, they also show that donors aim to retain flexibility to adjust their support.

Thus, this is far away from the large-scale, predictable co-financing approach as suggested by our literature analysis in chapter 2. Irregular and fragmented international support limits a Fund's ability to plan multi-year programmes, undermines its role in creating credible expectations of future benefits from higher domestic carbon prices, and reduces overall efficiency in resource deployment (Cichocka & Mitchell, 2022). Instead, decarbonisation financing is most effective when funding flows are predictable.

3.4 Timing mismatch: low current revenues prevent front-loading of investments

The timing mismatch of decarbonisation policies, meaning that large investments are required early, while carbon revenues only grow slowly as prices increase, is particularly visible in Ukraine. One structural option for addressing this mismatch would be to introduce the possibility of borrowing against future carbon revenues using projected revenue streams as collateral to access upfront financing, for instance, through the European Investment Bank. This would allow the fund to frontload mitigation investments rather than pacing them to the gradual accumulation of carbon revenues, which is particularly relevant in the context of post-war reconstruction, where early investment decisions risk locking in carbon-intensive infrastructure for decades. The viability of such

an approach depends, however, on the predictability of the underlying carbon price trajectory, as well as on the fund's institutional capacity to manage debt obligations — conditions that are not yet met in the current Ukrainian context.

3.5 Synthesis

Ukraine managed to set up a carbon revenue recycling system. But its low carbon pricing, combined with fragmented minor financial inflows from abroad, restricts it to the support of individual decarbonisation projects, rather than systemic decarbonisation.

Ukraine's recent draft ETS law demonstrates that policymakers have internalised the principle of carbon revenue recycling. It proposes the establishment of a Ukrainian Modernisation Fund, modelled on the same basic logic as the existing Decarbonisation and Energy Efficiency Transformation Fund, but financed through future ETS auction revenues rather than the carbon tax. Yet, this institutional innovation does not fundamentally alter the core constraint identified above. According to current projections, ETS revenues would amount to around UAH 41 million by 2029, a fraction of the roughly UAH 2 billion currently generated by the carbon tax. In other words, the draft law reinforces the commitment to earmarking carbon revenues for decarbonisation, but not the scale of available financing. As long as carbon prices and the associated revenue base remain low, neither instrument is likely to provide the level of investment needed to meaningfully support Ukraine's industrial modernisation.

With that, Ukraine is situated within a vicious circle that has the potential to hamper its EU accession process: Its low carbon price results in negligible revenues. The recycled revenues can accordingly not effectively support Ukraine's decarbonisation approach. Without visible, early and effective relief for those affected most by rising carbon prices, sufficiently fast increases are politically very difficult.

Figure 3 Academic insights & EU experience on building policy acceptability for a credible carbon price trajectory

Insight	Policy Implication	Status
Ensuring that carbon revenues are used to support most affected and/or help reduce emissions (e.g., **earmarking** through National Climate Funds)	Ukraine starts the operation of JSC Fund for Decarbonisation and Energy Efficient Transformation in 2024	✓
Price increases are **gradual and predictable.** (e.g. phase in of ETS 2)	Ukrainian carbon price would have to increase ~ 80x when joining EU; **gradual increase now crucial to prevent pushback**	✗
Overcome **timing mismatch** when decarbonisation investments only start arrive after carbon revenues accrue (e.g., frontloading of ETS2 revenues)	Low revenues do not allow supporting industrial decarbonisation investment -> **using funds future revenues and foreign grants/landing to frontload investments**	✗
Targeted transfers from wealthier to poorer economies (e.g., EU Modernisation Fund)	**The EU should support Ukraine financially** to manage the upscale of its domestic carbon price	✗

4 Theory of change: Why the EU should support Ukraine's Decarbonisation Pathway

This section argues that the above-described suboptimal equilibrium can be escaped with the help of targeted international co-financing. If the amount of international co-financing is linked to the amount generated by the Ukrainian domestic carbon price, this would give the country an incentive to gradually raise its carbon price.

