



Low Carbon Ukraine

Policy advice on low-carbon policies for Ukraine

Overview of carbon taxes in Europe

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Options for point of regulation

- **Upstream Carbon Taxation**

- Imposed at initial point of production, e. g. fossil fuel sale
- costs are passed indirectly to consumers
- Facilitated implementation due to existing taxation structures, e. g. VAT, excise tax
- Easy calculation of CO₂ emissions per unit due to fixed CO₂ content per fuel type
- Impeding tax evasion due to fixed CO₂ content per fuel type
- Incentivises decrease of energy losses and increase of efficiency due to taxation at first step

- **Downstream Carbon Taxation**

- Imposed at final consumption
- Requires complex Monitoring-Reporting-Verification (MRV) systems to trace back carbon content in production process → challenging for many small emitters
- More prone for manipulation
- Advantage: higher visibility of carbon content for final consumers

Selected country fact sheets

Ukraine

Implemented in	2011	
Share of emissions covered	32%	
Price USD/tCO ₂ e (April 2024)	0.77	
Revenue USD m (June 2023)	86	
Gas covered	CO ₂	
Fuel covered	Coal, Diesel, Gasoline, Kerosene, Other oil products, LPG, Natural gas	
Sectors	Electricity and heat	Industry
	Mining and extractives	
		Buildings
	Waste (in principle)	LULUCF (in principle)
Coverage	<p>Ukraine's carbon tax is applicable to CO₂ emissions from stationary sources, primarily targeting the industrial, power, and building sectors across all fuel types. The tax applies only to entities emitting 500 tCO₂ or more annually with the emission level being based on self-reporting which enables tax avoidance. Facilities or users emitting less than this threshold, or those not registered as taxpayers during the period their emissions exceeded 500 tCO₂ per year, are exempt from the tax.</p>	
Point of regulation and compliance	<p>The regulation applies at the point of source, with the users of the specified fossil fuels being responsible for paying the tax. Carbon tax payments are made on a quarterly basis.</p>	

Challenges in Ukrainian carbon tax

- Currently the Ukrainian carbon tax has a very low tax level (USD 0.77)
- It only focuses on large facilities
- Carbon emission levels are largely determined through self-reporting which allows widespread manipulation
- The point of regulation is downstream at the final point of consumption. To minimise manipulation an extensive Monitoring, Reporting and Verification (MRV) system needs to be reintroduced which can overburden small facilities
- Ukraine pledged to introduce a Ukrainian Emission Trading System (ETS) that mirrors the EU ETS but currently lacks an implementation plan for EU ETS 2 which covers Buildings and Transport
 - Covering buildings and transport is fundamental to prevent a distortionary effect of carbon pricing on electricity and district heat. This could backfire by giving fossil fuels in transport and heating a cost advantage.
- Current carbon tax and EU ETS overlap in some cases (double burden) but leave other sectors completely unaccounted – need for coordination

Denmark

Implemented in	1992	
Share of emissions covered	48%	
Price USD/tCO ₂ e (April 2024)	28.21	
Revenue USD m (June 2023)	479	
Gas covered	All	
Fuel covered	Coal, Diesel, Gasoline, Kerosene, Jet fuel, Other oil products, LPG, Natural gas, Waste as fuel	
Sectors	Electricity and heat	Industry
	Mining and extractives	Transport
	Aviation (in principle)	Buildings
	Agriculture, forestry and fishing fuel use	
Coverage	Denmark's carbon tax covers Scope 1 emissions from fossil fuels in most sectors, excluding electricity and EU ETS-regulated industries, except central heating. It mainly targets buildings, non-ETS industries, non-ETS electricity, and transport. Certain energy-intensive industries can claim flat-rate reimbursements, and companies reducing unburned methane emissions are also eligible for refunds.	
Point of regulation and compliance	For upstream taxation, distributors and importers of the covered fossil fuels are typically responsible for paying the tax. However, if the fuel is supplied to a company registered under the relevant fuel tax laws (e.g., companies registered for coal consumption), the responsibility can be transferred to that company. In such cases, the regulation shifts to the point of source . Monthly reporting and payments.	

