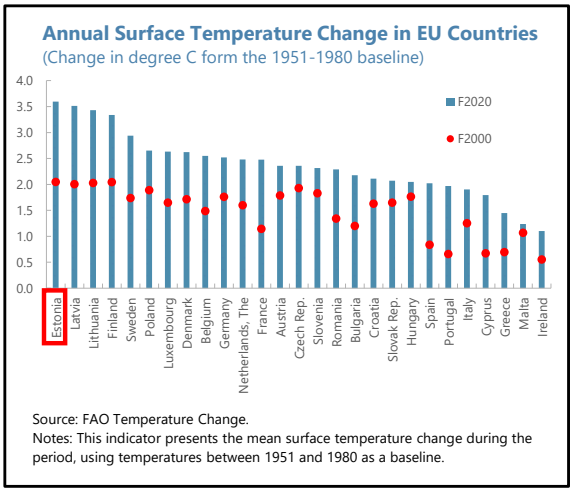
CLIMATE POLICY IN ESTONIA: ACCELERATING MITIGATION IN THE TRANSPORT AND BUILDING SECTORS[1]

The war in Ukraine has reinforced the need to accelerate the green transition and reduce dependence on fossil fuels in the EU. While Estonia has substantially advanced toward achieving its Green Deal's commitments, the progress which has been mostly driven by the restructuring of the oil shale industry, could temporarily be jeopardized by energy security constraints. At the same time, progress with GHG reductions in the transport and building sectors has remained modest. The review of Estonia's comprehensive climate policies reveals room to further incentivize efficiency and promote greener energy sources and sustainability in the transport and building sectors. The analysis shows that the adoption a carbon tax in sectors not covered by the EU-ETS system, supported by appropriate sectoral policies, would help incentivize a greater efficiency in the building and transport sectors and reduce GHG emissions, while generating a net positive welfare effect and a more inclusive growth.

A. Introduction

1. Climate change is expected to have a sizable impact in Estonia. The Estonian Environmental Agency (EEA, 2017) documents significant climate-related changes with severe impacts in Estonia. As a result of climate change, the temperature rise in Estonia has been faster than the global average and was accompanied by a steady decline in winter ice and snow coverage. Similarly, heat, drought, and seasonal flooding have become more frequent, with devastating impacts on agriculture and other economic sectors. Furthermore, the rising Baltic Sea level, among the highest in recent years, threatens Estonia's coastal buildings, while stronger storms is a risk to the electricity network and buildings. To limit these impacts Estonia has adopted a comprehensive climate strategy aiming at limiting climate changes through mitigation, adaption, and transition efforts.



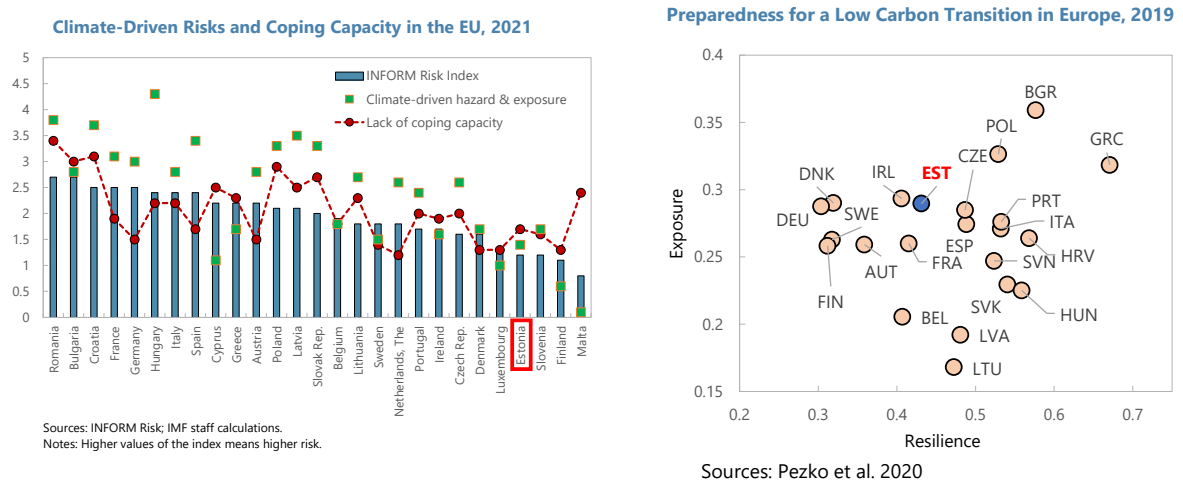
Source: FAO Temperature Change.
Notes: This indicator presents the mean surface temperature change during the period, using temperatures between 1951 and 1980 as a baseline.

2. This analysis focuses on Estonia's key mitigation policies in the building and transport sectors. Estonia's adaptation policies, and institutional capacity almost matches climate related risks as measured by the Inform Risk index. Transition policies play a predominant role in the

[1] Prepared by Neree Noumon (EUR). The analysis benefitted from discussions with the authorities and comments received on the presentation that took place during the 2022 AIV. Karlygash Zhunussova (FAD) provided helpful comments and supported with the implementation of the CPAT tool.

restructuring of the oil-shale industry and are supported by the EU Just transition Fund. However, progress with mitigation policies in the building and transport sectors has stalled since the mid-90s. The review of Estonia's climate policy in the transport and building sectors highlights room to further promote energy efficiency and sustainability.