The logic underpinning the 2025 Sevilla Commitment (UN, 2025) strengthens the case for such an arrangement. The EU, together with other donors, committed to substantially scaling up support for domestic revenue mobilisation, particularly in countries with weak fiscal capacity and high investment needs. The underlying principle is that international co-financing should complement and incentivise reform efforts aiming to mobilise domestic revenues. Applied to Ukraine, EU matching support linked to gradually increasing carbon revenues would follow the same principle of incentivising domestic reform while enhancing its political and economic feasibility.

The EU should have an interest in such an arrangement. Ukrainian industry that enters the single market with carbon-intensive production processes, stranded assets, and misaligned incentive structures would generate adjustment costs that European institutions, including the EU ETS, would ultimately have to absorb. Having already committed to supporting Ukraine's modernisation and recovery through multi-year investment and reform packages (European Commission, 2025a), and given that carbon pricing is the EU's own preferred instrument for industrial decarbonisation, it has a particular interest in supporting arrangements that enable an effective carbon price. If the EU could support the establishment of effective carbon pricing already before Ukraine's accession into the European Union, the EU would eventually benefit from lower future adjustment costs, new business opportunities for European firms in decarbonisation-related sectors, and a smoother integration of Ukrainian industrial value chains into the single market.

Ukraine, on the other hand, should agree, as it gets co-financing for a policy choice it would need to fulfil anyway in the process of EU accession. Co-funding from the EU would make the transition into a rising carbon price smoother and socially as well as politically less resistible.

A net benefit also arises, as such an instrument is a 'commitment device'[8] that allows to lower political uncertainty for investors, and thus reduces risk premia and hence capital cost for the much-needed investments.

4.1 Conceptualising the political bargain

The political economy literature on development bargains suggests that in contexts of limited fiscal space, ambitious reforms that create concentrated losses and diffuse gains are unlikely to be sustained. Following Cox et al. (2015), reforms that are technically efficient but sharply reduce existing

[8] A commitment device is a mechanism designed to make unwanted future policy changes more costly (in our case losing the co-financing for Ukraine). This reduces the risk of short-term temptations once political pressures arise. This bolsters policy credibility, anchors expectations, and significantly reduces economic uncertainty for investors and the public.

rents risk provoking resistance, obstruction or outright attempts to capture the new institution. Against this background, mechanisms such as the JSC DETF should be understood as a vehicle for a specific political bargain rather than as a purely technocratic funding instrument. The core of our proposed bargain is straightforward:

- On the domestic side, Ukraine commits to gradually increasing and more comprehensive carbon prices, and accepts co-decision in the Fund.
- On the international side, European institutions, EU Member States and other willing partners commit to predictable co-financing, and technical support that systematically matches Ukraine's domestic effort. Instead of ad-hoc project funding, international contributions become the second leg of a rule-based co-financing arrangement, and should occur in a predictable and automatic manner. We suggest that partners might use Ukrainian carbon revenues as a yardstick for the Ukrainian efforts, essentially promising to match these revenues with their own contributions.

Such matching could lead to significantly higher revenues, allowing the fund to pursue more ambitious objectives, but also requiring it to be more robustly designed. The JSC DETF currently focuses on projects in the residential sectors or supporting small and medium-sized enterprises. A fund that receives revenues from both a carbon price and predictable international financing could have expanded its objectives and, for example, also bring about decarbonisation measures in the most carbon-intensive industries in Ukraine. Subchapter 5.1 elaborates further on future objective possibilities for a co-financed decarbonisation fund. All in all, a substantial decarbonisation fund in Ukraine could help to overcome political barriers to an ambitious decarbonisation trajectory.

4.2 Making the political bargain happen: How to attract co-financing from the EU?

As set out by the UNDP Guidebook for the Design and Establishment of National Funds, the Fund's governance structure needs to reflect its size and objectives (UNDP, 2015). If the goal is to link long-term EU co-financing to the Fund, adequate governmental arrangements of the Fund are needed. Partners would likely only commit to such structural and substantial co-financing if there are safeguards to ensure funds are used for the intended purpose of efficiently supporting industry in adapting to higher carbon prices, primarily through investments in low-carbon alternatives. Eligibility criteria for these safeguards should be politically defined and embedded in the Fund's governance framework.

