



IfTI Working Paper Series

No. 24 - 2021

Export Credits and the Climate Transition

by Andreas Klasen, Roseline Wanjiru, Jenni Henderson and Josh Phillips



EXPORT CREDITS AND THE CLIMATE TRANSITION

ANDREAS KLASSEN, ROSELINE
WANJIRU, JENNI HENDERSON AND
JOSH PHILLIPS

Abstract

The global pathway to net zero emissions by 2050 requires governments to implement and strengthen climate policies as global emissions are reaching record level. Climate finance plays a crucial role in the net zero transition. It refers to local, national or transnational financing seeking to support mitigation and adaptation actions that address climate change. Public export-import banks (EXIMs) and government export credit agencies (ECAs) are highly influential actors for climate action. Although there is no consensus among EXIMs and ECAs on how to define climate finance, 20 institutions assessed in this report give evidence that they significantly support climate action related transactions: EXIM and ECA financing and insurance amounted to EUR 6.7-8.4 billion in 2020, much more than estimated by the Climate Policy Initiative (CPI). However, the results also show that EXIM and ECA lending and insurance activities must rise substantially in order to contribute to the climate finance volumes required by 2030 as estimated by CPI. To retain their current proportion relative to other climate finance flows, assessed institutions would need to increase their climate financing 6.8 times to between EUR 45.3 billion and EUR 57.4 billion by 2030.



Policy Implications

- The global pathway to net zero emissions by 2050 requires governments to implement and strengthen climate policies. This includes EXIM and ECA net zero alignments.
- EXIMs and ECAs must collaborate to develop a common definition and measurement of climate finance, leveraging initiatives and institutions such as GFANZ and E3F.
- EXIMs and ECAs should include innovation and industrial policy objectives in their mandate, fostering technological competence and innovation for green growth.
- In order to reach required climate finance volumes by the end of the decade, assessed EXIMs and ECAs must increase their annual spend to EUR 45.3-57.4 billion by 2030.
- Effective EXIM and ECA climate finance requires multilateral regulations including incentives under the OECD Arrangement such as lower minimum pricing.

Introduction

CO₂ emissions are set to hit record levels in 2023 and there is no sign of peaking. The energy sector, in particular, is a key source of greenhouse gas emissions (GHG) and central to efforts to combat climate change. The sector contributed to approximately three-quarters of GHG in 2020 as most of the energy produced globally comes from fossil fuels. Despite increased climate ambitions and net zero commitments, many governments still intend to raise oil and gas production. Only a moderate decrease in coal production is predicted over the next decade although 195 countries committed to the Paris Agreement in 2015 (IEA, 2021; Kong & Gallagher, 2021; Olivier & Peters, 2020). The agreement responds to the climate change threat by holding the increase in global average temperature to “well below” 2°C in this

century, as well as to pursue efforts to limit the increase to 1.5°C.

As a consequence, the global pathway to net zero emissions by 2050 requires governments to implement and strengthen climate policies. This requirement led to a broad range of policy approaches, strategic directions and concrete government actions in recent years. In November 2021, the 26th UN Climate Change Conference of the Parties in Glasgow (COP26) accelerated action towards the goals of the Paris Agreement. This included pathways to scale up renewable energy use in emerging markets and developing economies (EMDEs) as one of the most relevant mitigation measures to achieve the committed goals. On a national level, various policies and regulations foster clean energy projects; such as Indonesia’s renewable

energy tariff framework, Thailand’s Hybrid Public-private Partnership (PPP) Scheme and Vietnam’s Solar Feed-in-Tariff (FiT) programme (Do et al., 2020).

Climate finance plays a crucial role in the net zero transition. The fundamental role is embedded in Article 2.1(c) of the Paris Agreement, in which parties agreed to making “finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (UNFCCC, 2015). Financial institutions (FIs) are uniquely positioned to drive Paris-aligned systemic decarbonisation. This is due to the fact that FIs influence, enable, and depend on the behaviour of other economic actors through investment and lending activities. Public export-import banks (EXIMs) and government export credit



agencies (ECAs) are highly influential actors for climate action because of official export credits including financing and insurance stimulate international trade in climate-related technologies (Liao, 2021; Caldecott, 2020; Hopewell, 2019; Klasen, 2015).

The radical transformation of the global energy system required to achieve net zero in 2050 depends on a

significant expansion in energy investment and a significant shift in how capital is allocated. The Net-Zero Emissions by 2050 Scenario (NZE) of the International Energy Agency (IEA) comes to the conclusion that annual energy sector investment must jump from USD 2.3 trillion in recent years to USD 5 trillion by 2030 (EUR 4.3 trillion) (IEA, 2021). The Climate Policy Initiative (CPI) shows that global climate

finance flows in 2020 reached USD 640 billion (EUR 550.4 billion), and USD 632 billion on 2019/2020 annual average (Figure 1). The CPI estimates annual climate finance must increase by 588% to USD 4.35 trillion (EUR 3.74 trillion) by 2030 (CPI, 2021). EXIMs and ECAs play a fundamental role in the climate transition, in particular regarding climate change mitigation such as renewable energy financing.

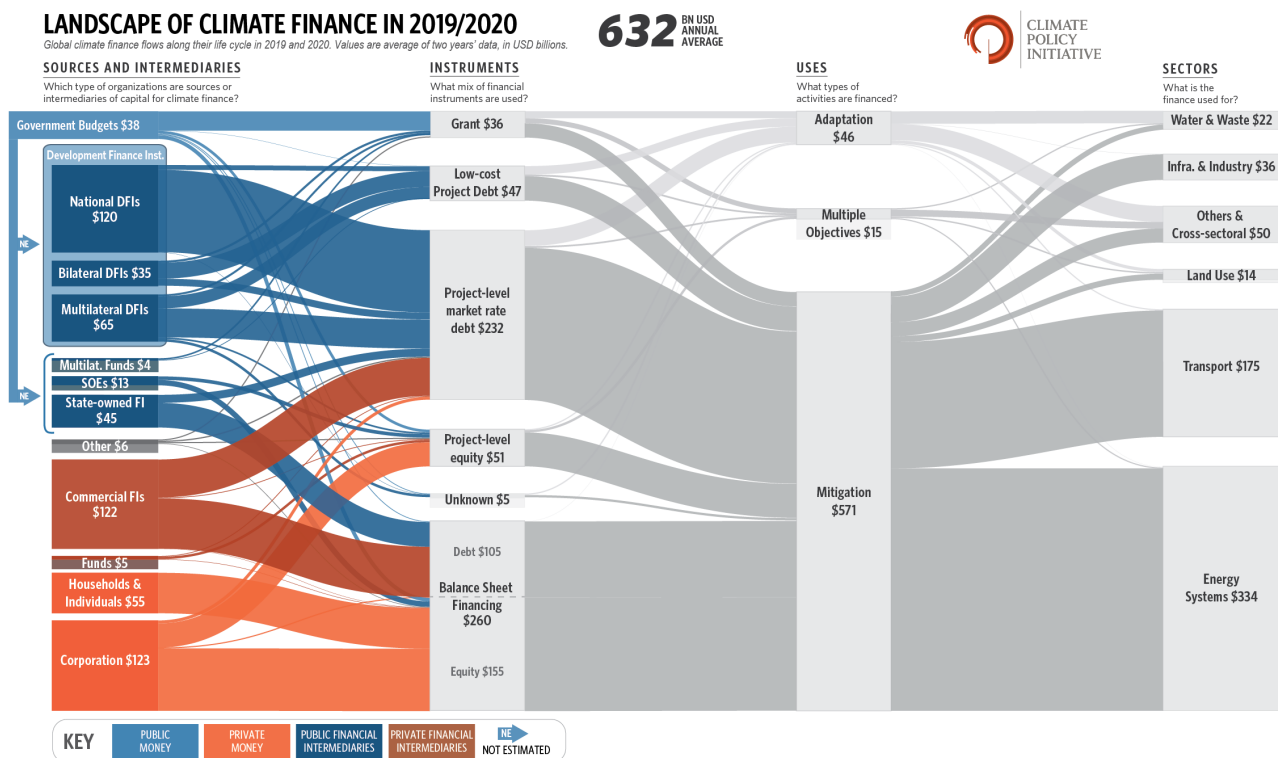


Figure 1: Climate Finance Landscape 2019/2020 (Annual Average). Source: CPI, 2021.



