



Financing the Global Commons to Achieve the Sustainable Development Goals

HELGE SIGURD NÆSS-SCHMIDT

Fellow | Global Solutions Initiative

MICHAEL THÖNE

Managing Director and CEO | FiFo Institute for Public Economics at the University of Cologne

MARGIT SCHRATZENSTALLER-ALTZINGER

Senior Economist | WIFO Vienna

CHRISTIAN KASTROP

CEO and Partner | Global Solutions Initiative

RÉMY A. WEBER

Program Manager | Global Solutions Initiative

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We want to pay. We do not want others to pay for us... Once we raise the money globally, once everybody pays – if it is one percent, let all of us pay one percent – so that we can sit at the table.

WILLIAM RUTO | President of the Republic of Kenya, at the 2023 Paris Summit for a New Global Financing Pact

TABLE OF CONTENTS

4	Key Points
4	Background: Scale of Required Investment and Financial Needs
8	Criteria for Financing Instruments to Deliver on External Finance Needs
8	Reviewing the Financing Instruments
8	Gross National Income as Base
9	Taxing Emissions from Energy Use
12	Taxing Financial or Digital Services
14	Final Reflections
15	References
16	About the Authors
18	Annex
18	Imprint

KEY POINTS

- In 2015, the global community committed to achieving the UN Sustainable Development Goals (SDGs). We cannot achieve these goals without identifying internal and external financing sources for Emerging Market and Developing Countries (EMDCs).
- By 2030, the ambitious economic, social and environmental targets of EMDCs will likely double their financing needs to \$5.4 trillion per year.
- This paper analyzes robust and significant sources of external public finance within the international community. We examine several financing instruments – most of which are already being considered for financing SDGs – and evaluate them based on six performance criteria.
- Our analysis highlights two options with the greatest potential: implementing a carbon tax on energy-intensive industries and using gross national income as a direct tax base for SDG contributions.

BACKGROUND: SCALE OF REQUIRED INVESTMENT AND FINANCE NEEDS

The Sustainable Development Goals (SDGs) emerged from a truly global process. In 2015, all United Nations Member States committed to achieving the SDGs by 2030. Since then, the 17 SDGs have shaped an impressive array of societal activities and public policies. Governments are acting to implement the SDGs at all levels of the public sector – from the local level to the regional and state levels and, finally, through supranational organizations and international cooperation. At first glance, it might appear strange that global goals are mainly pursued by “non-global” actors across all levels of government. However, this dispersal is necessary given the diversity of the SDGs and the very different starting conditions and development needs of countries around the world. Yet, a system that relies on the implementation of global goals by governments at the local, regional and national levels runs the risk of not clearly assigning responsibility for the financial contributions needed to reach these global goals.

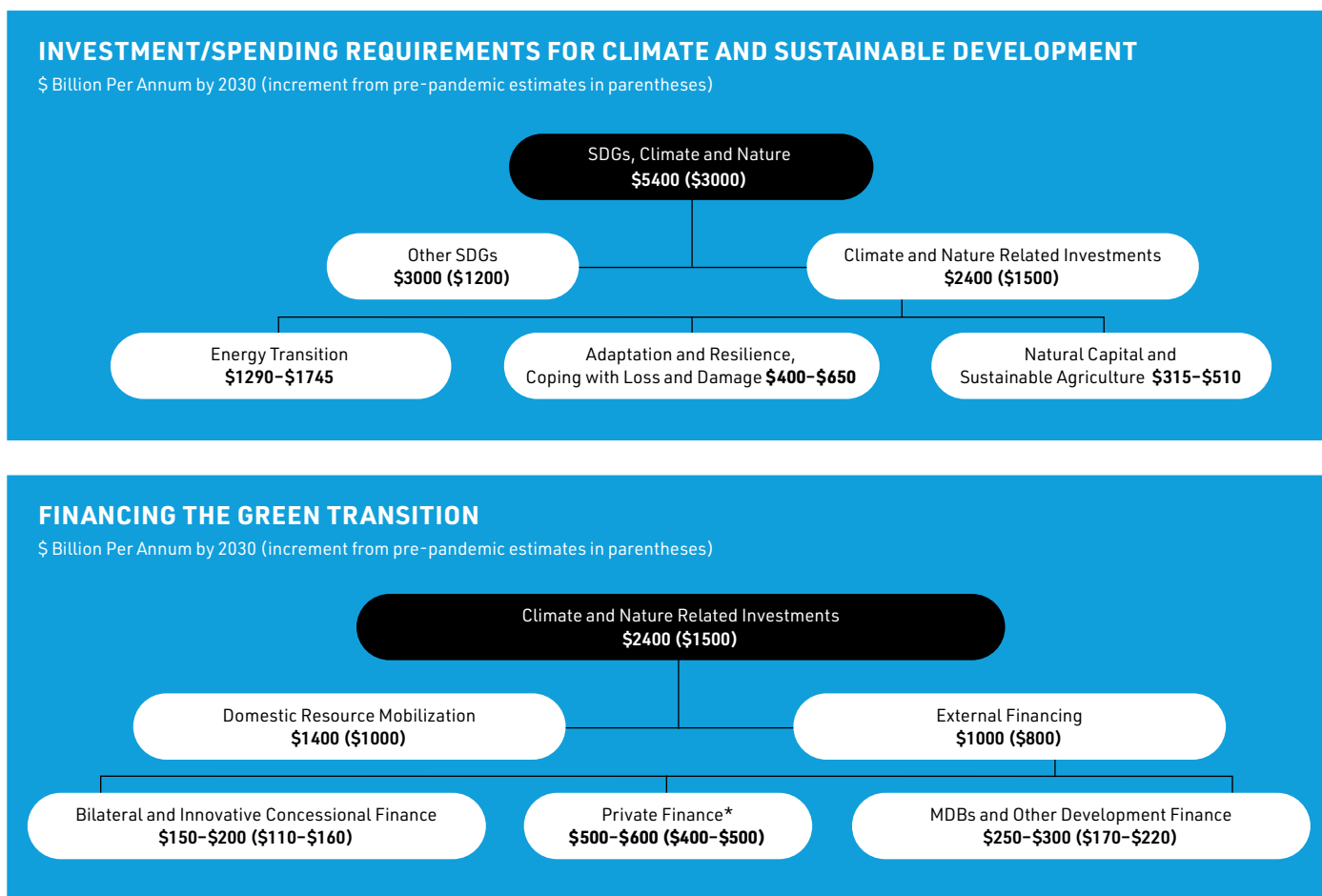
In principle, this contradiction can be corrected by a well-designed global financing system. For practical reasons, the implementation of the SDGs cannot – and should not – be elevated to the global level. The same is not true for financing the implementation of the SDGs: A global mechanism for efficient, fair and sufficient financing of sustainable development and climate transformation is both necessary and achievable. The premise of this paper is that it is not a lack of good will or capabilities that will prevent us from achieving the

SDGs. Rather, global success is threatened by a lack of sufficient common funding and of associated incentives. What we need are financial structures that support the global SDGs with the same level of commitment we see at the local, national and regional levels.