The UNDP Guidebook states that "[o]ften, a steering committee or other group makes decisions on the disbursal of funds and oversees the high-level activities of the fund […]." Further, it states that such steering committees often include representatives from the sources and implementers, as well as the trustee, on the steering committee. Thus, a Fund aiming to receive financial revenue streams from multiple sources should consider representing precisely those financiers at this governance level.

Bhandary (2021) states: *"While the most straightforward way might be to use regular government budgets to finance activities on climate change, such an approach may not be the best way to attract climate finance."* In its principles, this is the approach undertaken by Ukraine. In the current

framework, the SAEE is the 100% shareholder of the JSC DETF and is the only entity represented in the General Meeting of JSC DETF. Funds are channelled through the state budget administered by the Ministry of Finance of Ukraine; an external trustee, as other funds receiving international money inflow have, is not included in the governance structure of JSC DETF. As fiduciary oversight and financial governance remain fully embedded within Ukrainian budget structures, this can put off international partners from supporting the Fund on a large-scale basis.

Thus, if the policy goal is to match Ukraine's carbon revenues with EU financial streams, options need to be explored on how to reflect such a financing rearrangement also in the governance structure of such a Fund. Hereby, several options serve as blueprints:

- **Using an existing Ukrainian Fund** could be done by enabling SAEE to manage large external co-financing. This would require the SAEE to accept EU-nominated supervisory members on the Fund's Supervisory Board[9]. If combined with improvements in transparency in the project selection process[10], this could represent a pragmatic step to strengthen oversight and increase EU confidence in the Fund. The most important complication of this approach concerns the organisation of international financial flows. At present, international contributions intended to support the activities of JSC DETF are first received by the Ukrainian state and only subsequently earmarked for the State Fund for Decarbonisation and Energy Efficiency Transformation, from which JSC DETF finances its activities. This complicates the establishment of an automatic matching mechanism with EU funding. In sum, this option would allow Ukraine to build on its existing carbon revenue recycling system, but may require legal amendments.
- **Operating a domestic and an international fund back-to-back** could be done by keeping Ukrainian carbon revenues within the national budget while establishing a separate trust fund, through which international financial contributions can be channelled. Both funding streams could operate under the broader umbrella of Ukraine's Decarbonisation Fund and be coordinated through a jointly governed board. A possible governance role model for that could be the Ukrainian Energy Efficiency Fund (EEF). The EEF is a Ukrainian legal entity, but capitalised jointly by Ukraine and international donors. For international donor contributions a multi-donor trust fund managed by the International Finance Corporation is set up. The EEF's Supervisory Board constitutes two Ukrainian government representatives, two independent members chosen in a competitive selection procedure[11], and one donor representative. Such a structure allows domestic ownership of national resources while still

[9] Wartime governance constraints complicate such arrangements. During martial law, competitive selection procedures are suspended, and the state budget does not allocate funding for organising supervisory board competitions or covering related expenses. Practical solutions should be explored to ensure that independent members of the Supervisory Board can be credibly nominated, potentially with a formalised role for the EU side in proposing or endorsing candidates.

[10] One option could be to delegate project selection to international financial institutions. Under current Ukrainian legislation, this is permissible only for projects financed directly by international donors, which limits the scope for outsourcing project appraisal in a co-financed structure. Ukrainian and EU policymakers should jointly explore how a transparent and technically robust project selection process for a co-governed Fund could be designed.

[11] In practice, the Supervisory Board has often operated with only one independent member.

providing international partners with a role in the strategic governance of externally financed activities through their seat in the Supervisory Board, and the established separate trust fund.