This aim of this paper is to discover the potential contribution of officially supported export credits for the net zero transition. The research tries to answer the question: *'if climate finance must reach EUR 3.74 trillion by 2030 to support the green transition, by how much does EXIM and ECA climate finance need to rise to facilitate the change?* There are several implications both from a theoretical and practical perspective: There is a lack of research about officially supported export credits and the role for net zero. In particular, there is no quantitative study about EXIM and ECA contributions to finance the transformation. Results from this study will

thus fill an existing research gap. Furthermore, there is an impact for policy makers and public export credit institutions, as they might be able to better understand what is required for climate export finance.¹

The paper is divided into five sections. Following this introduction to the study, the second section gives an overview of climate finance and export credits. This includes an overview of approaches to make the net zero transition and a description of the role of EXIMs and ECAs. This is followed by a brief overview of the analytical framework. Section four focuses on the analysis and the

discussion of the results, in particular, what percentage of global spend in climate finance is funded or insured by EXIMs and ECAs. The section describes quantitative research results and extrapolates findings to suggest a pro rata figure indicating the volume that should be targeted on an annual basis. It also includes scenarios and presents EXIM and ECA examples for climate finance. It also presents limitations as well as recommendations for future research. The final section concludes the study, highlighting contributions to knowledge and practical implications.

Climate Finance and Export Credit

Climate action projects promise tremendous opportunities for investors, contractors, operators and suppliers due to gaps in general and the significant requirement for investments in many EMDEs. Domestic public finance for publicly-owned infrastructure, for instance renewable energy or low-carbon transport, comes from different sources such as taxation and general public borrowing. However, infrastructure gaps and substantial financing needs have led to an adoption of a variety of methods to help meet the cost of public investments. Significant amounts of energy financing are provided by the private

sector. In addition, multilateral development banks (MDBs), bilateral development finance institutions (DFIs) and official development assistance (ODA) are highly relevant sources for financing energy projects in EMDEs (Regan, 2018; Santos & Kearney, 2018; Tyson, 2018; Ray, 2015). The same applies for EXIMs and ECAs; gaps in domestic public finance and private financing lead to market failure and necessitate officially supported export credits. Structural problems in the supply of finance are a key challenge. Climate mitigation projects, particularly in EMDEs, are often unattractive due to disadvantageous government

regulations, challenging risk profiles and uncertainty over investment returns (Regan, 2018; Singh, 2017; Wright, 2011).

What is Climate Finance?

Climate finance refers to local, national or transnational financing seeking to support mitigation and adaptation actions that address climate change (UNFCCC, 2021a). A global taxonomy is not defined clearly, but it is widely recognised that climate finance describes funding activities such as equity, loans, guarantees or insurance from public, private or

¹ Financial support from Atradius Dutch State Business for this research is acknowledged.



alternative sources reducing the impact on the environment (Peterson & Skovgaard, 2019; Gupta et al., 2014). In addition to the private sector, important climate finance providers include global funds such as the Green Climate Fund (GCF), MDBs and DFIs such as the World Bank Group and FMO Dutch Development Bank, as well as EXIMs and ECAs including Atradius Dutch State Business (Atradius DSB), the Export-Import Bank of

the United States (US EXIM) or Nippon Export Credit and Investment Insurance (NEXI).

The Role of EXIMs and ECAs in Climate Finance

Historically, EXIMs and ECAs have played an important role in supporting the fossil fuel sector. For instance,

Export Development Canada (EDC) provided an annual average of EUR 6.5 billion in financial support to oil and gas companies between 2012 and 2017. Over the same period, EDC facilitated a total of EUR 4.3 billion in cleantech finance (Shishlov et al., 2020). The example demonstrates that EXIMs and ECAs are key for both exiting the carbon-intensive economy and financing transitional technologies to support a low-carbon future.

In Detail: What are EXIMs and ECAs?

Officially supported export credits are crucial for competitiveness in the global economy. International trade and foreign direct investment (FDI) require sufficient, reliable and affordable sources of financing. Imperfect information or information asymmetries between banks, project developers or exporters and buyers prevent mutually beneficial investment from occurring (Heiland & Yalcin, 2020; Stiglitz & Weiss, 1981). EXIMs and ECAs step into the breach when commercial banks or private insurers do not offer sufficient facilities. This might be because of high country risks, significant buyer risks or long financing tenors. Originally insurers or lenders of last resort, many institutions are now more actively pursuing opportunities following a 'trade

facilitator' or 'trade creator' approach. A distinction can be made between organisations offering financing, which are often referred to as direct lenders or EXIMs, and ECAs acting as insurance or pure cover providers (Klasen, 2020; Broocks & Biesebeck, 2017; Klasen, 2011; Giannurco, 2001).

Export credit and political risk insurance provides incentives to commercial banks to finance transactions while limiting the risk of internationally active companies. FIs can rely on loan repayments because of ECA/EXIM cover rather than depending on the financial capacity of the borrower. This protects the FI from losses, regardless of whether those losses are caused by an action of the

exporter, the foreign buyer or due to political events. Furthermore, EXIMs and ECAs can play an important role in mobilising financing from private-sector sources. For instance, public banks and agencies can help to create synthetic loans to slot in funds alongside commercial lending at commercial interest rates and therefore expand existing lending capacity. The involvement of public banks and agencies demonstrates to commercial lenders and insurers through positive lending or underwriting decisions that financing projects in uncertain political and economic environments can be viable (Oramah, 2020, Kim & Yoo, 2019; Bischoff & Klasen, 2012; Mah & Milner, 2005).



Consequently, EXIMs and ECAs play a critical role within the global trade finance network and are well-positioned to be pivotal regarding climate finance. This includes scaling down support which is not consistent with the 2015 Paris Climate Change Agreement, contribution to climate resilient development and low-carbon financing, and the support of low-carbon transformation related transactions (Bannert, 2020; Bronswijk et al., 2020). For example, government-backed ECAs provide around EUR 2.2 trillion of payment risk protection to exporters, investors and banks together with private credit insurers. This is equivalent to 13% of world cross border trade for goods and services (Berne Union, 2021). EXIMs and ECAs can influence the portfolio of goods produced in the country of origin (particularly in export-led companies) by promoting the export of certain goods, as well as influence the mix of

goods reaching the country or countries of destination (Hale et al., 2021). By moving away from their traditional role as lenders and insurers of last resort supporting mostly manufacturing goods and carbon-intensive industries due to existing demand, while adopting broader mandates and principles of intervention, EXIMs and ECAs have an opportunity to intervene and employ climate-related initiatives to alter their impact.