Figure 1. Climate Risks and Preparedness for Transition



3. The paper also explores the costs and benefits of implementing a national-level carbon tax in non-ETS sectors to complement existing policies. The EU Emissions Trading System (ETS) has helped mitigate GHG emissions in Estonia but does not cover the building and transport sectors where progress has been limited.[2] The paper explores the gains that can be achieved by introducing a carbon taxation in non-ETS sectors, using the WB-IMF carbon pricing assessment tool (CPAT) framework.[3] The analysis found that introducing a carbon taxation in non-ETS sectors could reduce (by up to 18 percent) the efforts needed achieve Estonia's NDC in 2030. A carbon tax will also have a positive net welfare effect over time, with climate, transport and air pollution co-benefits outweighing the efficiency costs from introducing a new tax. Furthermore, the revenue from carbon tax, when recycled, in terms of targeted transfers and investments, is expected to promote higher and more inclusive growth than otherwise. This work contributes to policy debate in Estonia by illustrating the costs and benefits of carbon taxation.

B. Estonia's Climate Policy and Greenhouse Gas Emissions

4. The war in Ukraine and the new EU-level policies call for a faster convergence to green policies. The war in Ukraine has strengthened Europe's commitment to ensuring energy security

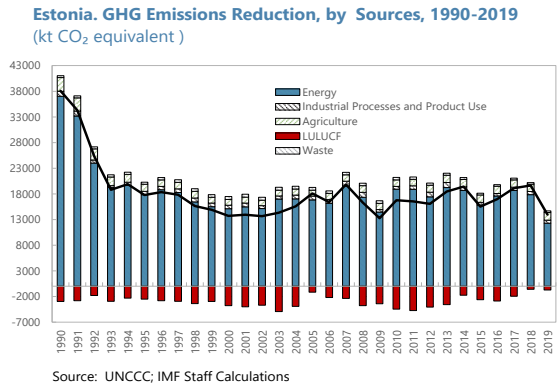
[2] European Union member states (plus Iceland, Liechtenstein, and Norway) are part of the EU Emissions Trading System (EU ETS), a market created to trade a capped number of greenhouse gas emission allowances.

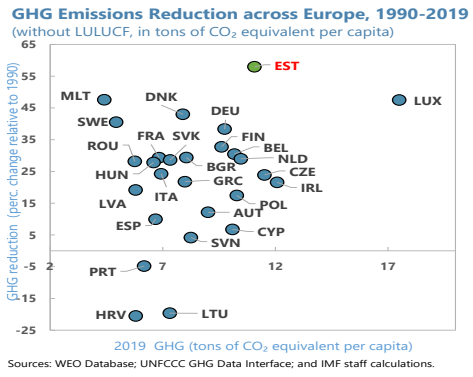
[3] The CPAT uses a granular modelling of sectors and fossil fuels to assesses impact of carbon pricing schemes on energy-related emissions.

and sustainability and accelerating the global transition to renewable sources of energy. The European Commission's "Fit for 55" proposed package (July 2021) seeks to accelerate convergence to the EU Green Deal's carbon neutrality objective by mid-century and achieve the net GHG reduction by at least 55 percent by 2030, compared to 1990 levels. The proposed Fit for 55 package extends the emissions trading to new sectors, while tightening the existing EU Emissions Trading System, thereby recognizing the existing gaps in the pricing of carbon emissions.[4] The REPowerEU Plan proposes to further accelerate the roll-out of renewable energy, greater energy saving and efficiency, and the diversification of energy supplies.

5. Estonia has made significant progress in reducing its GHG emissions, but progress has stalled since the mid-1990s. Estonia's National Determined Contributions (NDC) aim to reduce greenhouse gases by 70 percent by 2030 compared to 1990 levels and achieve climate neutrality by 2050. As of 2020, Estonia GHG emissions reduction was among the highest in the EU, at 72 percent relative to 1990's levels (EC 2022), though also reflecting low transport activity during the pandemic.[5] In parallel, the country's carbon footprint per capita remains among the largest in Europe. Most progress in reducing GHG emissions, came from the oil-shale sector restructuring, with the largest gains achieved in the early mid-90s. The energy sector's emissions have also steadily decreased from 2018, supported by the green transition policies and rising CO2 prices which affected the oil shale sector's competitiveness. As of end-2020, the bulk of Estonia's emissions remained concentrated in the energy sector (59 percent), followed by the transport sector (17 percent), and the agriculture sector (12 percent). The Just Transition Fund is expected to further accelerate, the transition away from fossil fuels.[6]

Figure 2. Greenhouse Gas Emissions, 1990–2019





[4] The Commission also proposed aligning national taxation policies with the European Green Deal objectives, measures to prevent carbon leakage, and tools to preserve and grow natural carbon sinks.

[5] The land use, land use change and forestry (LULUCF) sector, traditionally a net greenhouse gas sink, became a net emitter in 2020 (about 10 percent of net emissions). This trend, yet to be confirmed, was caused by ageing forests.

[6] The oil shale sector in Estonia is highly concentrated in the eastern-most region of Ida-Virumaa. As of 2019, oil shale related companies located in the region account for over 50 percent of Estonia's total GHG emissions.

C. Challenges to GHG Emissions Reduction in the Transport and Building Sectors

Transport Sector

6. GHG emissions in the transport sector have steadily increased since the early 1990s driven by road transport. Transport GHG emissions have steadily increased over the last 30 years and reached the double of their 1992 level, as of 2019 (2,395 tons of CO2e), while the EU's GHG transport emissions increased by 16 percent over the same period. The transport sector's GHG emissions represented about 17 percent of net emissions in 2020, mostly originating from road transportation, which was about 7 percent lower than in 2019 owing to the global pandemic. Transport emissions represented 28 percent of all domestically consumed energy as of 2019. In 2020, road transport, about 98 percent of total transport emissions, was the main driver of rising emissions, of which about three quarters was emitted from cars and one quarter from buses and trucks.[7] The increase in the number of vehicles—mostly passenger cars—and kilometers driven over time, reflect rising living standards and income growth in recent years.[8]