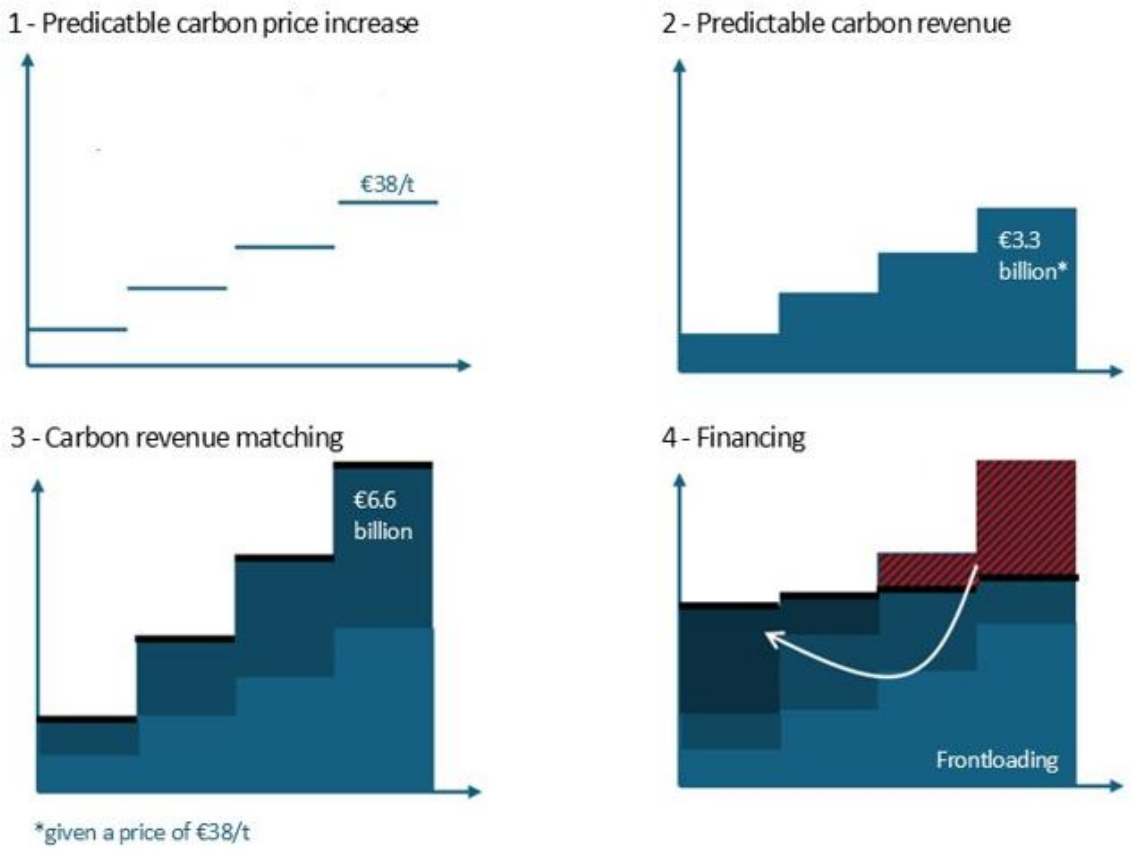
- **The Outsourced Trust option** differs fundamentally from the above-mentioned options as it explicitly does not entail the creation or reform of a Fund based within the Ukrainian system. A possible idea here could be to enable a limited participation of Ukraine in the EU's Modernisation Fund. This would integrate Ukraine into EU structures early, but also require several legal and political adjustments on the EU and Ukrainian side. The EU would need to find a solution for how to include a non-member state into the Fund. One possible pathway could be the creation of a "Ukraine Window" within the Modernisation Fund, i.e. a ring-fenced participation mechanism for war-affected candidate countries, into which Ukraine would channel its carbon price revenues. The administration of Ukrainian carbon revenues outside of the ordinary state budget framework conflicts with current legislation and would represent a significant intervention into Ukraine's current carbon revenue recycling system. However, such a window could be the basis to auction a share of EU ETS allowances for Ukraine, and could create the foundation of the proposed co-financing approach, without formally reopening the core structure of the Modernisation Fund.