Denmark (livestock emission tax)

Implemented in	2030
Price USD/tCO ₂ e (2030)	43 (2030), rising to 108 in 2035
Gas covered	Methane emissions from livestock burps, flatulence, and manure
Coverage	The Danish tax on livestock methane emissions targets greenhouse gases produced by cattle, sheep, and other ruminant animals as part of Denmark's efforts to reduce agricultural emissions.
Point of regulation and compliance	Danish tax on livestock methane emissions is placed at the farm level, where individual farmers are responsible for paying levies based on their livestock's estimated emissions. It is expected that compliance will be enforced through mandatory reporting systems, periodic audits, and penalties for underreporting or non-compliance to ensure accurate implementation of the tax. However, no specific information on reporting mechanisms and compliance enforcement are public yet.
Revenue recycling mechanisms	The livestock methane tax includes a compensation mechanism to support farmers. A portion of the tax revenues will be recycled back to farmers through automatic rebates, with additional incentives for adopting sustainable practices, ensuring financial relief while promoting emissions reductions.

Estonia

Implemented in	2000	
Share of emissions covered	10%	
Price USD/tCO ₂ e (April 2024)	2.15	
Revenue USD m (June 2023)	2	
Gas covered	CO ₂	
Fuel covered	Coal, Diesel, Gasoline, Kerosene, Other oil products, LPG, Natural gas, Non-fuel emissions	
Sectors	Electricity and heat	Industry
Coverage	Estonia's carbon tax targets direct (scope 1) CO ₂ emissions resulting from the combustion of fossil fuels for generating thermal energy within the industrial and power sectors. However, it exempts fuel use in industrial facilities (excluding thermal energy generators) that fall under the EU ETS regulations.	
Point of regulation and compliance	The tax is applied at the point of use , with liability resting on entities utilizing the specified fossil fuels, including thermal generators and industrial facilities producing heat. However, thermal generators regulated under the EU ETS are exempt from this tax. Payments are made quarterly.	

Finland

Implemented in	1990	
Share of emissions covered	45%	
Price USD/tCO ₂ e (April 2024)	99.99	
Revenue USD m (June 2023)	1419	
Gas covered	CO ₂	
Fuel covered	Coal, Diesel, Gasoline, Kerosene, Other oil products, LPG, Natural gas	
Sectors		Industry
	Mining and extractives	Transport
		Buildings
	Agriculture, forestry and fishing fuel use	
Coverage	Finland's carbon tax applies to both direct and indirect CO ₂ emissions from energy products used as motor fuels or for heating, covering all fossil fuels except peat. Fuels used for electricity generation and industrial raw materials are exempt. Peat is taxed separately under a special structure that differs from the general energy tax framework.	
Point of regulation and compliance	Upstream taxation applies to distributors and importers of covered fossil fuels, who are responsible for paying the tax. The energy tax, which includes the carbon tax component, must be paid monthly.	

Hungary

Implemented in	2023	
Share of emissions covered	32.3%	
Price USD/tCO ₂ e (April 2024)	38.7	
Revenue USD m (June 2023)	106	
Gas covered	CO ₂	
Fuel covered	Not fuel specific	
Sectors	Electricity and heat	
	Aviation	
Coverage	<p>The carbon tax is applicable to installations emitting more than 25,000 tons of CO₂ equivalent annually and receiving at least 50% of their allowances for free. Additionally, a 15% transaction fee is imposed if these installations transfer their allowances to another account. The tax focuses on scope 1 emissions from Hungarian participants in the EU ETS. Taxpayers may reduce their tax base by 50% if specific conditions are met.</p>	
Point of regulation and compliance	<p>The obligation to pay the tax lies at the point of source with the consumers of the specified fossil fuels. Payments are made on a quarterly basis.</p>	

