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# POLICY BRIEF

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## The Security Dividend of Climate Policy

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# Overview


- By reducing reliance on fossil fuels, EU climate policy substantially lowers Russia's financial strength, thereby limiting its military capabilities to sustain its aggression on Ukraine and beyond.
- We provide estimates for the security dividend of EU climate policy.
- A one-euro reduction in oil consumption in the EU results in a security dividend of 37 cents (central estimate).
- Based on the security dividend alone, a significant carbon price (central estimate of 60 euros per ton of $CO_2$) on oil consumption is justified – in addition to its climate, terms-of-trade, and local health benefits.
- Ambitious EU climate policy that reduces demand for oil and natural gas should be seen as an important pillar of the European security architecture, complementing military spending, diplomatic efforts, and continued support to Ukraine.



**Keywords:** EU climate policy, Security dividend, Russia, Ukraine, Defense spending, Geopolitical externality



- Durch die Verringerung der Abhängigkeit von fossilen Energieträgern kann die EU-Klimapolitik die Finanzkraft Russlands deutlich verringern und damit dessen militärische Fähigkeiten zur Fortführung der Aggression gegen die Ukraine und darüber hinaus einschränken.
- Wir liefern Schätzungen für die Sicherheitsdividende der EU-Klimapolitik.
- Eine Reduzierung des Ölverbrauchs in der EU um einen Euro führt zu einer sicherheitspolitischen Dividende von 37 Cent (zentrale Schätzung).
- Allein auf der Grundlage der Sicherheitsdividende ist ein signifikanter $CO_2$-Preis (zentrale Schätzung von 60 Euro pro Tonne $CO_2$) auf den Ölverbrauch gerechtfertigt – zusätzlich zu den Vorteilen für Klima, Terms of Trade und lokale Gesundheit.
- Eine ehrgeizige EU-Klimapolitik, die die Nachfrage nach Erdöl und Erdgas reduziert, sollte als wichtiger Pfeiler der europäischen Sicherheitsarchitektur gesehen werden, der Militärausgaben, diplomatische Bemühungen und die weitere Unterstützung der Ukraine ergänzt.



**Schlüsselwörter:** EU-Klimapolitik, Sicherheitsdividende, Russland, Ukraine, Verteidigungsausgaben, Geopolitische Externalität

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# The Security Dividend of Climate Policy

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## 1 Introduction

Europe's security architecture is being reshaped by two major disruptions: Russia's aggressive foreign policy and a rebalancing of US interests and security commitments.[1]

Russia's full-scale invasion of Ukraine in 2022 has demonstrated its disregard for the sovereignty of neighboring countries and exposed critical vulnerabilities in European defense capabilities, which remain heavily reliant on the United States. At the same time, Europe faces growing uncertainty over the reliability of US support for Ukraine and broader security commitments to the continent, particularly regarding NATO's Article 5.

In response, European policymakers have pursued two primary strategies: weakening Russia's military capacity through sanctions and strengthening European military capabilities via increased military spending. However, both approaches have their limits. Economic sanctions have not proven sufficiently effective, as Russia has adapted through sanctions evasion (Scheckenhofer, Teti, and Wanner, forthcoming) and domestic industry adjustments. Meanwhile, the necessary surge in military spending faces political resistance and financial constraints.[2] Given the increasing competition for scarce financial resources, concerns have emerged over whether other ambitious policy goals – particularly climate action – remain economically affordable.

This *Kiel Policy Brief* argues that climate policy – particularly the reduction of oil and natural gas demand – creates a positive "geopolitical externality" (Beaufils et al., 2025) and should therefore be recognized not as a conflicting priority, but as a strategic complement to traditional security policy. By reducing reliance on fossil fuels, ambitious EU climate policy can substantially lower Russia's financial strength, thereby limiting its military capabilities to sustain its aggression on Ukraine and beyond. This "security dividend" reinforces, rather than competes with, traditional security policy.[3]

[1] These twin shocks have pushed the debate on NATO military spending targets high on the political agenda, with proposals to raise the current 2% benchmark to as high as the 5% requested by US President Trump.

[2] Burilkov and Wolff (2025) estimate that an additional 250 billion euros annually would be required to match the current level of security provided by the USA in case of Russian direct military aggression.