The question of how co-governance might ultimately be implemented remains primarily a legal and political one. In whatever way co-governance might be established eventually, it should serve the goal to increase international as well as domestic confidence in the Fund, and can shift the Fund's reliance from international ad-hoc contributions to a formalised and predictable matching mechanism.

5 The Scaling Possibilities of a Co-Financed Decarbonisation Fund

Agreeing to a shared EU-Ukrainian Supervisory Board of the Fund, as proposed, should give Ukraine the opportunity to argue for a 50:50 co-financing model combining domestic carbon revenues and international contributions. Linking the amount of financial support from the EU side to the amount of the carbon revenues collected by Ukraine could incentivise a gradual increase in Ukraine's carbon price and a widening of its scope, thereby preparing the country for integration into the EU ETS. Such a model would offer Ukraine the advantage of not having to finance industrial decarbonisation entirely from domestic resources, thereby increasing the likelihood of success. This section sets out what this could mean in quantitative terms.

Figure 4 Carbon revenue matching scheme



5.1 Domestic Component – Ringfencing and sectoral "pots"

Currently, Ukraine's carbon tax remains below €1/tCO_2, which is less than two percent of current EU carbon prices. The effective tax base is also narrow: only 39% of Ukraine's greenhouse gas (GHG) emissions are covered by its carbon price (OECD, 2024), excluding, for instance, the pricing of methane and other short-lived climate pollutants. This combination of a low rate and a narrow base severely constrain revenue potential and weakens investment incentives.

Ukraine's most recent greenhouse gas inventory reports emissions of 222 Mt CO_2-eq in 2023. If, in line with the "with additional measures" (WAM) scenario of the NECP, the effective carbon price on this basis were gradually increased to around €38/tCO_2 by 2030, annual domestic revenues would reach approximately €3.3 billion[12].

Over time, revenues could be further increased by expanding the carbon price to a broader share of CO_2 emissions and by introducing charges on non-CO_2 GHGs such as methane, nitrous oxide, and HFCs, in line with their global warming potentials. In sectors like upstream oil and gas and waste management, this would not only generate additional fiscal resources but also unlock low-cost abatement opportunities (Savytskyi & Diachuk, 2025).

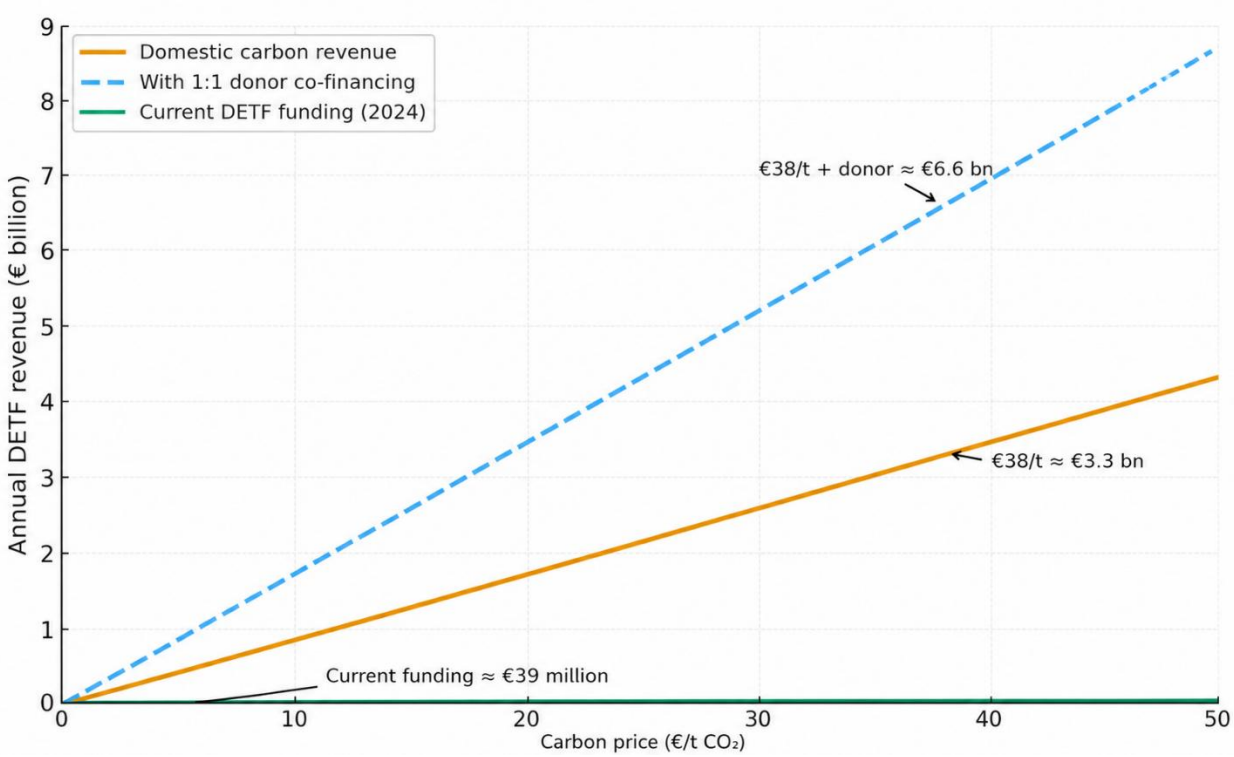
[12] Given that the share of covered GHG emissions stays at 39%.