In technical terms, a capable global fiscal equalization system is required. In practice, this would require a fundamental movement away from the current ad-hoc financing of the SDGs at the global level. Dependable financing tools will make all the difference. This paper focuses on the first, necessary step: Identify adequate, sustainable and implementable public revenue sources to meet our shared global goals.

To date, the financing of the SDGs is largely non-permanent. It is, therefore, unreliable and subject to short-term decisions and to political interference at multiple levels. Even as the need to deliver on the SDGs rapidly becomes more urgent, their financing is deeply rooted in inefficient structures of the past. Financing the SDGs requires a great deal of individual goodwill and discretionary action – be it agreements on debt relief or cancellation; grants or loans from multilateral development banks (MDBs) and other international financial institutions (IFIs); allocations of Special Drawing Rights; G7 or G20 financing packages; activities of UN agencies; or NGO and private sector philanthropy and assistance. Both existing private and public sources of financing are far from reliable for potential recipients. The built-in inefficiencies of the current system make mid- to long-term planning incredibly difficult.

FIGURE 1. AN ESTIMATE OF YEARLY INVESTMENT AND FINANCE NEEDS TO DELIVER ON SDGs FOR EMDCs BY 2030 (WITH COMPARISON TO PRE-PANDEMIC ESTIMATES)



Source: Adapted from "The Paris Agenda to Deliver on a New Global Financing Pact," by Bhattacharya, Songwe, Stern (2023), and "Finance for Climate Action: Scaling up Investment for Climate Development," by IHLEG (2022).

Moreover, the SDG financing universe is highly sensitive to unforeseen, sudden events such as pandemics, regional wars, environmental disasters and other external shocks that cause financial turmoil. The rollback of multilateralism and the rise of nationalism exacerbate the challenges of reliably financing sustainable development. The current non-systemic approach to SDG financing also relies on the economic or political conditions in nation states. In the event of conflict, it automatically favors local, regional and national political priorities. The result is that the implementation of the SDGs systematically lags behind actual growing needs.

The focus in the international debate has naturally been on Emerging Market and Developing Countries (EMDCs), simultaneously characterized by GDP per capita incomes at the lower end, as well as a low share of cumulated historical emissions of greenhouse gases that have led to the global climate challenge. EMDCs, by definition, have fewer domestic resources for implementing SDGs, as well as






a reasonable expectation that they should bear a smaller part of the financial burden to do so.

The challenge, in our view, is to determine how to mobilize domestic as well as external finance in the coming years and decades so that EMDCs can meet their goals. Developed countries have offered to provide \$100 billion in cumulative climate financing at successive COPs, a goal likely to have been achieved by 2023.¹ However, this amount is only a fraction of the estimated \$1 trillion in external financing needed for 2030 alone. The total yearly investment needs amount to \$5.4 trillion per year for the group of EMDCs by 2030 (see Figure 1), a tremendous increase of \$2.4 trillion yearly compared to pre-pandemic levels of 2019.

The study from which Figure 1 is drawn assigns half of external finance needs to private finance with the second half sourced from public budgets, by way of bilateral and innovative concessional finance and through MDBs and other

¹ See IHLEG, 2023, p. 5.

TABLE 1. CATEGORIES AND NATURE OF 17 SDGs VERSUS NEED FOR EXTERNAL FINANCE

	ENERGY 	CLIMATE 	WIDER ENVIRONMENTAL GOALS 	ECONOMIC DEVELOPMENT 	SOCIAL DEVELOPMENT 
Concrete goal	7. Affordable and clean energy	13. Climate action	6. Clean water and sanitation 11. Sustainable cities and communities, 12. Responsible consumption and production 14. Life below water 15. Life on land	8. Decent work and economic growth 9. Industry, innovation and infrastructure 16. Peace justice and strong institutions 17. Partnerships for the goal	1. No poverty 2. Zero hunger 3. Good health and well-being 4. Quality education 5. Gender equality 10. Reduced inequalities
What to achieve	Expansion of green energy production including supporting infrastructure	Coping with losses driven by climate change Adaptation measures to mitigate future losses	Better access to key amenities supported by regulatory structure	Supporting productivity growth and job creation	Inclusive social development
Nature of intervention	Framework regulation facilitating income generating investments in production and distribution of green energy products	Pure transfers to recipient countries for losses and to a certain extent adaptation	Market regulation to promote investment in utility-like infrastructure	Transforming governance and institutions	Domestic policy reforms supported by international trading regimes
Need for and character of external finance	Private investments supported by concessional finance where needed	Largely public	Concessional finance instrument to support private investments	Concessional finance instrument to support private investments	Arguably, mainly the result of attaining energy, climate, environmental and economic SDGs

development finance (see Figure 1). In addition, the need may arise to finance debt relief in view of the distressed financial situation for many EMDCs, compounded by the recent rise in global interest rates.²

There is a widespread recognition that the ad-hoc nature of allocating and providing public finance from developed countries to EMDCs is problematic. At COP23, the Global Solidarity Levies Task Force was launched: Its mission is to consider the full range of sources for mobilizing funds for the investment needs in EMDCs.³

In this context, we examine three key questions:

- How does the nature of the SDGs impact both the need for external financing, i.e. should it be public or private?
- Which criteria for the selection of more stable sources of external finance for SDGs should be established?
- How well do available financing tools match the proposed criteria?

NATURE OF SDGS VERSUS EXTERNAL FINANCE NEEDS

The highly diverse nature of the 17 SDGs requires a broad set of instruments. Currently, the need for external public finance in the form of transfers is primarily focused on climate goals linked to coping with the costs caused by climate change (loss and damage), including measures to protect against future damages (adaptation). Energy and economic development goals are primarily financed by domestic and external private capital, and are to be supported by improved framework conditions and institutional reforms in recipient countries.

Table 1 outlines the logical progression from SDGs to the actions needed to achieve them and the corresponding need for external finance, public or private. The significance of energy-related investments cannot be overstated. Not only do they constitute the bulk of the overall SDGs-related in-

² See for instance Siaba Serrate et al. 2024, p. 3-4.

³ See Second Report of the Independent High-Level Expert Group on Climate Finance, 2023, page 23.

vestments (as shown in Figure 1), but energy-related investments will also be transformative for EMDCs. For the majority of EMDCs, many clean energy solutions are less expensive than fossil fuel-based solutions. Over time, imports of coal, gas and oil will be replaced by domestically produced solar and wind power and derived fuels, necessitating the development of upstream and downstream infrastructure and production facilities. In turn, the massive expansion of domestic energy production at affordable costs will be a key driver of – and condition for – economic development that will raise living standards and drive job creation.

Ultimately, the achievement of broader social goals depends on economic goals being met. Higher growth and productivity, driven by institutional reforms, will provide governments with tax revenues that can finance better health and educational outcomes for all segments of the population. There is no guarantee, however, that these revenue sources will be sufficient to finance all social development goals. International transfers may still be needed to effectively combat poverty and hunger.