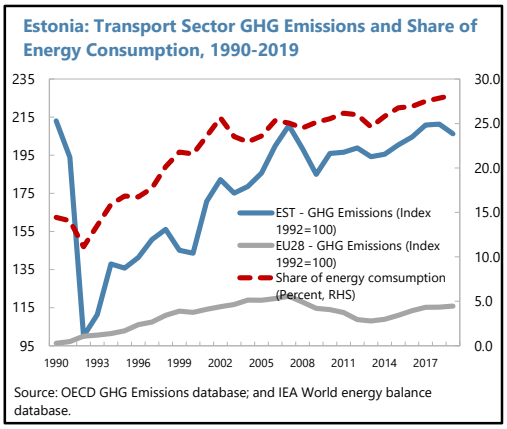
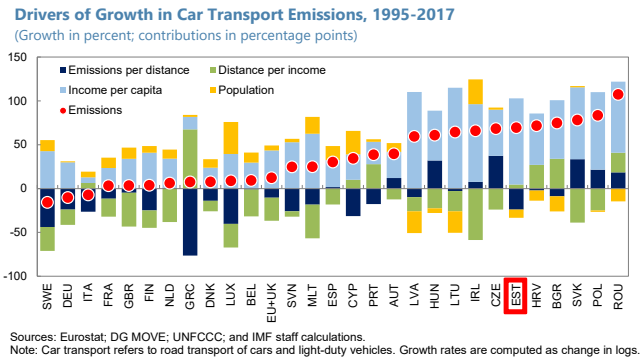
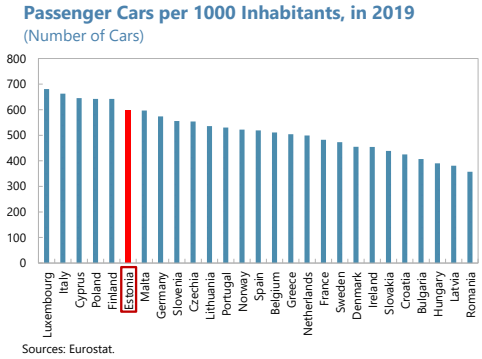


Figure 3. Transport GHG Emissions and Number of Passenger Cars

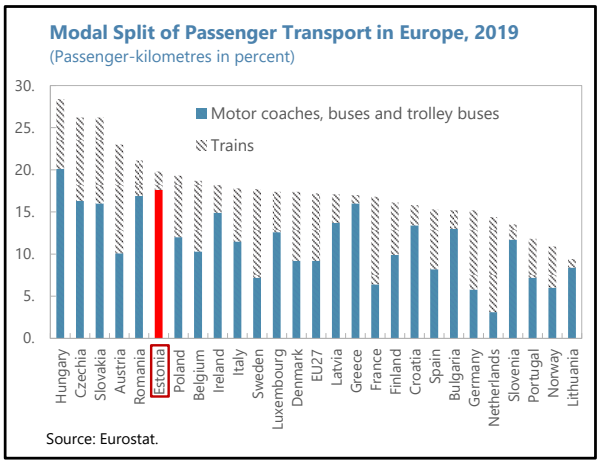




[7] GHG emissions from railways, domestic navigation, and domestic aviation represented about 1 percent, 1 percent, and 0.2 percent of 2020 transportation emissions, respectively.

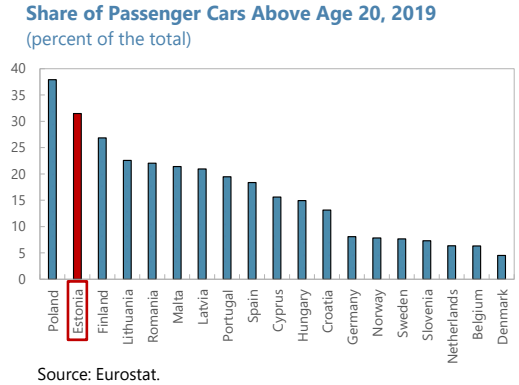
[8] The prevalence of cars in the population in 2018 was similar to that of Germany and Australia, countries with higher living standards than Estonia.

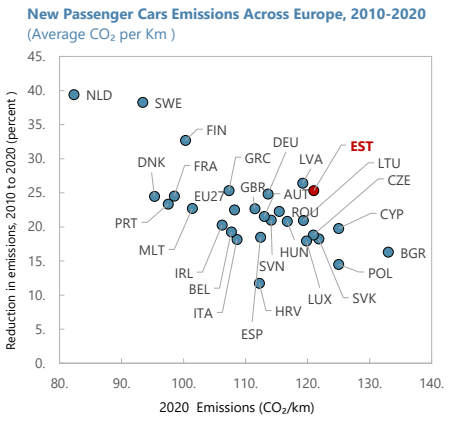
7. Rail transport emissions have fallen over time, partly compensated by growing use of passenger traffic on trains and public transport. Rail transport emissions declined between 2008 and 2018, as freight transport by rail more than halved in volume, though partly offset by road freight which has a higher carbon intensity (UNECE, 2020).[9] Conversely, passenger traffic on trains, a relatively small share of Estonia's public transport, increased by about 60 percent over 2010-2019. Similarly, bus passenger traffic, the bulk Estonia's public transport system, has expanded by a quarter between 2008 and 2019 primarily reflecting international travel as domestic bus traffic remained broadly stable.



8. Progress with reducing emissions in the transport sector is constrained by inefficiencies from Estonia's relatively old car fleet. The fuel efficiency of Estonia's passenger car stock is lower than in most European countries. In addition, the rise in the number of cars and miles travelled have contributed to the continued increase in transport emissions. Although the emissions of new passenger cars have declined by about 25 percent from 2010 to 2020, the emission efficiency of new passenger cars in CO2/km has been below the EU average (Figure 4). Estonia's relative less fuel-efficient stock of vehicles, a third of which is 20-year-old or older, is the second-oldest stock of vehicles in the EU (EC 2022).