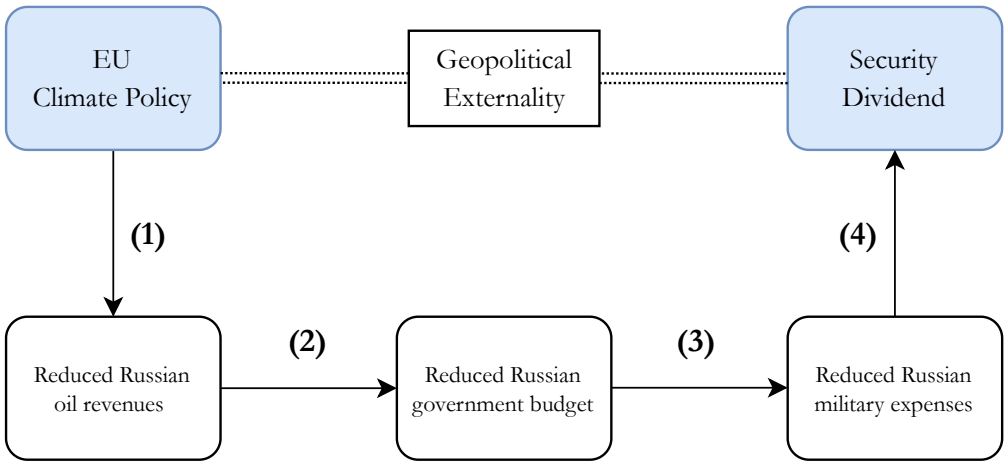
[3] A similar statement, though from a different perspective, frames climate policy as a means to reduce climate-related security risks in Germany (Bundesnachrichtendienst and Metis Institute for Strategy and Foresight and Potsdam Institute for Climate Impact Research and adelphi research, 2025). As noted in the report, "For the BND [Germany's Federal Intelligence Service], climate change with its impacts such as destabilization and migration is one of the five major threats [Germany] is facing [...]."

# 2 The *Geopolitical Externality of EU Climate Policy*

## 2.1 The four steps from climate policy to security dividend

Figure 1 illustrates how EU climate policy creates a positive geopolitical externality by generating a security dividend. The mechanism unfolds in four steps: First, EU climate policy lowers fossil fuel demand, reducing Russian oil revenues. Second, lower oil revenues decrease the Russian government budget. Third, the lower budget translates into lower Russian military expenditure. Fourth, the lower military expenditure eases pressure on EU defense expenditure. As a result, EU climate policy acts as if the EU were increasing its defense spending, thereby creating a security dividend as a co-benefit.

**Figure 1:** The four components of the geopolitical externality of EU climate policy.




***Source:*** Own illustration based on Beaufils et al. (2025).

We will proceed by quantifying each step of this outlined specific causal chain linking EU climate policy to reduced Russian oil revenues and a resulting security dividend. However, it is important to stress that the underlying concept – the geopolitical externality of climate policy – is much broader.

It extends beyond Russia to include other autocratic rival countries reliant on fossil fuel exports, such as Iran. Nor is it limited to oil: a similar causal chain applies to natural gas, where reduced demand can weaken the financial and military capabilities of rival countries.

Moreover, the relevance of this mechanism is not constrained to the current war in Ukraine. As long as geopolitical rivalries lead to increased military spending for deterrence, the geopolitical externality of climate policy remains relevant in times of peace, too, offering a long-term co-benefit.

## 2.2 Estimates of the EU security dividend

In the following, we present key insights from our approach to quantifying each step of the causal chain, before combining them into a single measure of the overall geopolitical externality. For a detailed methodological discussion, including alternative model assumptions, see Beaufils et al. (2025).

For the first link in the causal chain from EU climate policy to the EU security dividend, we quantify the impact on Russian oil revenues. By reducing oil demand, EU climate policy lowers the market value of the global oil production, a share of which is borne by Russia. In Beaufils et al. (2025), we apply a Walrasian model of the oil market combined with supply and demand elasticities ($\epsilon_S$ and $\epsilon_D$) from Gars, Spiro, and Wachtmeister (2022), as well as data on the share of Russian net exports ($\chi_{RUS}$) and EU net imports ($\mu_{EU}$) in global oil supply. This allows us to pin down the reduction in Russian oil revenue per euro of reduced EU oil expenditure as: $\chi_{RUS}[\epsilon_S - (1-\mu_{EU})\epsilon_D]^{-1} = 0.07 \times [0.13 + 0.89 \times 0.45]^{-1} = 0.13$ euros. Accounting for estimation uncertainty in supply and demand elasticities, Russian oil revenues decline by 6 to 27 cents for every euro the EU spends less on oil. Our estimate accounts for redirected oil trade flows, with other importing countries partially absorbing the reduced EU demand. Thus, it reflects the net impact on Russian revenues.

Since taxes on oil and gas account for about one third of the Russian government budget (with oil making up 80% of these fossil fuel taxes), losses in oil revenue are likely to have a strong fiscal impact. Given that Russian oil extraction costs are found to be nearly fixed (Spiro, Wachtmeister, and Gars, 2024), for the second link in the causal chain, we assume in Beaufils et al. (2025) that the Russian government skims any additional turnover, implying a one-to-one relationship: every euro lost in Russian oil revenue results in a one-euro reduction in the Russian budget.