Policy actions will interact with one another in a mutually reinforcing way. Broad-based growth over decades will require broad-based economic reform. At the same time, improved governance will be essential in creating the framework conditions for investment and reducing investment risk. Risk reduction, in turn, will be essential for mobilizing international as well as domestic private finance. At the same time, external public capital can play a key role in identifying and remedying the policy factors that drive up the cost of capital in many EMDCs. For instance, the rapid rise in climate change related costs risks sapping fiscal resources in many EMDCs unless the countries responsible for the bulk of historical emissions step in to foot a significant part of the bill. This may in turn weaken the ability of EMDCs to meet their environmental, economic and social goals.

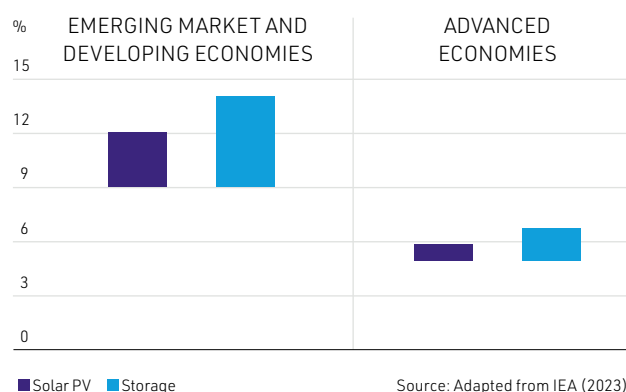
A division of labor with respect to mobilizing capital is necessary. Nationally oriented SDGs – such as education, health and wider social goals – will ultimately have to be financed by increased domestic tax revenues that follow higher growth and public governance reforms that can increase the tax take in EMDCs. By contrast, globally oriented SDGs – such as coping with climate-related loss and damage, as well as mitigation to reduce GHG emissions – will increasingly need to be financed by international capital sources, some public, some private. In the private sphere, we need instruments that derisk the mobilization of private capital. Box 1 sketches this issue.

BOX 1: ADDRESSING COST OF CAPITAL IS ESSENTIAL

It is hard to overstate the importance of reducing the cost of capital for EMDCs, not only for energy and climate-related investments but also for overall economic development. Cost of capital means the required expected ex-ante return to investors when undertaking investments, be it in the form of debt or equity. Numerous studies show that cost of capital is easily double or triple for EMDCs compared to advanced economies: For solar photovoltaics (PV) and storage, the cost of capital was estimated in 2022 to be in the range of 9 to 14 percent in EMDCs compared to only 5 to 7 percent in advanced economies (see Figure 2). Given the highly capital-intensive nature of the energy transition, the surcharge in financing costs inflates the total cost. The International Energy Agency has calculated that a reduction of just 1 percentage point in the cost of capital for EMDCs could reduce annual financing costs for EMDCs by \$150 billion in a net-zero scenario. Based on this estimate, the 5–10 percentage point gap between the cost of capital in EMDCs versus developed countries represents potential costs of \$750 billion to \$1.5 trillion yearly.

Either the cost of capital is reduced or economic development in EMDCs will be much slower, which will negatively impact their ability to achieve the SDGs. For instance, high capital costs will hamper the ability of many EMDCs to become future energy exporters. This challenge affects not only their capacity to produce energy for their own needs—replacing imported coal, gas, and oil with domestically produced power and derived products—but also their potential to export green fuels on a large scale to the rest of the world.

FIGURE 2. COST OF CAPITAL RANGES FOR SOLAR PV AND STORAGE PROJECTS IN EMDCs AND ADVANCED ECONOMIES IN 2022



CRITERIA FOR FINANCING INSTRUMENTS TO DELIVER ON EXTERNAL FINANCE NEEDS

To achieve the SDGs as a global community, we need new financing tools that can meet the needs of EMDCs. As a starting point, we assume a need for \$500 billion per year by 2030 to be provided through external public finance. As already noted, this goes far beyond the existing pledges by developed countries and is highly unlikely to be achieved by 2030 through yearly or ad-hoc discussions and bilateral commitments. We need a gamechanger: Permanent, non-arbitrary and sufficient global financing tools.

We propose that financing tools be selected following six criteria:

1. Easy to calculate and (technically) easy to collect and administer;
2. Easy to communicate;
3. Stable and predictable revenues that are sufficient in view of the relevant SDGs;
4. No or limited adverse economic effects;
5. Distributional impact between advanced, emerging and developing economies
6. Subsidiary test (externalities, economies of scale and scope)

The last criterion examines the extent to which a tax tool is naturally born as an international tax base. Taxable objects and activities which can – and should – be taxed already on the local, regional or national level usually do not offer a good basis for an additional international tax. This means that the implementation of the tax will benefit from, or even be conditioned on, co-operation between regions and countries, and preferably be directly linked to the attainment of the SDGs. It is crucial that any chosen tool works with the support and cooperation of a critical mass of countries, as opposed to requiring universal support. The conditions must not allow non-supporting countries or regions to undermine a tool's effectiveness by withholding participation. In other words, any free-rider effects must be limited.

REVIEWING THE FINANCING INSTRUMENTS

Based on these criteria, we reviewed the pros and cons of three sets of tools. The first tool set explores the Gross National Income as a tax base. The second tool set consists of taxes on energy emissions from five different sources. The third tool set is related to taxing financial and digital services. While wealth taxes have also been proposed as a financing source,⁴ we have not included them in this context due to the many open issues and questions related to their design and practical implementation.

GROSS NATIONAL INCOME AS BASE

There are strong arguments for using gross national income (GNI) as a base for financing SDGs. First and foremost, in 1970, the UN assembly adopted a resolution stating that economically advanced countries should, over time, provide a minimum net amount of 0.7% of their gross national product in official development assistance. From 1993 onwards, gross national product (GNP) has been replaced with gross national income (GNI) as the denominator in the target ratio for official development aid (the ODA/GNI rate).⁵ Second, countries calculate GNIs as standard practice in their efforts to monitor economic developments and UN and regional bodies are constantly involved in harmonizing the methods for collecting and measuring data to compute internationally-comparable data. Third, in 1988, the European Union introduced a model based on the GNI of its Member States as a fourth "own resource" (OR). Over the decades, GNI-based own resources have become the EU's most important source of revenue. GNI-based own resources, like all other EU own resources, are not transfers given by Member States to the Union as an act of their individual spending sovereignty. The EU has the right to draw on the budgets of the Member States. But own resources are not taxes either. Sometimes called "unreal taxes,"⁶ own resources are not based on a specific tax object but on the total tax revenue of the Member States. Depending on the fiscal needs, the GNI-based own resources rates (i.e. the percentage of GNI to be paid by Member States to the EU budget) vary from year to year.⁷ The Member States finance their own resource payments out of their national budgets.

⁴ For discussions on the use of wealth taxes, see for instance Zucman 2024 and OECD 2024b.