Figure 4. Passenger Cars Age and Emissions





[9] UNECE's 2020 Transport Statistics Infocards

Building Sector

9. The building sector accounts for a significant share of total energy demand. In 2019, buildings contributed to 32 percent of total final consumption of energy and represented around 4 percent of total GHG emissions from the use of energy. GHG emissions from buildings has been broadly stable since the early 1990s, reflecting limited progress, compared to other EU countries. Building GHG emissions mostly came from heat and electricity consumption, with electricity accounting for 20 percent energy consumption. Residential buildings—which represent three quarters of the total building floor area (EC, 2021)—account for most of the energy demand and GHG emissions of the building sector. As of 2018, space heating accounted for the largest share (59 percent) of the building sector's energy consumption. Between 2000 and 2019, energy consumption in residential buildings increased by about 2.7 percent, partly due the increase in the number dwellings (ODYSSEE, 2021).[10]

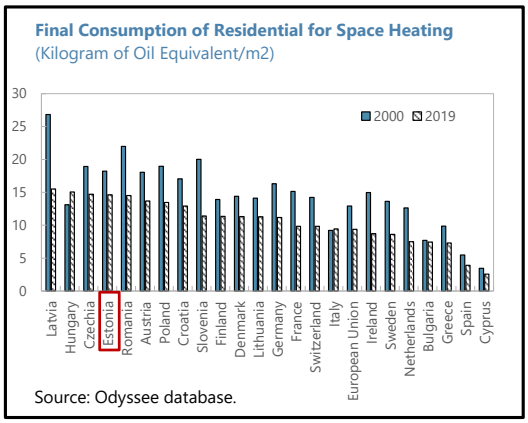
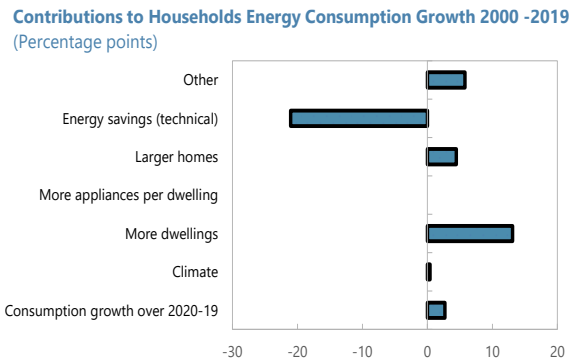
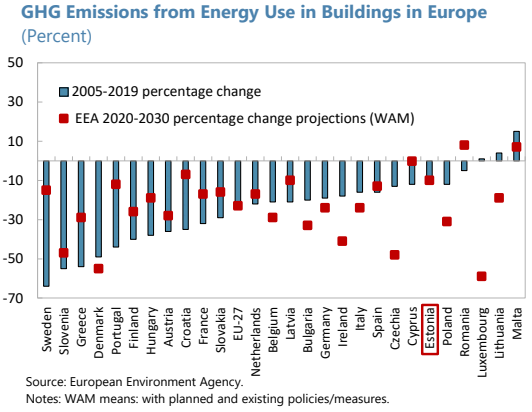


Figure 5. GHG Emissions in the Building Sector





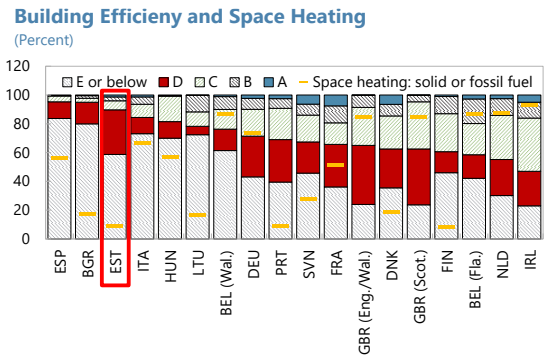
10. GHG emissions reduction in the building sector has been modest, despite a comparatively moderate reliance on carbon-emitting fuels. Although there has been some improvements, Estonia's building stock efficiency is among the lowest in Europe, with close to 90 percent of residences falling into the bottom "D" and "E" categories of the energy-performance standards.[11] GHG emissions in the building sector, is driven by space heating (71.4 percent of

[10] ODYSSEE Estonia country profile, 2021.

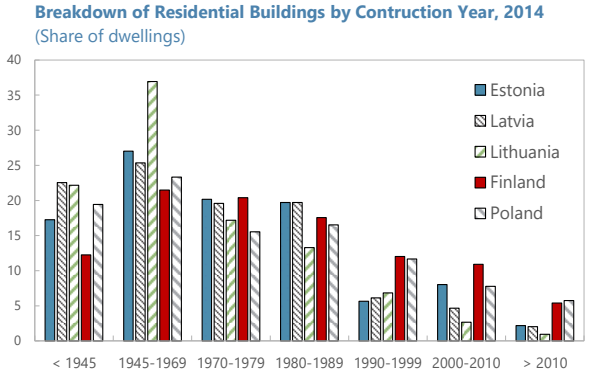
[11] EU Member States classify buildings' efficiency from A (most efficient) to G (least), in line with the EU's Energy Performance of Buildings Directive and Energy Efficiency Directive.

households' energy consumption), 50 percent of which is generated by renewables and wastes, which partially mitigate the environmental costs of inefficiencies. Heating demand and Estonia's energy use for residential space heating in 2019 is comparatively higher than in other EU countries, partly reflecting a colder climate. However, space heating energy consumption was also higher than in Nordic countries, which suggests a relatively lower energy efficiency in Estonia. Buildings' energy inefficiency is mostly attributable to Estonia's old residential buildings stock, with about 90 percent of buildings constructed before 1990 (as of 2014).

Figure 6. Building Energy Efficiency and Building Construction Year



Sources: Building Performance Institute Europe, Central Statistics Office Ireland, European Environment Agency, Eurostat, EU Building Stock Observatory and IMF staff calculations.