The relationship between Russia's government budget and military expenses – the third link in the causal chain – is more complex. Our preferred estimate in Beaufils et al. (2025) assumes that the Russian government is fully committed to winning the war, allocating every additional euro in the budget to its military.[4] This implies another one-to-one relationship: every euro lost from the Russian government budget translates into a one-euro reduction in military spending. A more conservative assumption is that Russian budget changes are distributed proportionately across all expenses, in which case a one-euro lower budget would reduce military expenditure by 30 cents, reflecting that military expenses constitute 30% of Russia's budget. In contrast, a dynamic consideration taking into account that reduced Russian fiscal capacity would ultimately lead to Russia no longer being

[4] Going one step further back in the causal chain, this assumption may be particularly plausible, because oil revenues actually come in foreign currency that is needed to buy specific military and high-tech goods and oil revenue may therefore be hard to substitute by other taxes.

able to uphold the war effort and therefore expedite the end of the war, results in a much larger multiplier of four.

For the final step of the causal chain illustrated in Figure 1, we quantify the cost inflicted on the EU by Russia's invasion of Ukraine. In Beaufils et al. (2025), we compare cumulative Russian military spending on the war in Ukraine – from its start to the end of 2024 – estimated between 131 and 350 billion USD (with a central value of 200 billion USD), to the corresponding costs borne by the EU. According to the Kiel Institute's *Ukraine Support Tracker* (Trebesch et al., 2024), the EU had provided 122.5 billion USD in military, financial, and humanitarian support to Ukraine by the end of 2024. In addition, we factor in the EU's likely contribution to expected post-war reconstruction costs, estimated at 448.2 billion USD, assuming reconstruction costs are shared among European countries proportionally to their previous support to Ukraine.[5] For our preferred estimate, we compare Russia's war expenditures of 200 billion USD to the EU's total cost burden of 571 billion USD, yielding a central multiplier of about 2.9: every euro of reduced Russian military spending saves the EU 2.9 euros in costs associated with the war. We quantify the range of this multiplier with the lower bound (0.4) combining the highest estimate of Russian war spending with past support only, while the upper bound (4.4) is based on the lowest Russian war cost estimate with total EU support plus reconstruction. We consider the upper bound to still be conservative, as it does not account for other indirect costs, such as the negative impact of the war on EU GDP or increased EU military spending aimed at deterring direct Russian aggression against EU member states.

Table 1 summarizes our estimates for each of the four components, presenting the lower bound, upper bound, and central estimate (in bold). Additionally, it provides the combined product of these components – again with central, lower, and upper estimates – representing the geopolitical externality of EU climate policy. Accordingly, each euro not spent on oil in the EU indirectly generates a security dividend ranging from 1 cent to 4.70 euros, with a central estimate of 37 cents.

Our central estimate corresponds to an optimal ad-valorem tax on oil of 36% to capture the security dividend of EU climate policy. At a current Brent crude oil price of 68 euros per barrel,[6] this translates into an effective tax of approximately 25 euros per barrel.

Put differently, when extrapolating to the total annual consumption in 2023, EU oil consumption caused estimated geopolitical costs of 104 billion euros. This amount is comparable in size to Germany's 100 billion euro special fund ("Sondervermögen") for defense spending in 2022 – but unlike the special fund, this is not a one-time cost, but a recurring annual burden.

In terms of carbon pricing, the results correspond to an implicit carbon price on oil of around

[5] See World Bank (2025) for an estimate of the total reconstruction costs.

[6] As of March 26, 2025, Brent crude oil was priced at 73.34 USD/barrel, with an exchange rate of 1.080 USD/EUR (`https://markets.ft.com/data/commodities/tearsheet/summary?c=Brent+Crude+Oil`).

**Table 1:** Estimates of the geopolitical externality from EU oil consumption

| Causal step | Ad-valorem estimate Low | **Central** | High |
|---|---|---|---|
| (1) Reduced Russian oil revenues | 0.06 | **0.13** | 0.27 |
| (2) Reduced Russian government budget | 1 | **1** | 1 |
| (3) Reduced Russian military expenses | 0.3 | **1** | 4 |
| (4) Reduced EU's security spending | 0.4 | **2.9** | 4.4 |
| Total | 0.01 | **0.37** | 4.70 |

***Notes:*** Ad-valorem estimates are expressed in monetary cost per monetary unit of oil used.
***Source:*** Beaufils et al., 2025.