⁵ Simon, 2016

⁶ Steinbach, 2023

⁷ A GNI reference is also used to define the upper limits for total EU own resources. In the 2021-2027 multiannual financial framework, the permanent limit for annual appropriations for payments (so-called own resources ceiling) is set at 1.4% of GNI.

TABLE 2. GNI-BASED RESOURCES

SELECTION CRITERIA	EASY TO CALCULATE, COLLECT AND ADMINISTER	EASY TO COMMUNICATE	STABLE, PREDICTABLE AND SUFFICIENT REVENUES	EFFECT ON CONSUMER WELFARE/ ECONOMIC DISTORTIONS	DIRECT DISTRIBUTIONAL EFFECTS WITHIN AND BETWEEN COUNTRIES	SUBSIDIARITY TEST
Gross national income (GNI)	Yes	Yes	Yes	In principle equal to the marginal cost of public funds in the country raising its contribution	Desired effects; Increasing transparency and updating contributions as countries catch up and become donor countries	Yes, a more binding solution would reduce free-riding on delivering on SDG in EMDC for donor countries

As a revenue source, GNI-based own resources are the only model for financing the SDGs that has been successfully tested for supranational tasks. The fact that GNI-based own resources have become a kind of “silent champion” of EU finances is due to their straightforward, uncontroversial nature. It is difficult to be against GNI. Indeed, all six criteria would support using GNI as a direct tax base for SDG contributions. It is already internationally agreed upon as a fair basis for financing the SDGs for development purposes. Moreover, it is already calculated in an agreed manner and it is easy to communicate. Importantly, donor countries can choose for themselves which domestic tool(s) to use to finance their contributions.

For the GNI target to work more effectively, several adjustments are needed. First, there should be a consistent definition of which countries are committed to the principle. A sliding scale with higher targets for the countries with the highest GNI per capita ratios could potentially be introduced. This would lead to both a larger group of countries contributing automatically as they attain higher relative income levels and also to lower starting levels.⁸ Second, a more automatic contribution principle is required. The problem with the 0.7% target is that it cannot be enforced effectively and therefore has on average never exceeded 0.5% for the countries monitored by the OECD DAC committee. For 2023, the OECD estimated that total revenues amounted to \$224 billion or 0.37% of combined GNI of the DAC countries.⁹

TAXING EMISSIONS FROM ENERGY USE

OECD work shows that explicit or implicit carbon pricing is largely concentrated on road transport, followed by taxes on domestic heating and electricity production, while

manufacturing and international transport face zero or very low effective carbon pricing. All in all, the average global CO2 tax may be as low as \$6 per ton.¹⁰

We, therefore, focus on emissions from aviation, shipping, plus other energy intensive industries (e.g., steel, aluminum, cement, fertilizers). These industries are hard to decarbonize, globally-oriented and account for roughly 20% of GHG global emissions. Even in a radical decarbonization scenario in which net zero is achieved by 2050, emissions from these sectors will remain high for decades. These industries are characterized by long-lived assets that are only slowly being replaced with lower carbon intensity technologies. For shipping and aviation, emissions may only be down by around 10% by 2040 compared to current levels, with somewhat sharper reductions for emissions from the global steel and cement industry (see Figure 3). While OECD countries account for the bulk of emissions for aviation and shipping, China and India are driving global emissions from cement and steel.

Precisely because these industries are engaged in global activities with a high risk of leakage,¹¹ effective rates of CO2 taxes are rather low in most jurisdictions and global efforts to co-ordinate joint mechanisms for mitigation are proving challenging, as also demonstrated by the Climate Club initiative.¹² Yet, it is arguably among the most promising new financing mechanisms for two reasons. First, it could both provide sizeable and stable revenues for decades to support the relevant SDG goals, notably by focusing on mitigation as well adaptation efforts across the globe. Second, it can contribute to reducing emissions in the sectors that are the hardest to decarbonize through national or regional initiatives alone. Indeed, a coordinated approach to carbon pricing in these industries that reserves the ma-

8 A case for a much larger group of countries contributing to the financing of SDGs goal is provided in CGD 2023. The paper provides alternative models for how this can take place, taking into account both historical emissions and GDP-per-capita factors.