Source: European Commission EU Buildings Factsheets.

D. Climate Policies in the Transport and Building Sectors

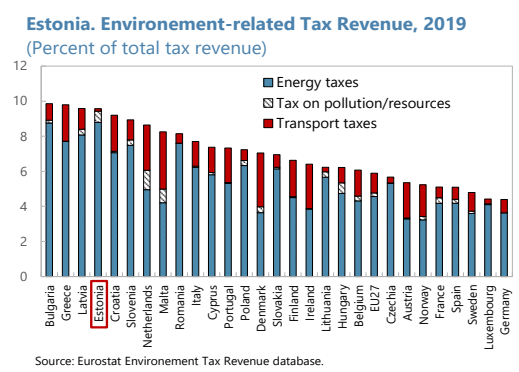
Key Policies in the Transport Sector

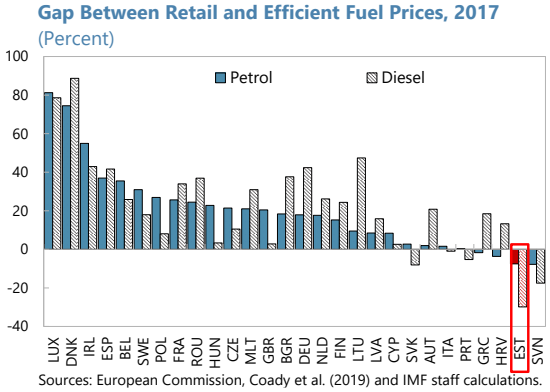
11. Estonia's policies to reduce transport sector emissions are underpinned by the National Development Plan for the Energy Sector 2030 and the Transport and Mobility 2021–2035 plan. Policies in the National Development Plan for the Energy Sector 2030 include (i) car taxation to encourage adoption of more efficient cars, including electric vehicles (EV); and (ii) investments to expand public transport networks and encourage a greater modal shift to public transport (MEAC, 2017a). The IEA estimates that the implementation of Estonia's energy strategy, could reduce transport energy consumption by up to 40 percent (IEA, 2019). Estonia's Transport and Mobility 2021–2035 Masterplan aims to further boost the sustainability of public transport and investments in charging stations for EVs. Estonia's ambition is to reduce transport emissions by 30 percent by 2030 compared to 2005, while not exceeding total vehicle fuel consumption levels recorded in 2012.

12. Estonia's environment-related taxation has room to further incentivize efficiency. Although Estonia's environment-related taxation revenue stood above the EU average, at 8.8 percent of total tax revenue in 2019, it is limited by its narrow base mostly consisting of a relatively high excise tax on road fuels (Figure 7). Although levies do not explicitly target externalities, the price of retail fuel in Estonia was above efficient levels in 2017. This may suggest

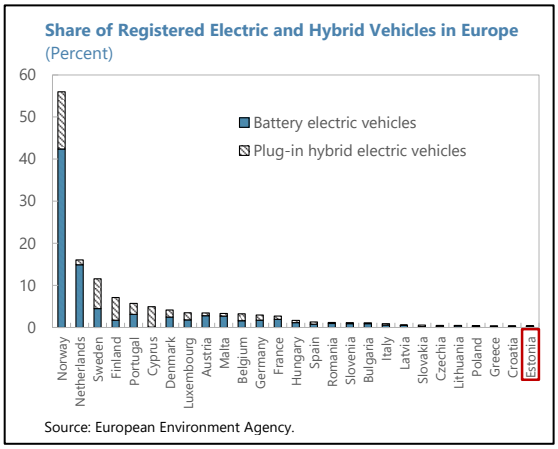
that negative externalities (e.g., accidents, congestions, and climate-related costs) were mostly accounted for (Coady et al. 2019). At the same time, fuel duties on petrol and levies on diesel have been relatively stable in real terms over 2011–2018. Furthermore, as opposed to many EU countries, Estonia currently does not have a carbon-based tax on transport fuels and there is no vehicle registration tax.[12]

Figure 7. Environment-Related Tax, Retail, and Efficient Fuel Prices





13. Electric vehicle (EV) adoption could be further incentivized through subsidies and investments in charging infrastructure. Estonia's share of registered electric and hybrid vehicles is among the lowest in the EU. This suggests current programs to subsidize electric vehicle, could be expanded (in duration and coverage) to further encourage EV sales and speed up adoption (Broughel and Viiding, 2021). Public sector policies should also accelerate investments to upgrade electric charging infrastructure. EV adoption would also benefit from additional investments in fast-charging stations with a focus on improving access to charging in residential areas.[13] Adopting well-communicated tighter emissions standards with a long-term timetable would also encourage drivers to upgrade to greener vehicles and boost investments in the transport sector.



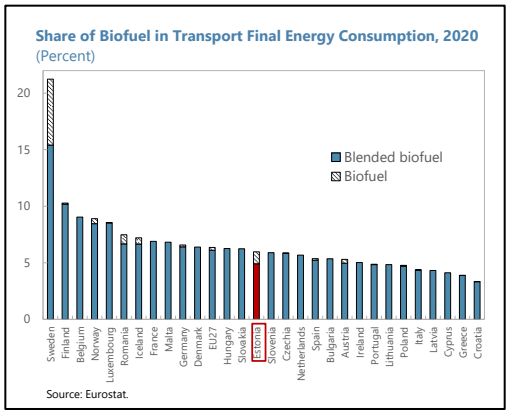
14. Policies should simultaneously encourage a greater shift to the public transport system and invest in expansion and electrification. Public transportation in Estonia represented

[12] Road tolls are time-based and only for heavy-duty commercial vehicles, while there are no congestion charges in urban areas (EC 2022).