Looking at EXIM and ECA climate finance, officially supported export credits circle around two main areas: multilateral regulations and national policies. Just as economic policy-making needs to be embedded in a broader analytical framework, climate initiatives work best when included in a comprehensive policy approach. On a multilateral level, the OECD Arrangement comprises several climate-related sector-specific

rules, such as the Renewable Energy, Climate Change Mitigation and Adaptation and Water Projects Sector Understanding. Although it does not cover incentives such as lower minimum pricing for climate finance, the Participants to the OECD Arrangement agreed in 2020 to examine at least the areas of "Net zero energy buildings" and conditions for low emission and high energy efficiency fossil fuel power plants in more detail. Furthermore, several European countries launched an Export Finance for Future (E3F) coalition in 2021 to align export finance with climate objectives. At COP 26 in November 2021, more than 40 countries committed to shift away from coal and 20 countries agreed to ending international public support for the unabated fossil fuel energy sector by the end of 2022 (BBC, 2021; UNFCCC, 2021b).

In Detail: The Export Finance for Future Coalition (E3F)

Several countries launched the E3F coalition in April 2021 to align export finance with climate objectives: Denmark, France, Germany, the Netherlands, Spain, Sweden and the United Kingdom. The E3F initiative includes restrictions on coal support, scaling down support not consistent with the Paris Agreement, increase in financing and insurance for climate-friendly

projects, as well as a review of all climate-related activities. The respective governments also work on improved transparency on climate-related information, moving towards a common approach for measurement and tracking. The launch of the E3F coalition evidences that climate action-related matters are now becoming priority themes for many

governments and their official export finance instruments. However, a commitment to an alignment to net zero is still missing from several members of the coalition and approaches also significantly vary from country to country.



On a national level, the increased interest of governments to create comprehensive climate strategies requires a renewed and strengthened role for EXIMs and ECAs. Most agencies align their strategies with their respective government's policy goals, to provide development or impact returns. As such, strategies are increasingly focused on promoting sectors of strategic importance such as climate finance. For example, EDC became the first ECA to announce a 2050 net zero target in July 2021 and initial steps toward it (EDC, 2021; Hale et al., 2021). UK Export Finance (UKEF) also announced a net zero commitment in September 2021, ensuring that its operations and financial portfolio will contribute net zero emissions by 2050 (UKEF, 2021). At COP26, EKF Denmark's Export Credit Agency

(EKF) set a net-zero emission target and announced that EKF's portfolio will be carbon neutral by 2045 at the latest (EKF, 2021).

Furthermore, several EXIMs and ECAs are working on or are discussing a renewed mandate for innovation and industrial policy, focusing on climate change mitigation due to their mandate and core activities. The scale and scope of the green transformation creates a huge need for innovation and the development of new industries. Financing research, development and innovation (R&D&I), capital expenditure (CAPEX) and working capital are key challenges for many businesses. While firms investing in green innovation are able to perform better due to market differentiation and cost reduction, limited access to

external financing and insufficient internally generated cash flows can lead to a lack of investments. When companies face financing constraints, illiquid balance sheets prevent businesses from undertaking valuable projects when they arise (Bankowska, Ferrando & García, 2020; Almeida, Campello & Weisbach, 2004; Beatty, Riffe & Welch, 1997).

Despite recent increases by EXIMs and ECAs in actual climate financing and announcements regarding net zero ambitions, there remains a gap in the literature quantifying the flow of finances to climate projects. Furthermore, little research has been done to understand how EXIMs and ECAs define climate finance.

Analytical Framework

The paper follows a quantitative research approach with a cross-sectional design, obtaining data from EXIMs and ECAs in different national contexts over the same period of time in order to investigate climate finance characteristics. It is a common approach to measure results of public economic promotion tools as part of evidence-based policy making. Evaluations of public policy instruments are widely undertaken at national, regional and global levels. Tracking of results is a critical component for moving an EXIM or ECA from its current position to a higher maturity

stage, for example improving the climate finance performance.

Data Collection

Primary quantitative data were collected via electronic surveys sent to 68 EXIMs and ECAs worldwide such as Atradius DSB in the Netherlands, Bpifrance, Credit Oman, ECGC in India, EDC in Canada, EKF in Denmark, Euler Hermes in Germany, Eksfin in Norway, Exiar in Russia, Indonesia Eximbank, Kazakh Export in Kazakhstan, NEXI in Japan, Sinasure in China, as well as US EXIM in the

United States.

The survey focussed on two main points: Firstly, respondents were asked about their definition of climate finance, and secondly, respondents were asked to input the total volume of new business for 2018, 2019 and 2020 and make an estimate of how much of that volume was climate related. A blank copy of the survey can be found in Appendix A. 20 responses from EXIMs and ECAs were received in time for inclusion in this paper. The respondents included 15 institutions from member countries of the



Organisation for Economic Co-operation and Development (OECD) including five members of the E3F coalition, as well as five institutions from non-OECD countries.

In addition to the survey, secondary data from publicly available sources such as CPI were examined via desk research. In particular, 72 EXIM and ECA annual reports for the period spanning 2018 to 2020 were analysed for cross-validation of survey results. The analysis specifically sought information on the volume of new business being transacted each year and whether climate finance was mentioned and/or reported for the period.

Data Analysis

Descriptive statistics were used to summarise quantitative data in a more compact form, allowing patterns to be discerned that are not apparent in the raw data. The analysis focuses on the nature, source and

quality of this evidence during the continuous process of survey analysis and secondary data assessment. The approach reviews the current state of climate finance and assesses the level that EXIM and ECA export finance needs to increase to support the green transition.

On receipt of survey results, the data was cleaned which included converting all currency figures to EUR.² Prior to estimating the current total flow of climate finance, each respondent was categorised as “E3F coalition”, “OECD (excluding E3F coalition)” and “non-OECD”. An estimate was made for the lower and upper bound of climate financing for each country category. An estimate was also made on the proportion of which each country category contributed to the global new export credit volume each year. The global volumes were taken from US EXIM’s Annual Competitiveness Report MLT figures (US EXIM, 2021)³ and crossmatched with OECD data, Berne Union data, annual reports,

and survey respondent inputs. Once an estimate was made for the proportion of climate finance (lower and upper bounds) and the total volume of new business according to each country category, an estimate could be made for the total volume of climate finance issued by EXIMs and ECAs globally for 2018 to 2020. This estimate was used to revise upward CPI figures.

The percentage contribution of EXIMs and ECAs to climate finance is estimated based on the revised total climate finance figure for officially supported export credits financed or insured by the respective institutions (and as a result a revised total global climate finance figure). A simple calculation scaling the total climate finance flows to meet the CPI’s EUR 3.74 trillion resulted in the final estimate for the role EXIMs and ECAs have to play in financing the net zero transition.

² Rates taken on 11 November 2021, USD/EUR = 0.86 €

³ Medium and long-term (MLT) credits were adopted for the total volume of new business

because MLT provides a stronger basis for analysis than if short-term (ST) credits are included. Climate finance is usually provided on a medium to long-term basis as the underlying

asset typically returns in that timeframe, therefore, inclusion of ST credits would skew results.