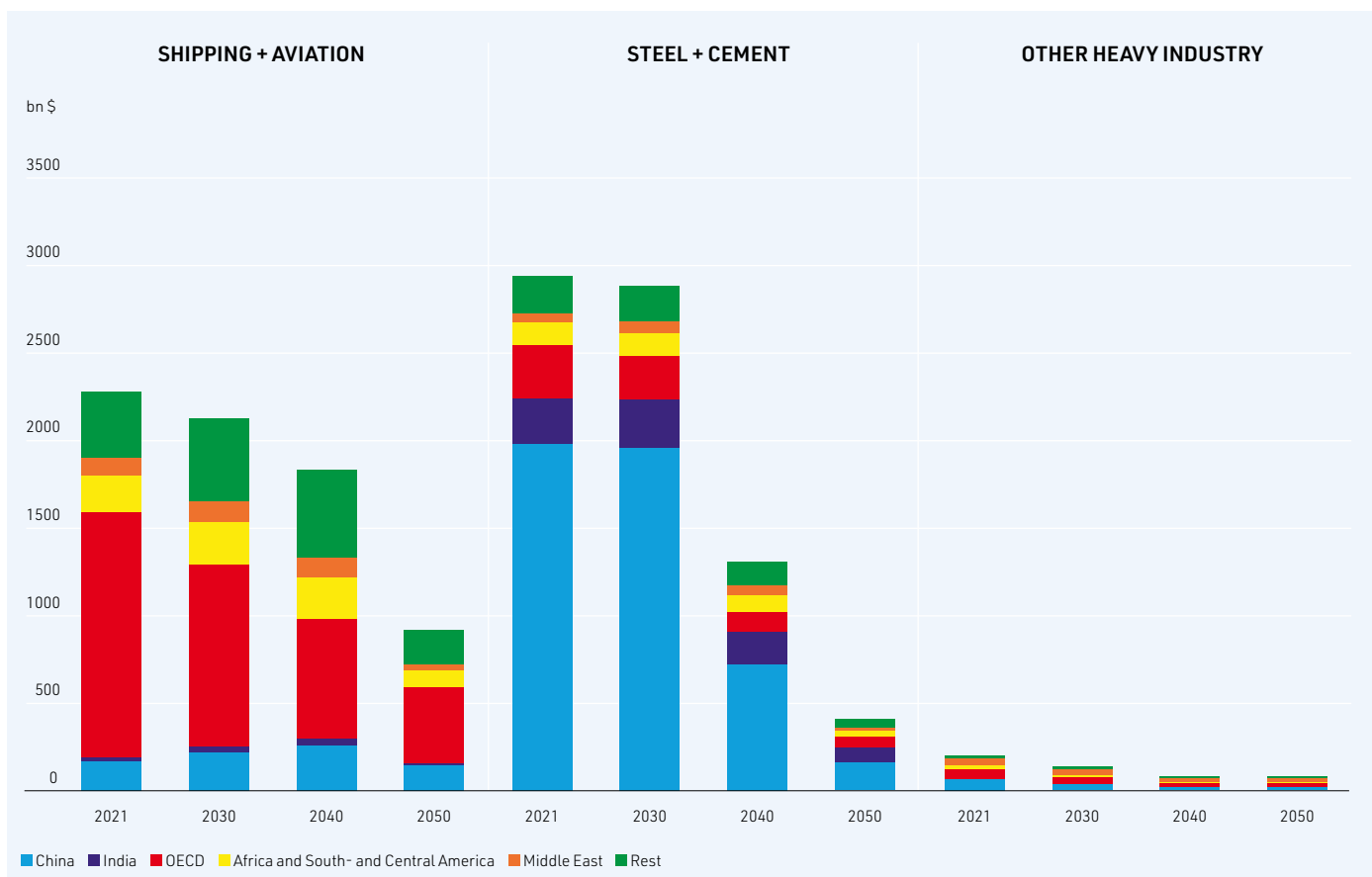
9 OECD, 2024a

10 See Rølmer Vejgaard et al., 2023, which also provides a brief presentation of the state of explicit and implicit carbon pricing globally drawing on OECD work.

11 Leakage means moving the activity leading to emissions to jurisdictions with lower emissions taxes, leading to potential distortions of markets and undermining the intended effect of the emission tax, which is to reduce emissions globally.

12 The importance of the steel and cement industry is also reflected in the work programme for the Climate Club in 2024 that focuses on the steel and cement industry. Currently, the work of the Climate Club focuses primarily on measuring carbon intensity across industries. Yet, it is by nature related to the functioning of carbon pricing mechanisms covering the industries in scope such as the EU Emission Trading System (ETS). The so-called EU Carbon Border Adjustment Mechanism (CBAM) is directly linked to differences in carbon prices between those prevailing in the EU and the carbon prices prevailing in countries from which the EU imports. The CBAM mechanisms and its linkage with climate policy and finance is also discussed in Næss-Schmidt 2024.

FIGURE 3. EMISSIONS FROM LONG DISTANCE TRANSPORT AND ENERGY INTENSIVE INDUSTRIES, 2022-2050 IN AN NET-ZERO EMISSION (NZE) SCENARIO.



Source: The emission trajectories are based on the global energy model called "Intersect" developed by Bain and Copenhagen Economics. The model has been calibrated to be highly consistent with outcomes from IEAs Energy Outlooks produced on a yearly basis. See the Annex for further details about the model and its consistency with other models, including how different policy scenarios affect emissions at the detailed industry level and the resulting carbon prices.

majority of revenues for SDG goals in EMDCs might be key to dealing with these industries.¹³ Moreover, the net welfare distortions from introducing carbon taxes for these activities are negative; the welfare costs of the emissions from these sectors exceed the economic distortions following from higher consumer prices. The emissions from these industries are well identified and the number of actors is relatively low due to high levels of consolidation, thus reducing compliance costs. This is notably the case for taxing emissions from aviation and shipping. Hence, taxing emissions from these sectors meets our criteria as shown in Table 3.

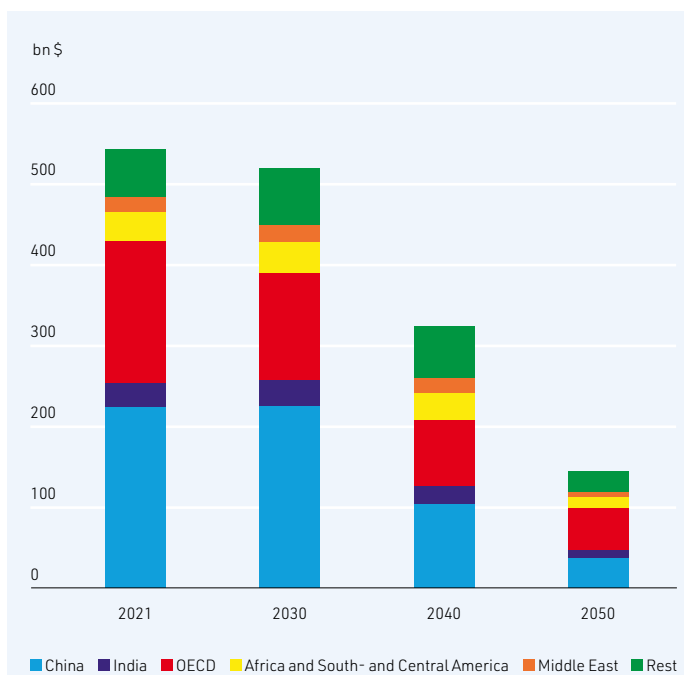
A carbon tax of \$100 per ton imposed on the shipping, aviation and key heavy industries could provide substantial revenues over the coming decades even in a net-zero emission (NZE) scenario where these industries are also gradually being decarbonized. Annual levels could exceed \$500 and \$300 billion in 2030 and 2040, respectively (cf. Figure 4).¹⁴ To put this number in perspective, the total official assistance provided by DAC countries reached above \$234 billion in 2023. This level of tax on emissions – \$100 per ton of emission – is de facto below what is assumed in key NZE scenarios.¹⁵ Revenues will be higher in less optimistic scenarios and notably in the hard-to-decarbonize industries that require more costly mitigation tools.

13 See for instance Næss-Schmidt 2024, which examines how attempts to prevent carbon leakage can naturally be linked to wider climate policy and finance goals.
 14 The idea of taxing emissions from shipping is discussed for instance in Merk 2022. The proposed tax levels are typically in the range of \$50 to \$150 per ton by 2030 and gross revenues raised in the range of \$40 to \$140 billion per year by 2030. Carbon pricing of emissions from aviation has also been spearheaded by the inclusion of domestic air travel, followed by non-domestic air travel, in the ETS system of the EU.
 15 In IEA assessments, NZE marginal taxes on carbon emissions exceed \$100 per ton in all regions. See IEA 2023.

TABLE 3. EVALUATION OF CLIMATE-RELATED TAX OPTIONS

SELECTION CRITERIA	EASY TO CALCULATE, COLLECT AND ADMINISTER	EASY TO COMMUNICATE	STABLE, PREDICTABLE, AND SUFFICIENT REVENUES	EFFECT ON CONSUMER WELFARE/ ECONOMIC DISTORTIONS	DIRECT DISTRIBUTIONAL EFFECTS WITHIN AND BETWEEN COUNTRIES	SUBSIDIARITY TEST
Taxes on aviation and shipping	Yes	Yes	Yes. Present taxes close to zero globally and rapidly rising tax base in all scenarios	Rise in taxes results in positive effects on net consumer welfare	Limited effects within countries dependent on allocation keys for revenues	Yes
Taxes on heavy industries and energy production	Yes	Yes	Marginal increase in tax base but also low starting point	Rise in taxes results in positive effects on net consumer welfare	Limited effects within countries dependent on allocation keys for revenues	Yes
Additional carbon taxes on mainly 'closed sector' industries	Varying, depending on country	Unclear	Higher in the EU Concentrated on road transport globally,	Unclear	Some regressive effects within countries	Limited

FIGURE 4. POTENTIAL GLOBAL REVENUES FROM A CARBON PRICE OF \$100 ON AVIATION, SHIPPING AND HEAVY INDUSTRY IN KEY REGIONS, IEA NZE SCENARIO, 2030-2050



Source: The calculations are based on the emission trajectories presented in Figure 3.