[13] Estonia developed the world's first nation-wide EVs fast-charging network in the early 2010s (Rezvani et al., 2015).

about 20 percent of the total distance travelled in 2019, close to the EU average. While free public transport for residents initially boosted the use of public transport, the share of public transport use has started to fall from end-2016 (IEA, 2019), suggesting more incentives are needed to encourage the use of public transport.[14] Reliance on personal transport could be further reduced through the expansion of rail transport in regions where public transport services is less developed. The ongoing or planned electrification of the main railway lines, supported by EU funds, could be expanded to the whole network to achieve a faster decarbonization of transport. Further investing in electric buses, and in the appropriate charging infrastructure, could also complement existing efforts to use biomethane as a fuel for buses. Moreover, Estonia's rail network, which relies heavily on diesel fuel would benefit from further electrification (EC, 2019).

15. Further incentivizing the use low-carbon fuels will help reduce transport GHG emissions. International experience suggests that the transition to cleaner and low-carbon transport takes time.[15] Estonia has promoted the use of biomethane in public bus system through subsidies to establish biomethane filling stations (since 2015), grants to public bus operators that use methane, and subsidies to locally produced biomethane (since 2018). Nevertheless, the share of biofuels used in transport stood around 6 percent in 2019, below many EU countries. Recent data suggest that in 2020, Estonia's share of renewables used in the transport sector was above 10 percent of total energy consumption (EU Renewable Energy Directive's target). Setting up and facilitating standards adoption could be complemented by a carbon-based tax on fuels, which are generally better incentives to use most cost-efficient biofuels.



Key Policies in the Building Sector

16. The government has supported energy efficiency in the building sector through guarantees and subsidies. The government's programs and grants (through KredEx) support up to 40 percent of the renovation costs of apartment associations and homeowners, and 50 percent of the costs related to hiring technical consultants or renovation supervisors.[16] Renovations are also supported by the EU Cohesion Policy Fund, which finances up to 50 percent of total costs of apartment buildings built before 1993 (ODYSSEE, 2021). In addition, KredEx facilitates access to financing through guarantees covering up to 80 percent of the renovation financing for buildings with a riskier profile (e.g., due to location, size). Improving the terms of the existing long-term credit

[14] In 2013, Tallinn became the first capital city in the EU to provide free public transport to permanent residents.

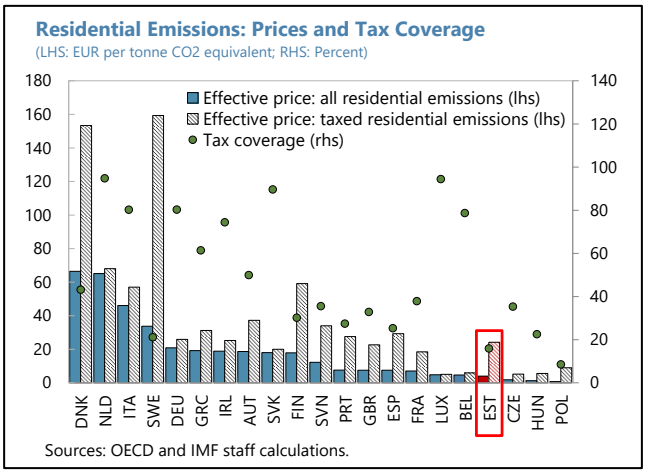
[15] For example, it would take at least two decades to replace Estonia's entire car fleet with EVs (OECD). Norway's success was supported by a comprehensive package.

[16] The size of grants linked the expected energy savings gains from the renovation (MEAC, 2017b).

to finance renovation would further incentivize renovation, by mitigating the impact of high upfront renovation costs.

17. Promoting an active renovation market would help accelerate energy efficiency improvements. Absorbing the potential increase in the demand for renovation will require an adequate capacity of the market to satisfy renovation needs to improve energy efficiency. Cross-country experience (IEA, 2019) suggests that setting up a market for energy service companies (ESCOs), has been very effective in delivering on energy efficiency savings across sectors.[17] The public sector could also contribute to a more active renovation market through large projects in the context of its renovation programme to catalyze the renovation of private buildings.[18] Policies to promote the training and skills upgrades of construction sector workers would also help meet the increase in demand for renovations, without putting a pressure on wages and costs. The 2013 building code introduced nearly "zero-energy standard," with which new public and private sector buildings must comply from 2019 and 2021, respectively. Compliance with the zero-energy standard would boost energy efficiency over time, provided that the existing skills—in the construction sector—for its implementation are upgraded.

18. Renovations should be further incentivized, including through carbon pricing. The IEA (2019) estimates that to achieve Estonia's National Energy Strategy, the annual renovation rate in the residential building stock would need to be 2 percent, which is higher than the 2019 renovation rate (0.5 percent). The need to accelerate renovations is reinforced by government studies suggesting that fully renovating buildings would lower heating consumption by up to 70 percent and electricity consumption by up to 20 percent (MEAC, 2020). In parallel, the effective price charged per ton of CO2 for residential buildings is comparatively low and could be complemented by a carbon pricing scheme.



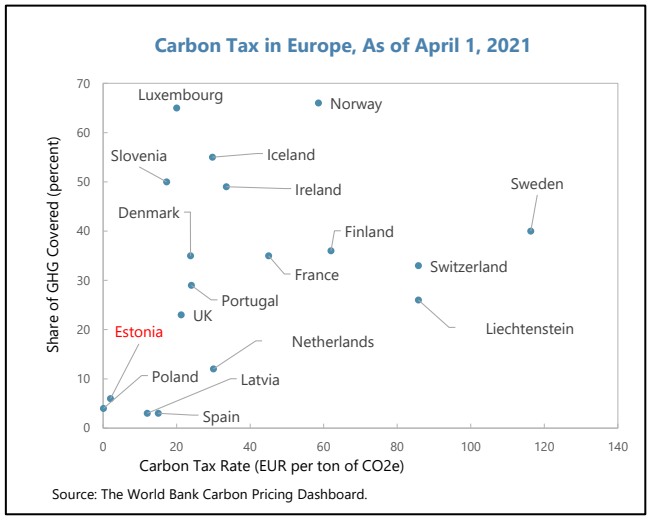
E. Exploring the Costs and Benefits of Adopting a Carbon Tax in Non-ETS Sectors

19. Adopting a carbon pricing strategy for sectors not covered by the EU ETS system would complement existing mitigation policies. Several EU countries have adopted carbon

[17] ESCOs are integrated companies of energy engineers and experts that provide energy saving solutions.