Findings and Analysis

Defining Climate Finance

Hale et al. (2021) mention that a large number of FIs, including the world's largest banks, asset managers, asset owners, and insurers move quickly to adopt net zero targets and create methodologies and approaches for, inter alia, measuring portfolio emissions, setting net zero targets and interim goals, as well as defining sector-specific pathways to net zero and climate finance definitions. As discussed above, the UNFCCC offers a definition of climate finance. The Glasgow Financial Alliance for Net Zero (GFANZ) brings together and defines best practices for transition strategies in the financial sector. GFANZ also further develops work on portfolio alignment metrics for FIs. However, there is no clear consensus among EXIMs and ECAs on what constitutes climate finance or harmonisation on how it is defined and measured. The lack of consistency is evident, for example, in annual reports: Only 25% of the 2020 annual reports assessed in this study contain some form of climate-related definition or

performance metric.

Furthermore, research results found that only 45% of survey respondents answered that the financing and/or insuring of *'transactions related to mitigation and adaptation actions that*

will address climate change' (UNFCCC definition) most aligned to their EXIM or ECA definition of climate finance. There was an even spread of all other responses, as shown in Figure 2

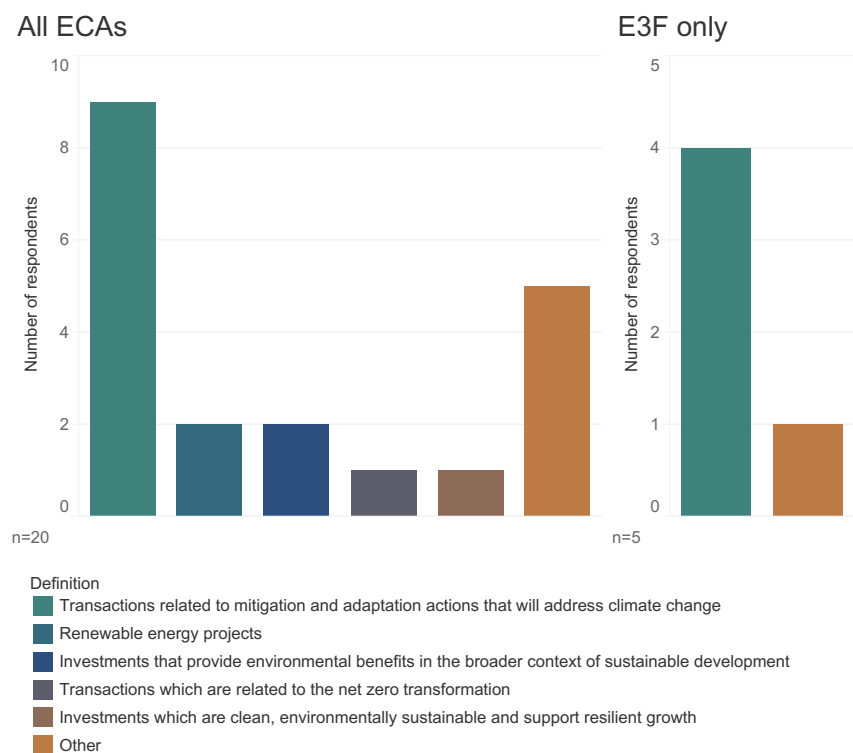


Figure 2: EXIM and ECA Climate Finance Definition. Source: Developed for this Research based on EXIM and ECA data.

Most respondents thus define climate finance as *'transactions related to mitigation and adaptation actions that will address climate change.'* Among E3F coalition members, one member aligned with the same definition and added *'as well as non-climate related*

green transactions'. For respondents in the 'other' category, one has adopted the EU taxonomy while other EXIMs and ECAs are currently refining or developing their definitions.

While there is a clear leader in terms

of definition following the UNFCCC approach, 45% is hardly a consensus. The spread of responses from the remaining 55% of respondents rather indicate that there is work to be done in aligning EXIMs and ECAs to a common definition. It is to be noted,



however, that two respondents indicated that their definition is ‘in development’, signalling that institutions remain engaged in the process of identifying and measuring climate impact, and that process remains early-stage.

Estimating Current Climate Finance Flows

Despite a lack of unity around a common definition, each respondent was able to provide data regarding current climate finance flows. Since all definitions go some way toward supporting the net zero transition, all self-reporting of EXIM and ECA climate finance was accepted as valid for the analysis, following data consistency checks.

CPI data estimates that climate finance flows from ECAs (and EXIMs) constituted USD 1 billion (EUR 0.86 billion) in 2020 (CPI, 2021). If this figure of EUR 0.86 billion from a total of EUR 545.4 billion estimated by CPI is correct, EXIMs and ECAs represented approximately 0.16% of total current climate finance flows in 2020.

Findings from this study indicate that the CPI figures on officially supported export credits seem to underestimate climate finance flows from EXIMs and ECAs. Survey respondents were asked to give a range for their climate finance activities for each year: 2018, 2019 and 2020. Based on these responses, the lower and upper bound estimates of 2020 EXIM and ECA supported climate finance amounts to EUR 6.6 billion and EUR 8.4 billion respectively (Figure 3). This estimate was found by calculating the weighted average climate finance volume for E3F, OECD (excluding E3F coalition) and non-OECD members and applying to the total volume of

2020 EXIM and ECA new business on a pro-rata basis. Given this, the total climate finance flows were revised upward from CPI’s estimate to be EUR 551.2 billion for 2020. Therefore, the current level of official export credits towards climate is estimated at between 1.2% and 1.5% of total climate finance flows. This finding forms the basis of a pro-rated estimate of the required increase in climate financing from EXIMs and ECAs to meet the CPI climate finance requirements and the IEA net zero pathway.⁴

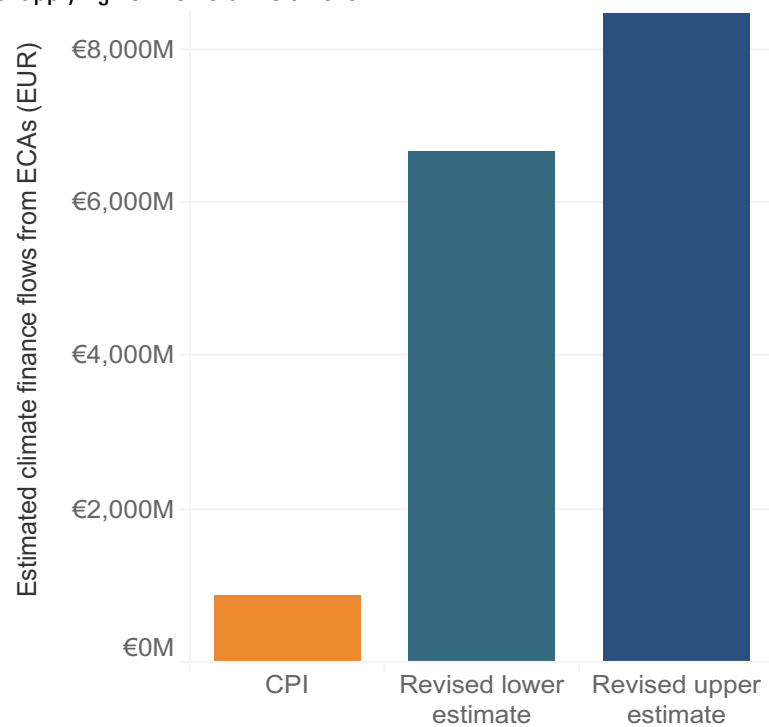


Figure 3: EXIM and ECA Climate Finance 2020 Figures
Source: Developed for this Research based on EXIM and ECA data.