Slovenia

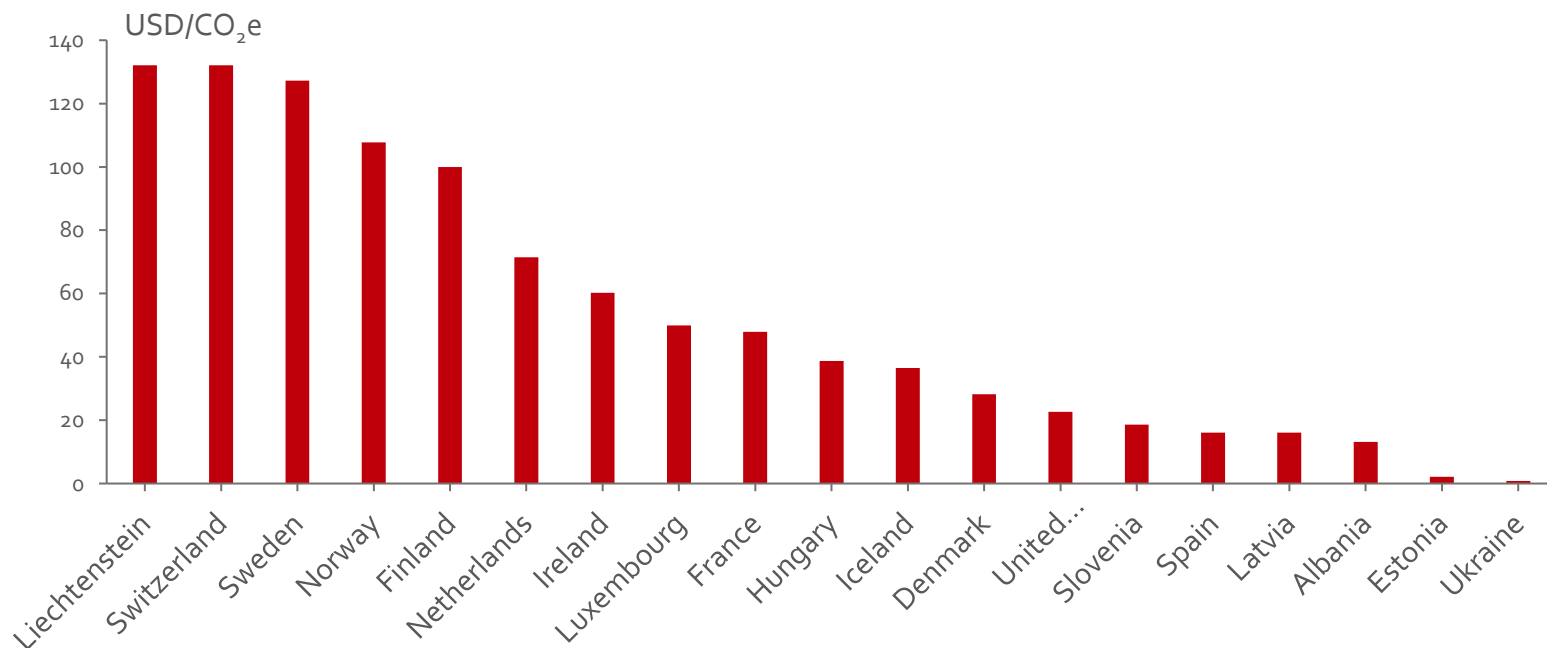
Implemented in	1996
Share of emissions covered	45.7%
Price USD/tCO ₂ e (April 2024)	18.6
Revenue USD m (June 2023)	91
Gas covered	CO ₂
Fuel covered	Coal, Diesel, Gasoline, Kerosene, Other oil products, LPG, Natural gas
Sectors	
	Transport
	Buildings
Coverage	<p>The carbon tax is added to domestic excise duties on energy, raising their rate and final fuel prices for users. It applies to Scope 1 emissions from road transport, heating, private jets, and private boats (excluding fishing vessels). However, it does not cover emissions from fuels used in the production of non-metallic mineral products, power generation, or dual-use fuels. Exemptions are granted for installations emitting less than 25,000 tons of CO₂ equivalent annually (based on the 2008–2010 average) and with a nominal thermal power below 35 MW. The carbon tax complements the EU ETS, with both policies covering distinct but complementary scopes.</p>
Point of regulation and compliance	<p>The obligation to pay the tax lies upstream with distributors and importers of the specified fossil fuels. Payments are made on a monthly basis.</p>