Imposing equal carbon prices on emissions across the globe might seem to contradict the accepted principle of burden sharing in international climate negotiations. Advanced economies with higher per capita incomes and with a larger share of historical emissions are expected to deliver deeper and earlier cuts to emissions. To achieve a global net-zero emissions scenario, carbon

prices in advanced countries should be higher. Standard policy scenarios developed by the IEA and others support this conclusion.

However, a uniform tax of \$100 per ton on these sectors can be seen as fully consistent with burden sharing for several reasons. First, significant inequality in carbon pricing for sectors with substantial international trading will create trade conflicts, as made clear in discussions of the EU’s Emission Trading System (ETS) and the Carbon Border Adjustment Mechanism (CBAM) instrument adopted to reduce inbound carbon leakage in the EU. Second, agreement on more equal de facto carbon pricing for such sectors may also create better conditions for emission trading by moving the marginal abatement efforts to countries with the lowest marginal abatement costs. Both advanced economies and EMDCs will benefit from such trading.¹⁶ Third, equal carbon prices in designated to trade-exposed sectors can easily co-exist with larger variations in carbon pricing as the majority of carbon-emitting activities are not exposed to carbon leakage. An agreement could also be made to recycle potential CBAM revenues resulting from imports from EMDCs back to EMDCs.

The case for using emissions from the power sector as a tool to finance SDGs is more mixed. In the first instance, electricity is less “transportable” than the difficult-to-carbonize sectors above, and hence less subject to leakage. This difference is also the driver behind the emergence of still more de facto carbon pricing of the electricity sector in many countries and regions across the globe. Finally, the reality is that the share of coal and gas in electricity generation is declining on a global scale, driven both by the policies discussed above and the fact that solar and wind

16 See for example the economics of emissions trading allowed under article 6 of the Paris agreement as presented in IETA 2023 and Naess-Schmidt 2024 which explicitly discusses the link between CBAM, burden sharing principles and climate finance.

power are now the cheapest source of electricity generation in many locations around the world. In other words, international co-operation as a precondition for introducing additional global carbon taxes on the power sector is limited beyond the regional level. With carbon pricing already in place, additional taxes may not deliver much in terms of cost-effective mitigation, while the emission base is also set to decline, notably in developed countries.

We find the case for using additional taxes on economic activities such as road transportation and heating of buildings to be even weaker. These are sectors where carbon pricing is already well established in many developed countries and their domestically oriented purposes pose low risk of leakage.

TAXING FINANCIAL OR DIGITAL SERVICES

The need for new tools to tax the financial sector was widely discussed after the 2008 economic recession that triggered a major overhaul of financial sector regulation. The focus has been on proposals to tax financial transactions (FTT) as well as on the merits of introducing a value added tax (VAT) on the financial industries given that most of their activities are currently VAT exempt.

The main argument for an FTT is that the vast expansion in the volume of financial transactions has been driven mainly by dramatic reductions in the cost of trading financial instruments. Yet, while the volume of trading has increased, it arguably has not always improved the real liquidity of securities and automated trading systems could increase rather than reduce price volatility in exchange markets. Therefore, a small tax on transactions would not significantly reduce economic welfare, but potentially raise very large revenues even with a modest tax rate: 0.1% on the trading of stocks and bonds instruments and 0.01% on transactions of derivatives could bring in \$327 billion or 0.43% of global GDP.¹⁷

Objections against the tax fall into three main areas:

Efficiency: Concerns about excessive trading in securities could be better addressed through targeted reforms of financial markets and functioning of exchanges.

Compliance: In reality, it is very difficult to construct a workable system for taxing financial transactions without introducing a wide range of new distortions into the functioning of the financial system.

Leakage: Financial systems are notoriously leaky, implying that national or even large regional FTT regimes run the risk of driving trade to lower tax jurisdictions. The development of highly automated, IT-supported trading systems has triggered the expansion of trading and also allows for trading to be easily moved to other trading locations when transaction costs change by even small amounts. Consequently, an FTT would only be effective if it applies globally, which would be difficult to achieve.

Hence, there are both pros and cons in the use of an FTT to finance SDGs. Arguably, a very small tax rate could raise substantial revenues with limited negative welfare costs. However, its implementation would require international cooperation to cover the key global financial centers. Cons are also notably the sheer scale of complexity, the fact that even small taxes lead to very substantial, but difficult to predict decreases in the tax base and that very substantial global support would be required to avoid leakage. The fact that the legislation would need to be very complex and require constant updates to stay viable would make effective global co-ordination challenging.

The pros and cons for a VAT on financial services are entirely different. The fact that VAT in many jurisdictions accounts for a substantial part of total tax revenues but exempts most financial services creates significant distortions. In addition to the loss of revenue, this tax exemption inflates the costs of financing for normal businesses that are subject to VAT, while providing an unwarranted benefit to consumers and VAT-exempt activities. Historically, progress in imposing VAT on financial services has been hampered by a lack of workable models for bringing the financial system within the scope of a VAT system. Most recently, however, the Brazilian government has decided to move forward with a simplified VAT system for the financial sector.¹⁸

In the context of our six criteria, there are both pros and cons for using VAT on financial services as a revenue source to finance SDGs. On the pro side, with the simplified VAT model, revenues are likely to be stable and predictable, leading to a significant reduction in economic distortions, notably a drop in financing costs for SMEs in particular. Regarding compliance, it is arguably also more complicated to continue not to have a VAT on financial services than to implement it. These straightforward advantages should render the tax reform easy to communicate. The need for an internationally-coordinated approach is relatively limited: That is generally a good thing, but leaves open whether

¹⁷ See for example the economics of emissions trading allowed under article 6 of the Paris agreement as presented in Edmonds et al., 2023 and Næss-Schmidt, 2024, which explicitly discusses the link between CBAM, burden sharing principles and climate finance.

¹⁸ See Næss-Schmidt et al., 2016, which also explains the distortions created by exempting VAT on financial services and concrete implementation options. At the time of writing, the Brazilian government is in the process of reviewing this model in the context of its decision to bring forward a proposal to introduce VAT to financial services.