⁴ Although a significant part of EXIM and ECA climate finance activities is not related to lending but insurance where liquidity from commercial sources is used for transactions,

we allocate the total amount reported of activities to EXIMs and ECAs. The reason for this is that EXIMs and ECAs are additional and crowd in commercial financing due to their

mandates and intervention principles. The EXIM and ECA risk mitigation function is crucial and without the support, the respective transaction would not happen.



There is a significant spread of climate financing across EXIMs and ECAs, many report no or very limited climate related lending or insurance, while some respondents reported that more than 30% of activities were climate related. Figure 4 shows the climate finance range per year for each survey respondent (anonymised). Where respondents provided a specific figure, only a single point is shown. Across all respondents, the

median climate finance percentage was one percent in 2018, however, by 2020 the median lifted to six percent, showing a modest increase in supply (Figure 4). The E3F coalition performed marginally better than its comparators with the median finance percentage reaching approximately 10% in 2020 (Figure 5). Figure 5 demonstrates the same ranges as Figure 4, with only E3F countries shown. The box and whisker plot

gives evidence that the coalition members have lifted their performance year on year and are more aligned in 2020 than previous years. While the increase by the E3F coalition may seem modest, it has a large impact on the total EXIM/ECA climate figures because coalition EXIMs and ECAs make up a relatively large proportion of total global export credit flows.

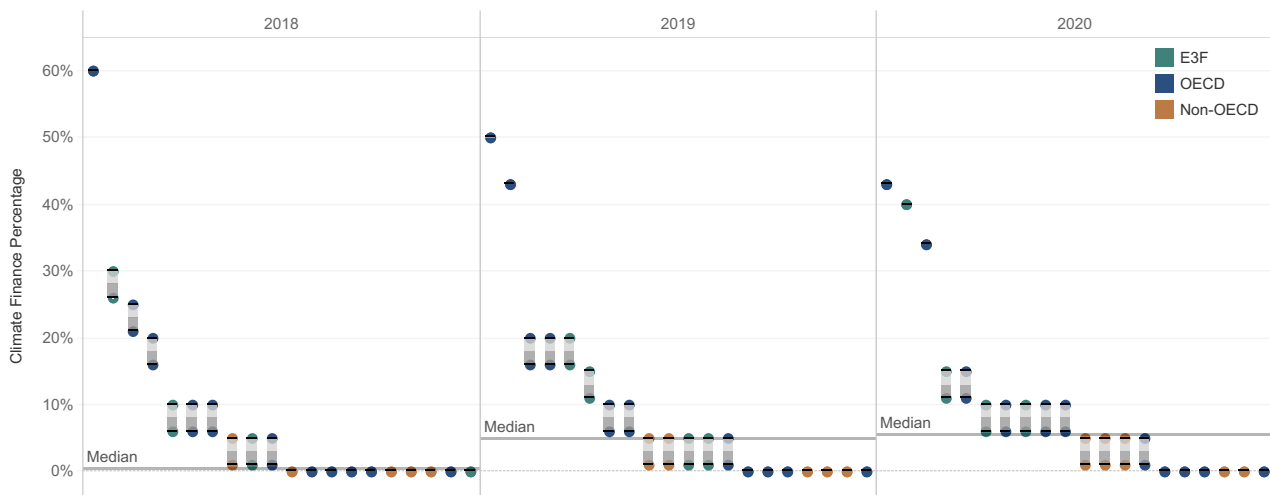


Figure 4: E3F, other OECD and non-OECD Climate Finance Activities (%), 2018-2020). Source: Developed for this Research based on EXIM/ECA data.

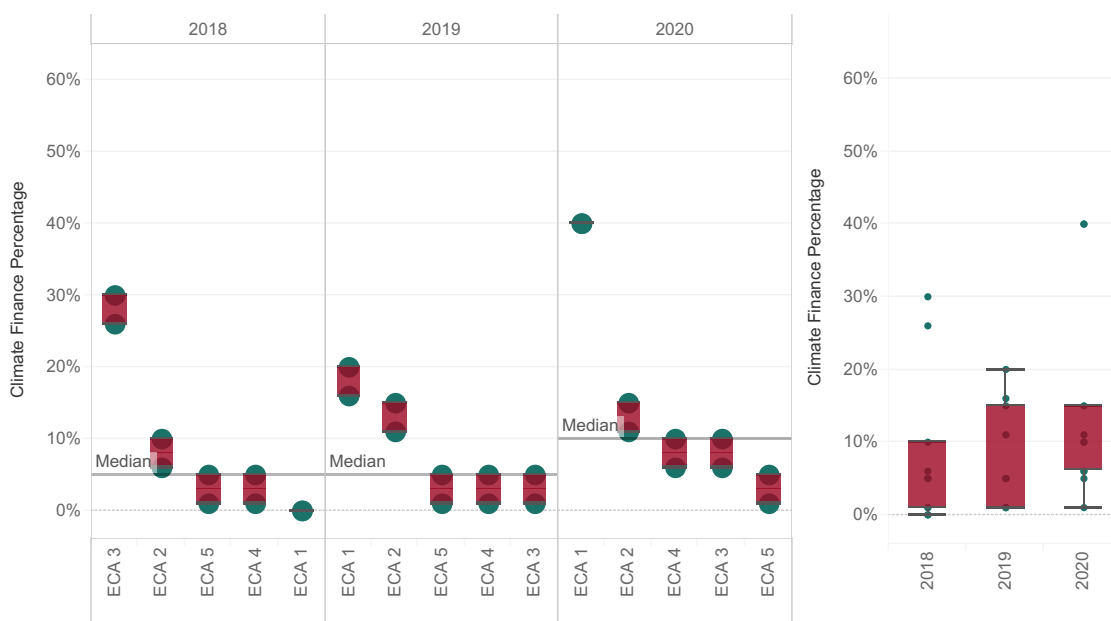


Figure 5: E3F Climate Finance Activities (%), 2018-2020). Source: Developed for this Research based on EXIM and ECA data.



Extrapolating Future Climate Finance Requirements

As described above, the CPI estimations of total climate finance required in 2030 is equivalent to EUR 3.74 trillion. What does this mean for EXIMs and ECAs globally? At a minimum, to retain their current proportion relative to other climate finance flows (i.e., between 1.2% and 1.5% of total

climate finance flows) under the 2030 scenario, EXIMs and ECAs (at least institutions participating in this study) would need to increase their climate financing nearly sevenfold (6.8 times).

Based on the analytical framework outlined in this paper, the total annual spend on climate finance by EXIMs and ECAs thus must rise to between EUR 45.3 billion to EUR 57.4 billion by 2030 (Figure 6). Taking the global

volume of MLT from US EXIM's Annual Competitiveness Report, it is estimated that total new business by EXIMs and ECAs in 2020, that could be directly relevant for climate finance, is equivalent to EUR 69 billion. Therefore, the total annual spend on climate finance by ECAs and EXIMs must rise to represent an estimated 66% to 83% of the current (2020) total global EXIM and ECA spend across all sectors.