Switzerland

Implemented in	2008	
Share of emissions covered	35%	
Price USD/tCO ₂ e (April 2024)	132.12	
Revenue USD m (June 2023)	1166	
Gas covered	CO ₂	
Fuel covered	Coal, Kerosene, Other oil products, LPG, Natural gas	
Sectors	Electricity and heat (in principle)	Industry (in principle)
	Mining and extractives (in principle)	
		Buildings
	Agriculture, forestry and fishing fuel use (in principle)	
Coverage	<p>The CO₂ tax is levied on emissions produced by burning fossil thermal fuels to generate heat, light, or electricity. Operators included in the Switzerland ETS are not subject to this tax. Emissions-intensive operators not part of the ETS may qualify for a tax reimbursement if they commit to achieving specific emission reduction goals.</p>	
Point of regulation and compliance	<p>The CO₂ tax is applied upstream, with distributors and importers of fossil fuels being responsible for its payment. The tax is assessed either at the point of importation or when the fuel leaves a tax-exempt warehouse for circulation. Offsets cannot be used to lower the tax liability directly. However, companies that commit to reducing or managing greenhouse gas emissions instead of paying the tax may utilize offsets, including Swiss ETS allowances or EU ETS allowances, to meet up to 4.5% of their obligations.</p>	

Summary carbon taxes in Europe (1/2)

- **21** national carbon tax schemes ranging from USD 0.77 (Ukraine) to USD 132.12 (Switzerland and Liechtenstein) are **implemented** in Europe
- Average tax level is USD 54



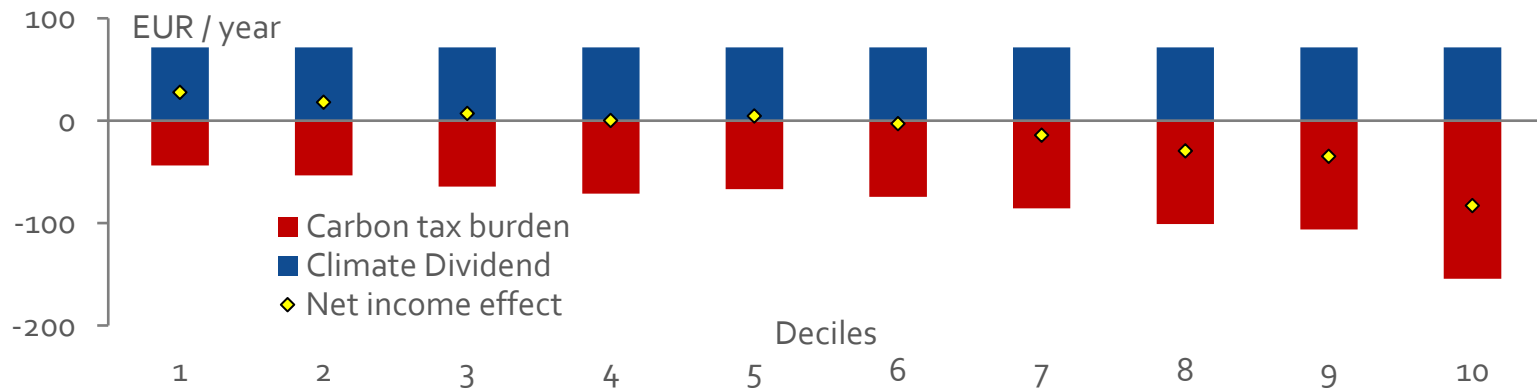
Summary carbon taxes in Europe (2/2)