TABLE 4. REVENUES ESTIMATES FROM DIFFERENT VERSIONS OF A TAX ON FINANCIAL TRANSACTIONS

TAX	SOURCE	REGIONAL COVERAGE	REVENUES (BN USD)	SHARE OF GDP FOR TARGETED REGION (%)
Financial transaction tax	European Commission (2011)	EU	79	0.5
Securities transaction tax	Pollin et al. (2003)	USA	66-132	0.6-1.2
Currency transaction tax	Schmidt (2007)	USA GB EU JPN	28 12 6 5	0.1-0.5
Financial transaction tax	Pekarov and Schratzenstaller (2019)	Global	327 (baseline scenario)	0.4
VAT on financial services	Næss-Schmidt et al. (2016)	Sweden	2	0.3

Source: Pekarov and Schratzenstaller (2019) provide own estimates and an overview of earlier studies.

VAT on financial services is a natural component in the revenue base for financing SDGs. Arguably, it is more logical as a tool for domestic governments to finance higher direct contributions to SDGs as discussed below.

Taxation of cryptocurrencies could also potentially generate additional revenues to finance SDGs. However, it would be a highly volatile source of revenue, as the revenues would largely be linked to the taxation of capital gains from holding cryptocurrencies. This issue is illustrated in a recent IMF working paper, which suggests that the potentially large revenues from the extraordinary increase in the value of cryptocurrencies in the run-up to 2022 will to a very large extent be offset through large losses (Baer et al., 2023). As the value of cryptocurrencies is likely to be highly volatile, it will be difficult to predict trends and establish cryptocurrencies as a reliable source of revenue.

The taxation of digital services has been a main discussion point in the context of the OECD process against Base Erosion and Profit Shifting in corporate taxes (BEPS). It is also an explicit part of the discussion about whether EMDCs receive a fair share of corporate tax revenues. Two main points of contention have been:

Are the global players dominating the provision of digital services exploiting global corporate tax rules to obtain lower effective tax rates?

- Should the countries where the consumers of digital services reside receive a larger share of corporate tax revenues than the countries where the products are developed and produced?

Recent research on the first question suggests that global digital companies already pay effective tax rates comparable to other larger international companies. The second question has been hotly disputed and it is beyond the scope

of this paper to resolve this debate. However, it is important to note that the provisional OECD agreement includes a proposal to allocate more of the revenues of large, profitable, global companies to the countries where the consumers are residing. Essentially, a certain share of total business profits will be allocated as a tax base to consumer countries. For digitally based companies where advertising revenue is a large part of the business model, the allocation model will essentially be based on the number of “clicks”: if a person in country A connects to the internet using a search engine, for example, then country A will receive a share of the pool allocated to consumers based on the relative shares of clicks. It is important to note that share of clicks acts as an allocation parameter for a pool of corporate profits calculated based on overall company accounts and not as a tax base by itself.

The question is whether taxation of digital services could provide an explicit source of revenues for the financing of the SDGs. This could take place by:

1. Using an allocation key that explicitly favors low income countries,
2. Allocating a larger share of global business profits from digital service providers to consumer countries than foreseen by the provisional OECD agreement
3. Using clicks as a direct tax base

Tilting the allocation base towards EMDCs is arguably the most realistic option. Using clicks as a tax base even by itself is likely to lead to nearly insurmountable compliance challenges, effectively ruling out option three. Option 1 is preferable to option 2 for two interrelated reasons: It targets EMDCs directly, whereas option 2 leads to a reallocation between developed countries, which is likely to further complicate the already strained implementation of the OECD agreement.

TABLE 5. EVALUATION OF FINANCIAL AND DIGITAL TAX OPTIONS

SELECTION CRITERIA	EASY TO CALCULATE, COLLECT AND ADMINISTER	EASY TO COMMUNICATE	STABLE, PREDICTABLE, AND SUFFICIENT REVENUES	EFFECT ON CONSUMER WELFARE/ ECONOMIC DISTORTIONS	DIRECT DISTRIBUTIONAL EFFECTS WITHIN AND BETWEEN COUNTRIES	SUBSIDIARITY TEST
Financial transactions tax	No	Arguably yes	Tax increases will disrupt high-frequency trading. Circumvention easy and tax base difficult to define.	None or limited Economics unclear	Limited effect within countries. Effect between countries depends on revenue allocation keys	International co-ordination required
VAT on financial sector	Yes	Arguably yes	Not tried before, highly stable base	Smartest way to handle VAT subsidy	Limited	Less/not depending on international action
Taxes on cryptocurrencies	Yes	Arguably yes	Unclear	Unclear	Unclear	Unclear
Shifting allocation of company profits towards EMDC in OECD proposal	No additional problems	Yes	Arguably overall profits relatively limited and difficult to predict in the future	No additional problems	Positive	Can be attached to an existing and, in principle, already agreed upon OECD reform of corporate taxes

FINAL REFLECTIONS

Our analysis identifies several instruments as interesting sources for external financing for EMDCs to meet the SDGs. The instruments that score highest in this appraisal involve taxing emissions from highly energy intensive industries that typically compete on a global scale. Indeed, a joint approach to taxing emissions from these industries, which account for approximately 20 % of emissions, is essential to reduce the risk of leakage resulting from carbon pricing becoming too divergent. A carbon tax on energy intensive industries could also prove instrumental in creating conditions for emission trading linked to activities in these sectors. In other words, it is not only a new source of finance: It will also help solve an international co-ordination problem. The use of GNI as a financing tool also scores high on all parameters, if a more transparent and differentiated obligation for allocating a share of GNI can be agreed on.

Other instruments such as taxing certain financial and digital service activities should also be reviewed, as even very small levels of tax rates can deliver very substantial revenues. However, the merits with respect to other criteria such as compliance issues and potential economic distortions are less clear.

It is also clear that raising revenues from advanced economies to finance SDGs in EMDCs is only the first step: Identifying mechanisms by which the revenues can be allocated to the “right” countries and projects in recipient countries will be critical. This is a separate issue and beyond the scope of this paper. However, finding solutions to these questions will be a precondition for establishing external public financing.

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ABOUT THE AUTHORS



HELGE SIGURD NÆSS-SCHMIDT

Fellow | Global Solutions Initiative

Helge Sigurd Næss-Schmidt is an applied economist with over 35 years of experience. He has worked for the EU Commission, in the OECD's Economics departments, as head of division at the Danish Ministry of Finance, and as partner and co-owner of Copenhagen Economics (CE), a European consultancy specializing in regulatory economics and competition. His key areas of work are the green transformation of the global energy system, the role of financial markets, macroeconomic policy, and public finance.

MICHAEL THÖNE

Managing Director and CEO | FiFo Institute for Public Economics at the University of Cologne

Dr Michael Thöne, born 1967 in Hannover, is Managing Director of the FiFo Institute for Public Economics at the University of Cologne (FiFo Köln). He studied economics and political science at the University of Cologne and Trinity College, University of Dublin. Michael Thöne has been a scientific policy advisor for over 25 years. In Germany, he has worked with eleven federal ministries, most of the state governments, the Bundestag, state parliaments, municipal associations, and municipalities; internationally, he has worked with the European Parliament, the EU Commission, the OECD, and the WTO, as well as with several governments in the EU and the Global South.