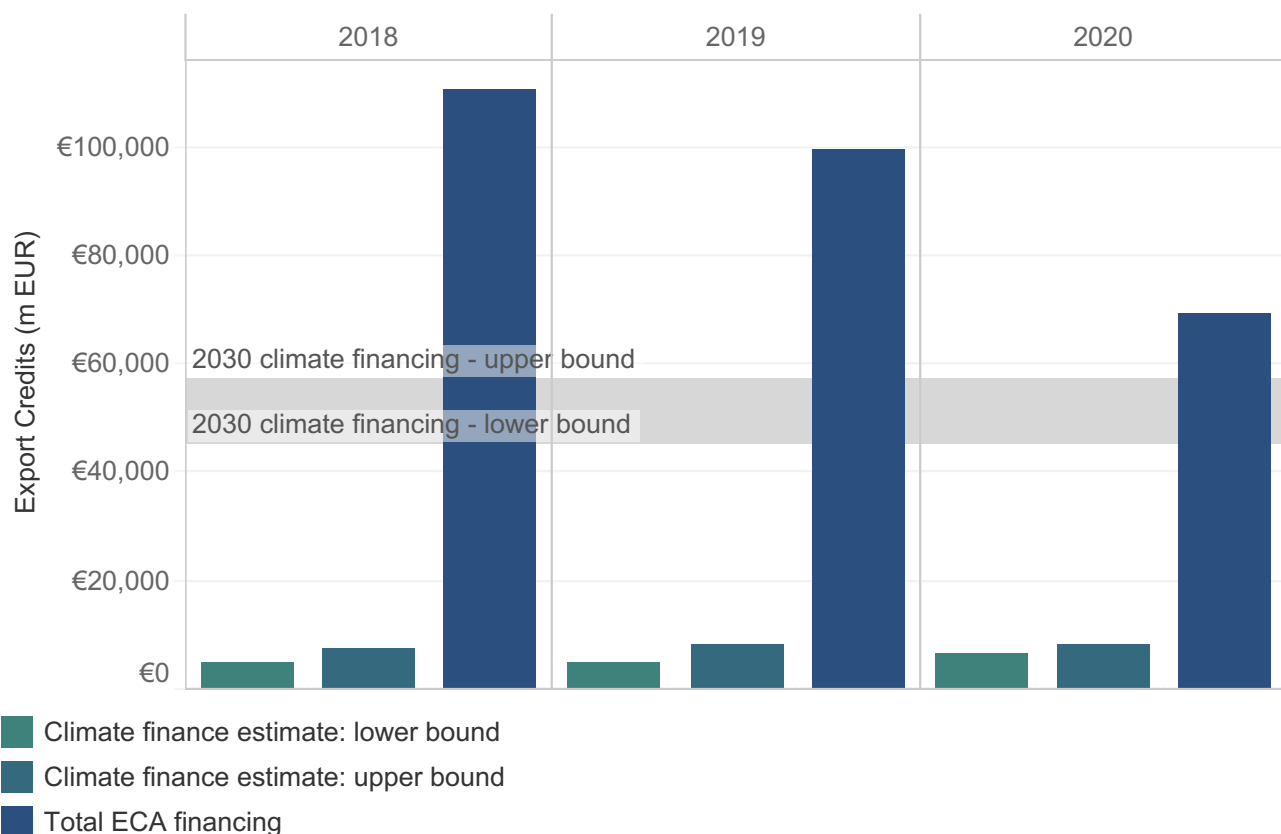


Figure 6: Climate Finance EXIM and ECA Estimations. Source: Developed for this Research based on EXIM and ECA data.



Put another way, if EXIMs and ECAs were meeting their contribution of the CPI and/or IEA targets today, two thirds to four fifths globally of new financing and insurance would be climate finance-related. Given the market dynamics and needs of exporters and importers across different economies and sectors, it would be unrealistic to imagine such a high percentage of total export credits dedicated to climate finance and displacing other sector investments. Hence, to accommodate the increased investment needs for the net zero transition, export finance overall needs to significantly increase. This increase is expected, even as EXIMs and ECAs transition their portfolios away from carbon intensive investments. It should be noted that EXIM and ECA activity fell globally in 2020, if the same figures are used against 2019 activities, the percentage is 46-58%.

Regardless, the large deficit suggests that EXIMs and ECAs need to make extensive internal changes to increase annual climate-related export credits in the period from 2022-2030.

Challenges and Portfolio Implications

For EXIMs and ECAs to reach higher annual climate-related export credits of up to EUR 57.4 billion, the overall capital allocation for export credits will need to substantially increase. It is very unlikely that EXIMs and ECAs will be able to increase their level of climate-related export credits solely through portfolio reallocations; transition takes time and is unlikely to generate the net amount required.

The Climate Policy Initiative suggests that to achieve a climate finance

increase to EUR 3.74 trillion by 2030, large investments will be required in key sectors such as energy systems, industry or transport. EXIMs and ECAs such as SACE in Italy or Oesterreichische Kontrollbank (OeKB) in Austria are already supporting climate-related innovation and technology. However, there will be a need for each institution to consider its own portfolio, government priorities, and opportunities at hand. EXIMs and ECAs should expect to take differentiated paths in scaling up their climate finance activities and each set a strategy according to its own operating environment and mandate. For many this enhanced innovation and technology support for exporters and investors will come hand in hand with divestment or shifting support away from carbon intensive industries.

In Detail: New Climate Finance Instruments for Technology and Innovation

As the United Nations Sustainable Development Goals (SDGs) and climate action become much more important for several EXIMs and ECAs, there is an opportunity to include innovation and industrial policy objectives in their mandate.

For example, Oesterreichische Kontrollbank (OeKB) launched a green investment guarantee in 2019 on behalf of the Austrian government. Within its public ECA mandate, OeKB provides a quasi-guarantee to Austrian exporters investing in CAPEX such as new production lines or new machinery. In addition to a standard product, the Exportinvest Green

cover is available for green investments. Austrian exporters that make targeted investments to reduce harmful impacts on the environment and to make a sustainable contribution to improving the environment can benefit. Investments of at least EUR 2 million from Austrian companies with an export quota of at least 20% are eligible. Up to 100% of companies' investments can be covered with a flexible repayment structure of the underlying loan. The maximum loan tenor is 14 years (OeKB, 2021).

The Italian government created a new instrument in 2020 to support the country's green transition and the

European Green Deal. The SACE Green Guarantee is directed at Italian companies facilitating the transition towards a clean and circular economy, or accelerate the transition towards sustainable and intelligent mobility. Covered projects must aim, for example, at reducing GHG emissions, urban regeneration, digitisation transforming the mobility sector, and investments for a circular economy. Other projects benefiting from the SACE Green Guarantee are, for instance, biofuels for aviation. SACE is able to cover capital amounts of up to EUR 200 million (Mastromarini, Arruzolo & Pompei, 2020; Montella et al., 2020).



A further example is the Netherlands. The government is currently working on an ambitious ECA green agenda including new guarantee instruments. Atradius DSB recently also introduced a broader content policy for green project finance, relaxed

acceptance underwriting criteria for small green transactions, as well as a broader export definition for green transactions. In 2019, the Dutch ECA also implemented its first-ever measurement and reporting methodology on climate-related financing

(Atradius DSB, 2021; Bronswijk et al, 2020). The purpose of the labelling is to map out how “green” the Dutch ECA’s insurance portfolio is.