60 euros per ton of $CO_2$ emitted in the EU.[7] This estimate is based solely on the security dividend of EU climate policy and is in addition to its climate benefits and other so-called co-benefits of reducing fossil fuel consumption, such as improved air quality and improved EU terms-of-trade.

## 2.3 Policy implications

Concerns over the geopolitical changes and the resulting rise in security threats are fueling a debate questioning whether the EU can still afford to undertake ambitious climate policy at this point (see, e.g. Adema et al., 2025). Our analysis shows that this debate is in fact misguided because ambitious climate policy strongly contributes to European security.

Putting the estimated magnitude of the security dividend into perspective, the implied central estimate of the carbon price on oil of 60 euros per ton of $CO_2$ is in fact very close to existing carbon prices: the EU ETS allowance price of approximately 70 euros/t$CO_2$ and Germany's national ETS permit price of 55 euros/t$CO_2$ fixed for 2025 (ranging between 55-65 euros/t$CO_2$ in 2026).[8] Expanding the EU ETS to cover oil (and natural gas) consumption in housing and transport, as planned under EU ETS 2, is therefore an appropriate policy choice from multiple angles. In addition, taking into account the security dividend, a higher permit price under the EU ETS 2 – which primarily covers emissions from oil and natural gas – would be economically justified compared to the existing EU ETS, which also includes emissions from coal.

Taking into account the security dividend also sheds a different light on other climate policy changes currently under debate. For example, the European Commission's plan to give EU au-

[7] This is based on an emissions factor of 0.4187 t$CO_2$ per barrel: (158 l x 2.65 kg$CO_2$/l / 1000). This implies that each 1-euro reduction in EU oil spending corresponds to 6.6 kg of $CO_2$ savings in the EU.

[8] EU ETS allowance prices (on March 26, 2025) and the German ETS price are taken from `https://tradingeconomics.com/commodity/carbon` and `https://www.dehst.de/EN/Topics/nEHS/nehs_node.html`, respectively.

tomakers more time to adhere to stricter $CO_2$ emission targets has been estimated to lead to up to 50 million tons of additional $CO_2$ emissions.[9] According to our central estimate of 60 euros per ton of $CO_2$, this would then cause geopolitical costs for the EU of up to 3 billion euros.

Another example is the potential introduction of a speed limit on the German road network. Specifically, a speed limit of 120 km/h on German Autobahnen and 80 km/h on federal highways, respectively, is projected to save approximately 33 million tons of $CO_2$ emissions by 2030.[10] Using our central estimate for the geopolitical externality this emission reduction translates into a security dividend of approximately 1.98 billion euros by 2030.

Finally, our analysis indicates that natural gas imports into the EU should also be subject to an additional tariff or equivalent demand-reducing measures, given that the same geopolitical externality applies. This consideration is particularly relevant when negotiating new long-term supply contracts or when evaluating the activation of pipeline infrastructure, such as the remaining Nord Stream 2 pipeline.

## 3 Conclusion

Faced with the dual challenges of Russia's aggression and uncertainty around US security commitments, Europe must rethink its security architecture. This *Kiel Policy Brief* demonstrates that climate policy is central to this effort, as it is not a competing priority but a strategic complement to traditional security policy.

By reducing fossil fuel dependence, EU climate policy weakens Russia's financial capacity and, thus, military strength, thereby generating a security dividend alongside its climate benefits. Our estimates suggest that this effect is substantial: a one-euro reduction in oil consumption in the EU results in a security dividend of 37 cents (central estimate). This implies that a price of 60 euros per ton of $CO_2$ on oil consumption is justified solely based on geopolitical considerations – in addition to its climate benefit.

Our findings are conservative, as they account only for the geopolitical externality of Russian oil revenues. However, the geopolitical impact of EU climate policy extends beyond Russia, affecting other autocratic rival countries reliant on fossil fuel revenues, such as Iran, including other fossil fuels, particularly natural gas, as well as contributing to conflict avoidance effects through reduced

[9] See https://www.presseportal.de/pm/22521/5984486.

[10] According to a recent report by the German federal environmental agency (https://www.umweltbundesamt.de/sites/default/files/medien/11850/publikationen/176_2024_texte_tempolimit.pdf), a speed limit could reduce GHG emissions by -4.7% annually or -7.4 million $tCO_2$ relative to 2018 values. Over the period 2025-2030, the cumulative emissions savings amount to 33 million tons of $CO_2$ emissions (see Table 8), accounting for an increasing share of electric vehicles and declining emissions from road transport over time. For more details, see https://www.umweltbundesamt.de/themen/verkehr/nachhaltige-mobilitaet/tempolimit.

climate damages. Ambitious EU climate policy should therefore be seen as an important pillar of the European security architecture, complementing increased military spending, diplomatic efforts, and continued support to Ukraine.

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