MARGIT SCHRATZENSTALLER-ALTZINGER

Senior Economist | WIFO Vienna

Margit Schratzenstaller is a senior economist at the Austrian Institute of Economic Research (WIFO) specializing in public finance. She was deputy director of WIFO from 2006 to 2008 and 2015 to 2019. Her research interests include the EU budget, greening public finances, wealth taxation, and gender budgeting. She is a member of the Austrian Fiscal Council and the Scientific Advisory Board of the Vienna Climate Council.



CHRISTIAN KASTROP

CEO and Partner | Global Solutions Initiative

Christian Kastrop is CEO and Partner at the Global Solutions Initiative. Previously, he served as State Secretary for Digital Society and Consumer Policy at the German Federal Ministry of Justice and Consumer Protection, where he led initiatives to build an empowering digital society and shaped significant European and German digital regulations. He was the European Director at the Bertelsmann Foundation, focusing on rebuilding Europe, digital transformation, and combatting COVID-19. At the OECD, he served as Director General of the Policy Studies Branch. He is also a Professor of Public Finance at the Free University Berlin and holds a Ph.D. in Economics from Cologne University.

RÉMY A. WEBER

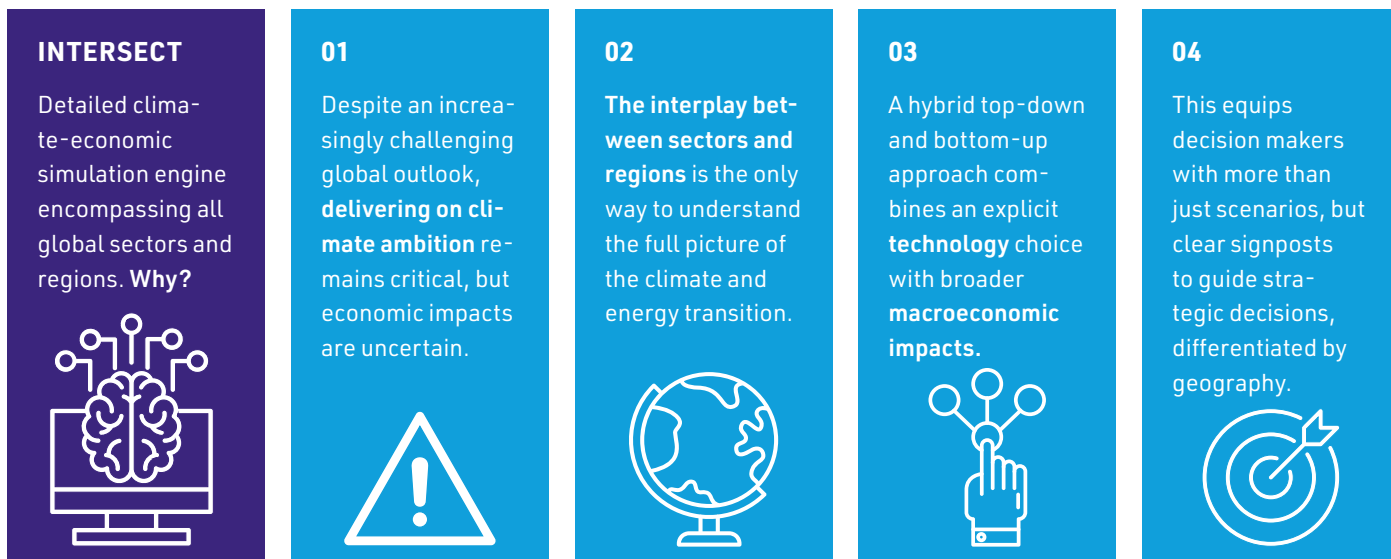
Program Manager | Global Solutions Initiative

Rémy A. Weber works as a Program Manager at the Global Solutions Initiative (GSI) and oversees the areas of global finance as well as trade and geoeconomics. He is also involved with the Think20 community and has contributed policy recommendations to the process. Before joining the GSI, Rémy gathered experience in public consultancy as well as social entrepreneurship and international business development. Rémy holds a Master of International Affairs from the Hertie School, as well as a Bachelor in Political Science from the Free University of Berlin and a Bachelor in Multilingual Communication from the University of Geneva.



ANNEX

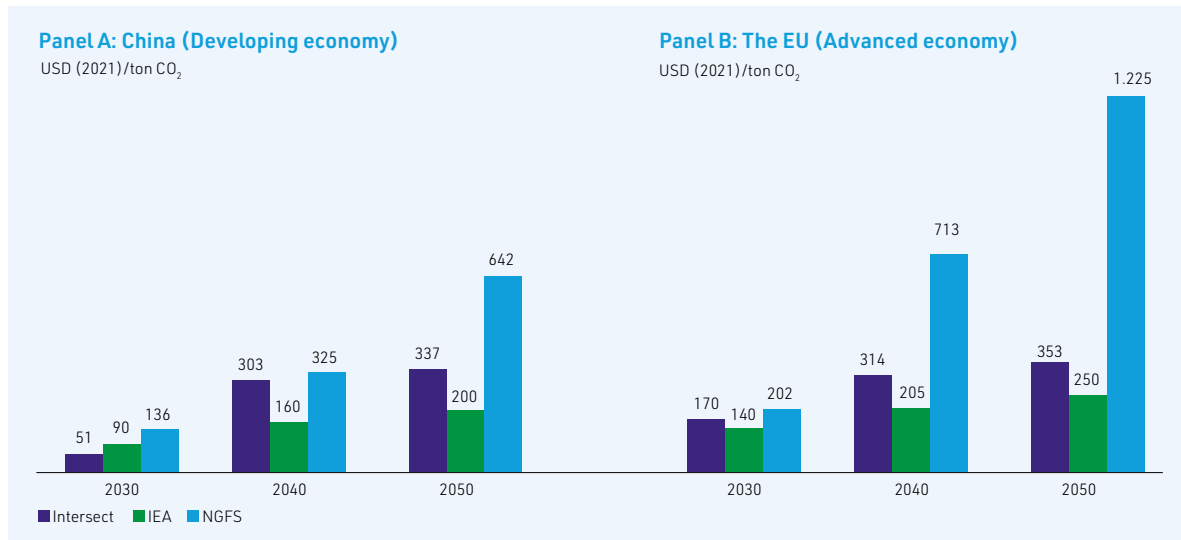
FIGURE 1. STRUCTURE AND COVERAGE OF INTERSECT



INTERSECT IS A CGE MODEL COMBINING ECONOMIC THEORY WITH REAL WORLD DATA ACROSS 30 SECTORS AND 18 REGIONS, ALLOWING FOR SIMULATIONS TOWARDS 2050



FIGURE 2. CARBON PRICES COMPARISON IN NET-ZERO SCENARIO



Sources: IEA World Energy Outlook, 2023, Network for Greening the Financial System (NGFS), 2023, and Rølmer Vejgaard, S., Kronborg, A., & Cipriano, R., 2023, for Intersect calculation

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CONTACT

www.global-solutions-initiative.org

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