Limitations and Further Research

There are a number of limitations to this research. First, the research is based on data from a limited number of EXIMs and ECAs. 68 institutions were approached to answer the electronic survey, 20 EXIMs and ECAs responded. Although there is evidence from desk research that most non-respondents have no or only limited climate finance activities, it would have been useful to extend the model. The same applies for time constraints because a longer research period could lead to more details. A second limitation is that it was not possible to

distinguish between financing and insurance activities, as well as support provided for climate change mitigation and climate change adaption. However, due to the broad approach in this research it is acceptable not to use consolidated figures as sources for the quantitative analysis.

Further studies might use the opportunity to undertake research with more institutions, as well as deeper research into feasible pathways and models for scaling up investment for a few archetype EXIMs and ECAs.

This would provide further empirical evidence regarding climate finance activities and respective allocations. Future work might also contain climate finance activities of DFIs in order to provide a comparative study regarding development and export financing. This would allow the addition of relevant hypotheses or building an extensive quantitative model for climate financing. In addition, it would be useful to provide further details on the additionality and catalytic effects of EXIMs and ECAs in climate finance.



Conclusions

This paper discussed the crucial role of public export-import banks and government export credit agencies for climate action. In some important ways, the results of this research extend findings from prior studies. First, it shows that there is no common understanding or definition regarding EXIM and ECA climate finance. Although most respondents define climate finance as ‘transactions related to mitigation and adaptation actions that will address climate change’, there is hardly a consensus. Second, the paper gives evidence that existing estimates for climate finance through officially supported export credits seem to be underestimated. The lower and upper bound estimates of 2020 EXIM and ECA is much higher than CPI figures due to the fact that supported climate finance amounts to EUR 6.6 billion and EUR 8.4 billion respectively. Third, EXIM and ECA activities must rise significantly in order to contribute substantially to required climate finance volumes in 2030. To retain their current proportion relative to other climate finance flows

under the 2030 scenario, EXIMs and ECAs (at least institutions participating in this study) would need to increase their climate financing approximately 6.8 times. Fourth, this research shows that higher annual climate-related export credits have significant authorisation and portfolio challenges. The overall capital allocation for export credits will need to substantially increase even with much higher private finance contributions because, based on past experience, EXIMs and ECAs will always need to catalyse commercial financing.

This research also has important practical implications for a number of parties involved in officially supported export credits. First, EXIMs and ECAs must collaborate to develop a common understanding of climate finance. Together with initiatives like GFANZ or E3F, institutions could create a platform for an aligned definition and common measurement of climate finance activities. Second, a broad commitment to upgrade EXIM and

ECA climate goals and include net zero by 2050 at the latest would create significant opportunities to increase climate financing. The scale and scope of the green transformation creates a huge need for innovation and the development of new industries. EXIMs and ECAs can include innovation and industrial policy objectives in their mandate, securing and regaining technological competence, competitiveness and industrial leadership through green growth. This would allow to work towards the required rise of EXIM and ECA total annual spend on climate finance to EUR 45.3 billion to EUR 57.4 billion by 2030. Third, global organisation like the OECD can help ensure a sector-wide transition that leaves EXIMs and ECAs in a stronger position in a net zero economy. In particular, incentives such as lower minimum pricing, longer repayment periods or reduced advance payment requirements for innovation and technology-driven transactions under the OECD Arrangement could significantly push climate finance.



About the Authors

Dr Andreas Klasen is Professor of International Business and Director of the Institute for Trade and Innovation (IfTI) at Offenburg University, Germany, as well as Visiting Professor at Northumbria University, UK and Honorary Fellow at Durham University, UK. Before, he was a Partner with PwC and served as Managing Director of the official German Export Credit Agency.

Dr Roseline Wanjiru is Associate Professor of International Business and Economic Development at Newcastle Business School, Northumbria University and a Fellow at the Institute for Trade and Innovation (IfTI). She also serves as an expert advisor to the UK Secretary of State for International Trade as a member of the UKEF Export Guarantees Advisory Council.

Jenni Henderson is a Visiting Researcher with the Institute for Trade and Innovation (IfTI) at Offenburg University, Germany. She is also co-founder of August Group, an international investment and development firm, and consults to the International Finance Corporation as a Pacific Program Officer.

Josh Phillips is a Visiting Researcher with the Institute for Trade and Innovation (IfTI) at Offenburg University, Germany. He is also co-founder of August Group, an international investment and development firm.



List of References

- Almeida, H., Campello, M. & Weisbach, M.S. (2004) The Cash Flow Sensitivity of Cash. *The Journal of Finance*. 59(4), 1777-1804.
- Atradius DSB. (2020) *The Green Label*. Available from: https://atradiusdutchstatebusiness.nl/en/documents/the_green_label_eng.pdf [Accessed 1st November 2021].
- Bankowska, K., Ferrando, A. & García, J.A. (2020) The COVID-19 pandemic and access to finance for small and medium-sized enterprises: evidence from survey data. *European Central Bank Economic Bulletin*. 4(2020), 104-125.
- Bannert, F. (2020) Climate Finance, Trade and Innovation Systems. In: Klasen, A. (ed.) *The Handbook of Global Trade Policy*. Oxford, Wiley, pp. 555-577.
- BBC. (2021) *COP26: More than 40 countries pledge to quit coal*. Available from: <https://www.bbc.com/news/science-environment-59159018> [Accessed 21st October 2021].
- Beatty, R., Riffe, S. & Welch, I. (1997) How Firms Make Capital Expenditure Decisions: Financial Signals, Internal Cash Flows, Income Taxes and the Tax Reform Act of 1986. *Review of Quantitative Finance and Accounting*. 9, 227-250.
- Berne Union. (2021) *Credit insurance and its role in supporting global trade*. Available from: <https://www.berneunion.org/Articles/Details/529/How-credit-insurance-supports-the-real-economy> [Accessed 30th October 2021].
- Bischoff, B. & Klasen, A. (2012) Hermesgedeckte Exportfinanzierung. *Recht der Internationalen Wirtschaft*. 11, 769-777.
- Bronswijk, A., Gabriel, R., Hale, T. & Klasen, A. (2020) *Working towards a commitment to net zero*. Berne Union Yearbook. 2020, 153-157. Available from: <https://www.berneunion.org/Publications> [Accessed 15th October 2021].
- Broocks, A. & Biesebroeck, J.V. (2017) The impact of export promotion on export market entry. *Journal of International Economics*. 107(2017), 19-33.
- Caldecott, B. (2020) *Achieving Alignment in Finance*. Available from: <https://www.unepfi.org/news/themes/climate-change/launch-of-climate-thought-leadership-series/> [Accessed 05th November 2021].
- CPI. (2021) *Global Landscape of Climate Finance 2021*. Available from: <https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2021/> [Accessed 15th November 2021].
- Do, T.N., Burke, P.J., Baldwin, K.G.H. & Nguyen, C.T. (2020) Underlying drivers and barriers for solar photovoltaics diffusion: The case of Vietnam. *Energy Policy*. 144. Available from: <https://doi.org/10.1016/j.enpol.2020.111561> [Accessed 3rd November 2021].
- EDC. (2021) *EDC Net Zero 2050*. Available from: <https://www.edc.ca/content/dam/edc/en/non-premium/edc-net-zero-emissions-2050.pdf> [Accessed 2nd November 2021].
- EKF. (2021) *Net zero 2045*. Available from: <https://www.ekf.dk/en/netzero> [Accessed 15th November 2021].
- Gianturco, D.E. (2001) *Export Credit Agencies*. Westport, CT, Quorum.
- Gupta S., Harnisch, J., Barua, D.C., Chingambo, L., Frankel, P., Garrido Vázquez, R.J., Gómez-Echeverri, L., Haïtes, E., Huang, Y., Kopp, R., Lefèvre, B., Machado-Filho, H. & Massetti, E. (2014) Cross-cutting Investment and Finance Issues. In: Edenhofer, O. et al. (eds.) *Climate Change 2014: Mitigation of Climate Change*.



Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, Cambridge University Press.

- Hale, T., Klasen, A., Ebner, N., Krämer, B. & Kantzelis, A. (2021) Towards Net Zero export credit: Current approaches and next steps. *Blavatnik School of Government Working Paper Series*. BSG-WP-2021/042. Available from: <https://www.bsg.ox.ac.uk/research/publications/towards-net-zero-export-credit-current-approaches-and-next-steps> [Accessed 12th November 2021].
- Heiland, I. & Yalcin, E. (2020) Export market risk and the role of state credit guarantees. *International Economics and Policy*. 18, 25-72. Available from: <https://doi.org/10.1007/s10368-020-00466-2> [Accessed 20th October 2021].
- Hopewell, K. (2019) How Rising Powers Create Governance Gaps: The Case of Export Credit and the Environment. *Global Environmental Politics*. 19(1), 34-52. Available from: [doi:10.1162/glep_a_00490](https://doi.org/10.1162/glep_a_00490) [Accessed 20th October 2021].
- IEA. (2021) *Net Zero by 2050 - A Roadmap for the Global Energy Sector*. Available from: https://iea.blob.core.windows.net/assets/20959e2e-7ab8-4f2a-b1c6-4e63387f03a1/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf [Accessed 12th November 2021].
- Kim, S. & Yoo, Y. (2019) Fuelling Development? The Rise of New Development Finance in Korea's Overseas Energy Cooperation with Southeast Asia. *European Journal of Development Research*. 31, 1470-1489.
- Klasen, A. (2011) The Role of Export Credit Agencies in Global Trade. *Global Policy*. 2(2), 220-222.
- Klasen, A. (2015) Introduction to the Special Section: Private Investment and Public Funds for Climate Finance. *Global Policy*. 6(3), 305-307.
- Klasen, A. (2020) Staatliche Finanzierung für innovative Exportunternehmen. In: Müller, A., Graumann, M. & Weiß, H.-J. (eds.) *Innovationen für eine digitale Wirtschaft*. Wiesbaden, Springer Gabler.
- Kong, B. & Gallagher, K.P. (2021) The new coal champion of the world: The political economy of Chinese overseas development finance for coal-fired power plants. *Energy Policy*. 155. Available from: <https://doi.org/10.1016/j.enpol.2021.112334> [Accessed 12th November 2021].
- Liao, J.C. (2021) The Club-based Climate Regime and OECD Negotiations on Restricting Coal-fired Power Export Finance. *Global Policy*. 12(1), 40-50. Available from: <https://onlinelibrary.wiley.com/doi/epdf/10.1111/1758-5899.12894> [Accessed 22nd May 2021].
- Mah, J.S. & Milner, C. (2005) The Japanese Export Insurance Agreements: Promotion or Subsidisation. *World Economy*. 28(2), 231-241.
- Mastromarini, P., Arruzzolo, M. & Pompei, D. (2020) *SACE – New Green Deal*. London, Bird & Bird.
- Montella, C., Isgrò, F., Solaro, M.T. & Massaro, L. (2020) *SACE Green Guarantee*. Available from: <https://www.orrack.com/en/Insights/2020/10/SACE-Green-Guarantee?p=1> [Accessed 3rd November 2021].
- OeKB. (2021) *Exportinvest Green*. Available from: <https://www.oekb.at/export-services/absichern-und-finanzieren-investitionen-und-beteiligungen/finanzieren-von-inlandsinvestitionen-fuer-den-export/exportinvest-green.html> [Accessed 12th November 2021].
- Olivier, J.G.J. & Peters, J.A.H.W. (2020) *Trends in Global CO2 and Total Greenhouse Gas Emissions: 2020 Report*. Available from: https://www.pbl.nl/sites/default/files/downloads/pbl-2020-trends-in-global-co2-and-total-greenhouse-gas-emissions-2020-report_4331.pdf [Accessed 12th November 2021].
- Oramah, B.O. (2020) Export Credit Arrangements in Capital-Scarce Developing Economies. In: Klasen, A. (ed.) *The Handbook of Global Trade Policy*. Oxford, Wiley.
- Peterson, L. & Skovgaard, J. (2019) Bureaucratic politics and the allocation of climate finance. *World Development*. 117, 72-97. Available from:



- <https://doi.org/10.1016/j.worlddev.2018.12.011> [Accessed 12th November 2021].
- Ray, S. (2015) Infrastructure Finance and Financial Development. *ADB Working Paper*. 522, 3-46.
- Regan, M. (2018) Infrastructure Financing Modalities in Asia and the Pacific Region: Strengths and Weaknesses. In: Yoshino, N., Helble, M. & Abidhadjaev, U. (eds.) *Financing Infrastructure in Asia and the Pacific*. Tokyo, Asian Development Bank Institute, pp. 366-400.
- Santos, P.P.D. & Kearney, M. (2018) Multilateral Development Banks' Risk Mitigation Instruments for Infrastructure Investment. *IDB Technical Note*. No. 1358, 5-37.
- Shishlov, I., Weber, A., Stepchuk, I., Darouich, L. & Michaelowa, A. (2020) *External and internal climate change policies for export credit and insurance agencies*. Available from: https://ethz.ch/content/dam/ethz/special-interest/gess/cis/cis-dam/CIS_2020/Working%20paper%20Axel.pdf [Accessed 19th October 2021].
- Singh, H. (2017) *New Models for Financing Infrastructure in Asia*. Santa Monica, CA, Milken Institute.
- Stiglitz, J.E. & Weiss, A. (1981) Credit Rationing in Markets with Imperfect Information. *American Economic Review*. 71(3), 393-410.
- Tyson, J.E. (2018) Private Infrastructure financing in developing countries. *ODI Working Paper*. 536, 3-38.
- UKEF. (2021) *UKEF commits to going carbon neutral by 2050 ahead of COP26*. Available from: <https://www.gov.uk/government/news/ukef-commits-to-going-carbon-neutral-by-2050-ahead-of-cop26> [Accessed 15th November 2021].
- UNFCCC. (2015) *Paris Agreement*. Available from: https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf [Accessed 17th October 2021].
- UNFCCC. (2021a) *Introduction to Climate Finance*. Available from: <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance> [Accessed 17th October 2021].
- UNFCCC. (2021b) *Press Release: End of Coal in Sight at COP26*. Available from: <https://unfccc.int/news/end-of-coal-in-sight-at-cop26> [Accessed 15th November 2021].
- US EXIM. (2021) *Report to the U.S. Congress on Global Export Credit Competition*. Available from: https://www.exim.gov/sites/default/files/reports/competitiveness_reports/2020/EXIM_2020_CompetitivenessReport_Web-Ready_Single%20pages.pdf [Accessed 15th November 2021].
- Wright, C. (2011) Export Credit Agencies and Global Energy: Promoting National Exports in a Changing World. *Global Policy*. 2 (SI), 133-143. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1758-5899.2011.00132.x> [Accessed 22nd September 2021].