As done already today in the JSC DETF, these revenues could be channelled into the co-governed Decarbonisation Fund. Once the emissions monitoring and trading system is operational and the emissions tax base has been revised, these revenues can then be channelled into sector-specific "pots" within the Fund to make the link between paid carbon price and visible reinvestment explicit. While industrial transformation should remain a core objective, part of the revenues could also support households in adapting to higher energy costs through targeted energy-efficiency investments and other measures that mitigate regressive distributional effects.

5.2 International Component

The ongoing negotiations around the EU's new Multiannual Financial Framework Regulation provide a political 'window of opportunity' to link rule-based co-financing for a domestically anchored instrument (as outlined in governance options 1 and 2 in chapter 4.2) for Ukraine's decarbonisation from the EU budget's financial reserves for multiple upcoming years. If the domestic carbon price revenues were matched 1:1 by European funding, at €38/tCO_2 a co-funded Fund could raise ~6.6 billion € in the year 2030[13].

Figure 5 Potential annual revenue trajectories



[13] All quantitative estimates should be understood as indicative orders of magnitude, subject to significant political, macroeconomic and implementation risks.

5.3 Complementary financial sources from international mechanisms can be explored

Arguably, additional financial sources from international mechanisms could be integrated into the described financing vehicle, for example, Ukraine's CBAM payments to the EU, or revenues from selling international carbon credits.

While politically and legally complex, channelling part of the EU's CBAM revenue into Ukraine's decarbonisation instrument would send a strong geopolitical signal and help offset the transitional costs of EU carbon border adjustments. The allocation of CBAM-related revenues to the Fund could serve as a temporary ETS replacement, but would require a political agreement at the EU level.

Another complex financing option not explored here is whether the mitigation incentivised by the fund that goes beyond Ukraine's nationally determined contributions could be monetised through international emission trading (Article 6 of the Paris Agreement).

Both options face complex trade-offs that cannot be explored here.

6 A Strategic Outlook

The absence of an effective national carbon pricing framework threatens Ukraine's EU accession and exposes carbon-intensive sectors to significant economic strain. Incentives for decarbonisation investments, alongside a gradual increase in the carbon price, are therefore critical.

This paper proposes a political bargain capable of encouraging a phased carbon price rise, while preparing Ukraine for participation in the EU ETS and deeper integration into the European Union. Its success hinges on dual commitment: Ukraine must implement the necessary carbon-pricing pathway and reforms for such a Fund, while the EU must be willing to tie some of its substantial financial transfers to Ukrainian carbon-pricing revenues. The purpose of such Fund must ultimately be self-liquidating: to enable Ukraine's successful integration into the EU ETS rather than to establish a permanent exceptional regime.