[18] 18 The public sector has targeted renovating 3 percent of central government building stock per year, as required by the EU Energy Efficiency, finance by the sale of CO2 allowances (MEAC, 2017).

taxation to complement their environmental regulations, and the EU emissions trading systems (ETS). However, the extent of such taxations varies in terms of the rate and the coverage of greenhouse gases.[19] Estonia carbon tax (EUR 2 per ton of eCO2) applies to all CO2 emissions from thermal energy producers except biofuel emissions and has a comparatively lower rate and coverage among EU countries. Some EU countries (e.g., Austria) are considering the introduction of carbon pricing covering non-EU ETS sectors. The overview of Estonia's challenges in further reducing emissions reveals room to further incentivize energy efficiency and a shift to greener sources of energy in the transport and building sectors. In line with some EU countries (e.g., Denmark, Finland), Estonia could consider introducing a national carbon pricing scheme in sectors not covered by the EU ETS.



Source: The World Bank Carbon Pricing Dashboard.

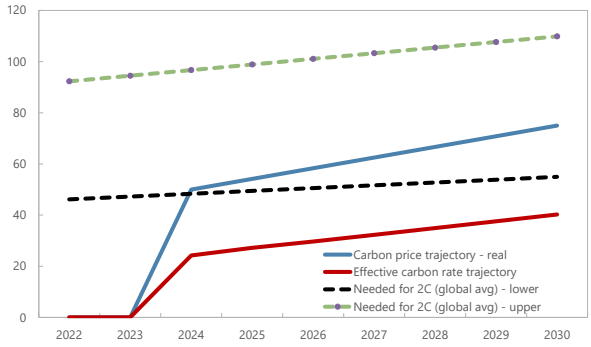
20. Carbon pricing entails trade-offs in terms of energy security, access to energy, and green transition. In the near term, a carbon pricing could exacerbate the high and volatile energy prices environment created by supply bottlenecks and the war in Ukraine. As pressure on energy prices recedes, adopting a national carbon pricing—the most efficient mechanism to reduce emissions—could be considered to further lower the climate impact of high-emitting non-ETS sectors. Precisely, a carbon pricing scheme should be part of broader climate mitigation strategy supported by sectoral policies to effectively achieve climate goals, while protecting low-income households and micro companies.

21. A gradual phase-in of a $75 per ton carbon tax from 2024 would help reduce the efforts needed to reach Estonia's NDC, while generating co-benefits. We analyze the effects of a carbon price applied to non-ETF sectors within the WB-IMF carbon pricing assessment tool (CPAT) framework, while assuming other policies including the EU ETS remain in place. For illustration purpose, we consider a gradual carbon tax phase-in of $75 per ton of CO2 equivalent, consistent with the recommended level by the High-Level Commission on Carbon Prices (Stern-Stiglitz 2017). Such carbon tax, if globally applied would maintain the global average temperature increase below 2°C (relative to pre-industrial levels). Gradually introducing such carbon tax in Estonia from 2024, was found to reduce by about 18 percent the gap between the baseline GHG emissions in 2030 and Estonia's NDC. Furthermore, the net welfare effect is expected to be positive, with climate benefits and transport and air pollution co-benefits outweighing the efficiency costs from introducing a new tax over the medium to long-term.

[19] 19 As of April 2021, Carbon taxes ranged from less than €1 per metric ton of carbon emissions in Poland and Ukraine to more than €100 in Sweden.

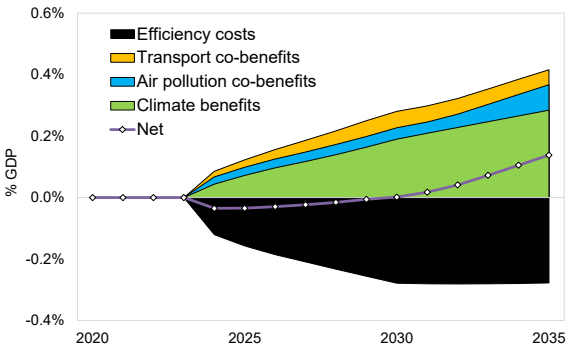
Figure 8. Illustrative Carbon Tax Trajectory and Related Co-Benefits

Estonia: Carbon Price Trajectory, 2023-2030
(US$ per tCO2e, 2019-2030)



Sources: IMF staff calculations; and CPAT.
Notes: Effective carbon rate adjusts for coverage.

Welfare Benefits for US$75 Carbon Tax per tCO2e by 2030
(Percent of GDP)

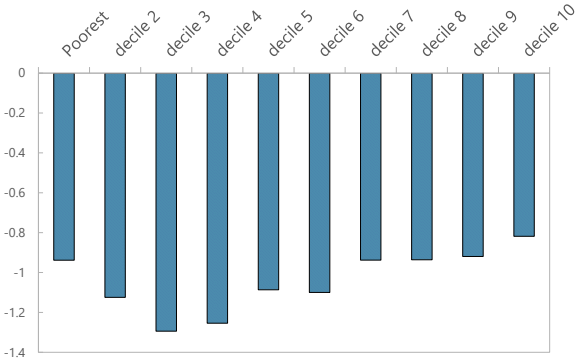


Sources: IMF staff calculations based on the Carbon Pricing Assessment Tool.