- **13** carbon tax schemes are regulated **exclusively upstream** which decreases the administrative burden, impedes tax evasion, incentivises efficiency, and facilitates the inclusion of the transport and buildings sector
- Large majority of **upstream taxes include buildings and transport sector, 11 and 10 respectively** → fundamental to incentivise the electrification of transport and heat
- The three most covered sectors in Europe are industry, buildings and transport
- In case sectors are covered by both EU ETS and a national carbon tax, the tax payers are in most cases **exempt from paying the carbon tax**. Other options are a **reduction in payment obligations** or the **refund of paid carbon taxes**

Social compensation scheme

Climate Dividends

- **Problem:** Carbon taxes disproportionately burden low-income households, as a higher share of their income goes toward taxed goods compared to high-income households, leading to regressive taxation effects
- **Solution:** Lump-sum payments to all consumers → **Climate dividend**



Distributional impact of climate dividend (2030 UA modelling exercise using a 90 EUR/tCO₂ tax)

Source: Stubbe, R. (2024). Pathways for reforming Ukraine's carbon tax. Towards an ETS-compatible upstream tax with an expanded scope. [Link](#)

- **Simulated climate dividend:** 100% of revenues levied from residential consumers returned to households via household-size adjusted cash transfers
 - **Can turn a regressive into a progressive policy:** Net-positive income effects for lower half of income distribution
- Climate dividend allows higher tax rate

Climate dividends in Switzerland

- **Around two-thirds** of revenues are redistributed back to the population and the economy according to the carbon tax levy burden
 - Revenue recycling **to the population** is paid out uniformly via the health insurance premium to all residents (CHF 64.2 in 2024 per person). The insurance is compulsory for all residents and has the latest data ¹
 - Revenue recycling **to the economy** is conducted proportional to the employers Old-age and survivors insurance (OASI) wage bill. The used distribution factor is 0.0707 ‰ meaning for each CHF 100,000 of settled payroll CHF 70.7 the employer receives back ²
- **One-third** of carbon tax revenues are used for energy efficiency measures and renewable energies (CHF 450 m max.) ¹
- **CHF 25 m max.** are used for the Swiss Technology Fund to promote technologies which reduce the consumption of resources and GHG emissions and support an increase in energy efficiency and usage of renewable energies ¹

¹ <https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/reduction-measures/co2-levy/redistribution.html>

² https://www.bafu.admin.ch/dam/bafu/de/dokumente/klima/fachinfo-daten/rueckverteilung-der-co2-abgabe-2024-an-die-wirtschaft.pdf.download.pdf/Faktenblatt_R%C3%BCckverteilung_2024_an_Wirtschaft_DE.pdf

Reforming the Ukrainian carbon tax

Pathways for reforming Ukraine's carbon tax (*Recent study*)

- **Challenge in Ukraine:** solving carbon tax related obstacles and fully aligning with EU climate legislation and policy instruments
- **Solution: reformed upstream carbon tax that complements the EU ETS**
 - Upstream approach simplifies related administrative tasks and reduces the risk of manipulation
 - Reformed carbon tax could cover **smaller** energy and industrial installations, as well as emissions from **buildings, road transport and additional sectors**
 - Could be **aligned with the scope of the EU ETS 2** and gradually approach expected EU ETS 2 prices, **facilitating Ukraine's EU accession process**
- Evaluated tax levels in study: **10 EUR/CO₂e** for 2025; three price scenarios for 2030: **30 EUR/CO₂e, 60 EUR/CO₂e, 90 EUR/CO₂e**
 - Can stimulate **emissions reductions of up to 10%** by 2030 in the buildings and transport sectors (vs. a scenario without a carbon tax)
 - Revenue projection: **EUR 1.2-4.2 billion annually** by 2030
 - Revenue can be channelled into a **climate dividend mechanism** and **climate change mitigation measures**, e. g. energy efficiency
- Carbon tax reform in Ukraine should be **complemented by social support scheme**, e. g. climate dividends, to mitigate regressive character of carbon tax and allow for a higher tax level

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