Whilst the EU discusses its new Multiannual Financial Framework, Ukraine faces increasing regulatory pressure due to the start of the paid phase of CBAM, but also the ambition to join the EU quickly. This should be seen as a window of opportunity for strategic cooperation between the European Union and Ukraine in the climate field, which could make Ukraine's decarbonisation fund a flagship institution.

References

Bhandary, R. (2021). National climate funds: a new dataset on national financing vehicles for climate change. *Climate Policy, 22*(3).

Carattini, S., Carvalho, M., & Fankhauser, S. (2018). Overcoming public resistance to carbon taxes. *Wiley Interdiscip Rev Clim Change*, *6*(5).

Cichocka, B., & Mitchell, I. (2022). *Climate Finance Effectiveness*. Center for Global Development. https://www.cgdev.org/sites/default/files/climate-finance-effectiveness-six-challenging-trends.pdf

Cox, G., Douglass, N., & Weingast, B. (2015). The Violence Trap: A Political-Economic Approach to the Problems of Development. *SSRN*.

Danish Energy Agency. (2025). *White Paper on the State Fund for Decarbonisation and Energy Efficient Transformation of Ukraine (DFU) and the incentive scheme for the Voluntary Agreement Scheme (VAS) for Energy Efficiency*. https://www.bing.com/ck/a?!&&p=926b2395bb69b6d27c1881f0319be5f5dc9606dbc813e0c5e4878fd3b61a82a7JmltdHM9MTc3MjQwOTYwMA&ptn=3&ver=2&hsh=4&fclid=2bcdf37d-bcf2-64f2-243b-e634bd4b6578&psq=white+pape+danish+energy+agency+decarbonisation+fund+ukraine&u=a1aHR0cHM6Ly9lbnMuZGsvbWVkaWEvNjUyNy9kb3dubG9hZA

Decarbonisation Fund Ukraine. (2024). СТАТУТ АКЦІОНЕРНОГО ТОВАРИСТВА «ФОНД ДЕКАРБОНІЗАЦІЇ УКРАЇНИ». https://res2.weblium.site/res/66baedc5c18ef546fa108bc6/678a716ac095799fc9300982

Decarbonisation Fund of Ukraine. (2026). *UNIDO передає АТ «Фонд декарбонізації України» 1,5 млн доларів США для підтримки промислової енергоефективності в Україні*. https://fdu.com.ua/news/unido-peredaye-at-fond-dekarbonizaciyi-ukrayini-15-mln-dolariv-ssha-dlya-pidtrimki-promislovoyi-energoefektivnosti-v-ukrayini

Delano. (2024). *How to finance energy efficiency and decarbonisation in Ukraine*. https://delano.lu/article/ukraine-energy-efficiency-and-

European Commission. (2025a). *European Commission and EIB Group sign €2 billion guarantee under Ukraine Facility to support country's reconstruction and resilience*. https://enlargement.ec.europa.eu/news/european-commission-and-eib-group-sign-eu2-billion-guarantee-under-ukraine-facility-support-countrys-2025-03-06_en?prefLang=hr&

European Commission. (2025b). *Statement by President von der Leyen on the next long-term EU budget*. https://ec.europa.eu/commission/presscorner/detail/en/statement_25_1851

European Commission. (2025c). *The 2028-2034 EU budget for a stronger Europe*. https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/eu-budget-2028-2034_en

European Council. (2026). *EU financial assistance to Ukraine*. https://www.consilium.europa.eu/en/policies/ukraine-solidarity-financial-support/

European Parliament. (2026). *Parliament approves €90 billion Ukraine support loan package*. https://www.europarl.europa.eu/news/en/press-room/20260206IPR33903/parliament-approves-EU90-billion-ukraine-support-loan-package