22. Fiscal revenue from carbon taxation could be channeled to mitigate distributional impacts. A carbon tax would have a relatively higher impact on the energy consumption for the low-income households given the larger share of inelastic energy demand in their expenditure baskets (e.g., for heating or transport). The disproportionately burden of climate mitigation on vulnerable groups could be mitigated through additional specific measures such as targeted transfers financed though carbon tax revenue.

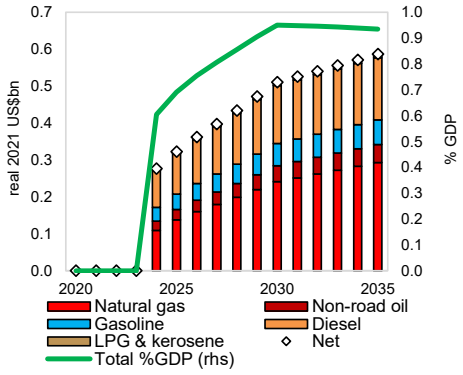
Figure 9. Distributional Effects of Carbon Taxation and Revenue, 2024–2035

Estonia: Relative Mean Consumption Effect of a $75 Carbon Tax per tCO2e in 2030
(Percent of total consumption)



Sources: Carbon Pricing Assessment Tool; IMF staff calculations
Note: The chart shows the fall in household consumption across income deciles from the linear phase-in of a $75 carbon tax on non-ETS emissions over 2024-2030.

Fiscal Revenues from Gradual Phase-in of a $75 Carbon Tax, by fuel and total
(Billion of USD; percent of GDP)

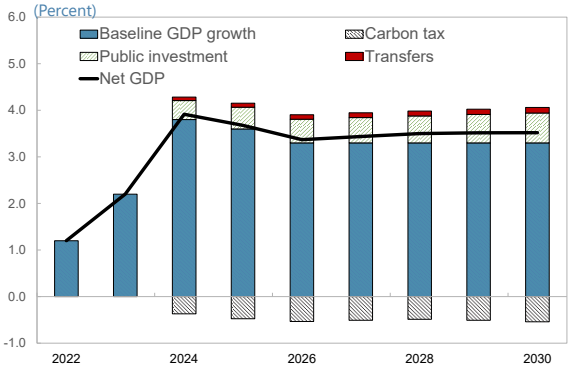


Sources: IMF staff calculations; CPAT tool.

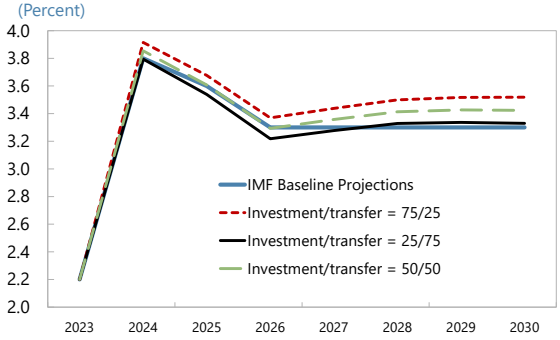
23. Recycling carbon tax revenue into transfers and investments, would also promote higher and more inclusive growth. In addition to be channeled towards mitigating distributional impacts, revenue from carbon tax could also be recycled into investment, including to support the

transition to renewable energy and greater efficiency. Simulations show that allocating a higher share of the recycled revenue to investments would generate higher and more inclusive growth than otherwise (Figure 10).

Figure 10. Growth Impacts of Carbon Taxation, 2023–2030



Sources: IMF staff calculations based on the Carbon Pricing Assessment Tool (CPAT)
Notes: The carbon tax is gradually phased in from $50 to $75 carbon tax on non-ETS emissions over 2024-2030; Also, 75 and 25 percent of the carbon tax revenue levied is recycled into investment and tranfers, respectively. The growth impacts are based investment and transfer multipliers of 0.9 and 0.5, respectively.



Sources: IMF staff calculations based on the Carbon Pricing Assessment Tool.
Note: The baseline projections are from the 2022 AIV Staff Report.

F. Conclusion and Policy Recommendations

24. The war in Ukraine calls for accelerating the green transition. As of 2020, GHG emissions in Estonia were reduced by 72 percent compared to 1990 levels, mostly owing to the restructuring oil-share sector. Furthermore, about 32 percent of Estonia's energy use was derived from renewables (EC, 2022). Nevertheless, the war in Ukraine, has strengthened the case for accelerating the green transition. The oil-shale restructuring should continue despite the short-term trade-off between energy security and climate policy. Replacing oil shale in electricity production with low- and zero-carbon electricity sources (e.g., wind power, use of biomass) will also help achieve the GHG gas mitigation objectives. Achieving climate objectives would require accelerating the implementation of Estonia's comprehensive climate policies in line with the EU REPowerEU plan, especially in the transport and building sectors, where there is room to further incentivize efficiency.

- **Policies should further incentivize energy efficiency and sustainability in the transport sector,** including by promoting a greater vehicle efficiency, low-carbon transport, while also investing in the expansion and electrification of public transport. Existing policies and regulations could be complemented by a broader environmental taxation, beyond excise duties, to further incentivize efficiency and the renewal of the road vehicle stock.

- **Renovations to improve energy efficiency in the building sector should be further incentivized.** Reducing buildings' energy demand will require accelerating renovations to increase energy efficiency, which should also be supported by an adequate capacity of the market to provide the requisite services.

25. A comprehensive and predictable carbon pricing strategy remains critical to achieve the emissions targets. Calculations based on the IMF-WB CPAT tool demonstrate that the adoption carbon pricing in the building and transport sectors—after high energy prices abate—would help achieve mitigation goals while also generating a net positive welfare effect. Furthermore, the revenue generated by such reforms could be recycled into targeted transfers to alleviate distributional effects and into green investments to further accelerate the green transition.

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