Kulkarni, S., & Dubey, R. A. (2024). *The Climate Cost of Climate Investment: A Two-Period Perspective* (Version 1). arXiv. https://doi.org/10.48550/ARXIV.2408.14359

Mohammadzadeh Valencia, F., Mohren, C., Ramakrishnan, A., Merchert, M., Minx, J. C., & Steckel, J. C. (2024). Public support for carbon pricing policies and revenue recycling options: A systematic review and meta-analysis of the survey literature. *Npj Climate Action*, *3*(1), 74. https://doi.org/10.1038/s44168-024-00153-x

Lackner, T., Fierro, L., & Mellacher, P. (2024). *Opinion Dynamics meet Agent-based Climate Economics: An Integrated Analysis of Carbon Taxation* (LEM Working Paper Series). https://www.lem.sssup.it/WPLem/files/2024-11.pdf

Pearce, D. (1991). The Role of Carbon Taxes in Adjusting to Global Warming. *The Economic Journal*, *101*(407).

Pobel, O. (2024). *The Decarbonization Fund has not yet started working: it receives money but cannot use it*. EcoPolitic. https://ecopolitic.com.ua/en/news/the-decarbonization-fund-has-not-yet-started-working-it-receives-money-but-cannot-use-it/.

SAEE. (2025a). АКЦІОНЕРНЕ ТОВАРИСТВО ФОНД ДЕКАРБОНІЗАЦІЇ УКРАЇНИ. https://saee.gov.ua/at-fond-dekarbonizatsii-ukrainy?utm

SAEE (2025b). ReBuild Ukraine 2025: The State Agency on Energy Efficiency Strengthens International Cooperation. https://saee.gov.ua/en/news/rebuild-ukraine-2025-the-state-agency-on-energy-efficiency-strengthens-international-cooperation#:~:text=During%20the%20event%2C%20Hanna%20Zamazeeva,at%20deploying%20renewable%20energy%20sources.

Savytskyi, O., & Diachuk, O. (2025). Experience of Norway and the European Union in developing regulatory and fiscal mechanisms to reduce methane emissions in the oil and gas industry. *Scientific bulletin of International Association of scientists. Series: Economy, management, security, technologies*, *4*(3). https://doi.org/10.56197/2786-5827/2025-4-3-5

Silvi, M., & Padilla, E. (2023). *A tragedy of the horizons? An intertemporal perspective on public support for carbon taxes*. Energy Economics, 125, 106815.

Swedlund, H. J., & Lierl, M. (2020). The rise and fall of budget support: Ownership, bargaining and donor commitment problems in foreign aid. *Development Policy Review*, *38*(S1). https://doi.org/10.1111/dpr.12463

Ukrainian Government. (2023). *Oleksandr Kubrakov: State Fund for Decarbonisation and Energy Efficient Transformation will start operating in January 2024*. https://www.kmu.gov.ua/en/news/oleksandr-kubrakov-z-sichnia-2024-roku-zapratsiuie-derzhavnyi-fond-dekarbonizatsii-ta-enerhoefektyvnoi-transformatsii?

UN (2025). *Sevilla commitment.* https://docs.un.org/en/A/RES/79/323

UNDP (2015). *Blending Climate Finance Through National Climate Funds. A Guidebook for the Design and Establishment of National Funds to Achieve Climate Change Priorities.* https://www.undp.org/sites/g/files/zskgke326/files/publications/Blending_Climate_Finance_Through_National_Climate_Funds.pdf

UNFCC. (2025). *First Biennial Transparency Report of Ukraine under the Paris Agreement.* https://unfccc.int/sites/default/files/resource/First%20BTR%20Ukraine.pdf

UNFCC. (2026). *Introduction to Climate Finance*. https://unfccc.int/topics/introduction-to-climate-finance?

Van der Ploeg, F. (2023). Fiscal Costs of Climate Policies: Role of Tax, Political, and Behavioural Distortions. *De Economist*, *171*.

Верховна Рада України. (2023). Про акціонерні товариства. https://zakon.rada.gov.ua/laws/show/2465-IX#Text