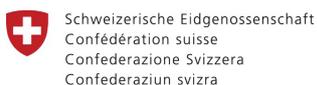


THE GENEVA INTERNATIONAL FINANCE DIALOGUES



Swiss Agency for Development
and Cooperation SDC



South-Originating Green Finance: Exploring the Potential



Simon Zadek and Cassie Flynn

November 2013

ABOUT THE GENEVA INTERNATIONAL FINANCE DIALOGUES

The **Geneva International Finance Dialogues** aim to enhance the scale, quality and timeliness of green finance through policy dialogues based on shared ambitions, experiences, and innovative and practical ideas for action. The Dialogues are organized by the Swiss Agency for International Cooperation (SDC) and the International Institute for Sustainable Development (IISD), in association with the UNEP Finance Initiative (UNEP FI).

ABOUT THE PARTNERS

The **Swiss Agency for Development and Cooperation** is Switzerland's international cooperation agency within the Federal Department of Foreign Affairs. SDC works to reduce poverty by fostering economic self-reliance, contributing to the improvement of production conditions, helping to find solutions to environmental problems, and helping provide better access to education and basic healthcare services. SDC, in collaboration with partners, is responsible for the overall coordination of development activities and cooperation with Eastern Europe, as well as for the humanitarian aid delivered by the Swiss Confederation.

The **International Institute for Sustainable Development** contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, and management of natural and social capital, as well as the enabling role of communications. IISD disseminates knowledge gained through collaborative projects, resulting in more rigorous research, capacity building and better global connections among researchers, practitioners, citizens and policy-makers.

The **United Nations Environment Programme Finance Initiative** is a strategic public-private partnership between the United Nations Environment Programme (UNEP) and approximately 200 financial institutions globally. The initiative supports approaches to anticipate and prevent potential negative impacts on the environment and society. UNEP FI's mission is to bring about systemic change in finance to support a sustainable world.

ABOUT SOUTH-ORIGINATING GREEN FINANCE

South-originating Green Finance is an initiative within the *Geneva International Finance Dialogues*, exploring and developing concrete policy and business actions to leverage the potential of South-originating finance to fund a major part of the green investment needed over the next two decades. This initiative is being implemented by the Dialogue's core partners in association with Bloomberg New Energy Finance and Nedbank.

DISCLAIMER

Unless stated otherwise, the opinions, findings, interpretations and conclusions expressed in the paper are those of the authors. They do not necessarily imply endorsement by any of the partners, participating companies, institutions or organizations involved in the initiative.

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Comments and further discussion are welcome. Please direct correspondence to Simon Zadek (simon@zadek.net) and Cassie Flynn (CassieLFlynn@gmail.com).

REFERENCE

Quotes or other mentions of discussion paper should be referenced as follows: Zadek, S., and C. Flynn (2013) *South-originating Green Finance: Exploring the Potential*, Geneva International Finance Dialogues, Geneva.

DISCUSSION PAPER

This discussion paper, *South-originating Green Finance*, has been authored by Simon Zadek and Cassie Flynn as part of the initiative of the same name. It is intended to stimulate debate, and as such will continue to be revised.

We are particularly grateful for the support and guidance from our core partners: Anton Hilber, Head of Division of Global Program on Climate Change, Switzerland Development Cooperation and Mark Halle, Vice-President, International Institute for Sustainable Development.

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MORE INFORMATION CAN BE OBTAINED FROM

Head of Division Global Programme on Climate Change, Swiss Government: Anton Hilber (anton.hilber@eda.admin.ch)

Vice-President, IISD: Mark Halle (mhalle@iisd.org)

Project Manager: Mahenau Agha (mahenau.gha@gmail.com)

Convenor and author: Simon Zadek (simon@zadek.net)

Senior Researcher and author: Cassie Flynn (CassieLFlynn@gmail.com)

Programme Officer, UNEP-FI: Remco Fischer (remco.fischer@unep.ch)

ABOUT THE AUTHORS

Simon Zadek: Visiting Scholar at the Tsinghua School of Economics and Management; Senior Fellow at the International Institute for Sustainable Development and the Global Green Growth Institute; Distinguished Senior Fellow of the Academy of Business in Society; visiting Senior Fellow at J F Kennedy School of Government, Harvard University (2006-2012); founder and chief executive of AccountAbility (2002-2009); author of award-winning book, *The Civil Corporation*, and Harvard Business Review article *Paths to Corporate Responsibility*. www.zadek.net

Cassie Flynn: A Jane Jacobs Medal winner, Cassie has provided strategic advisory services to UN bodies, national, state and local governments, corporations and civil society groups on climate change, finance and sustainability issues. Cassie is also the founder of ioby, a crowd-resourcing platform for stronger, more sustainable urban neighborhoods. Cassie earned her Master's Degree from Yale University. www.cassieflynn.com

PURPOSE AND PARTNERS

This discussion paper highlights the key role that is being, and could increasingly be, played by South-originating green finance (SGF) in an evolving financial landscape, given the pressing need to scale green investment, and the potential for national and international policies to accelerate its volume and enhance its impact.

This paper, as part of the initiative on *South-originating Green Finance*, is intended to help:

- Crystallize current knowledge, including a sense of future trends based on current data
- Provide a framework for further discussion, including definitions and testable hypotheses
- Offer initial policy reflections and, where possible, recommendations
- Set out a policy-focused research agenda

The *South-originating Green Finance* discussion paper and initiative build on other projects, platforms and mechanisms that have advanced the policy debate and practice about green and climate finance. The on-going design of the Green Climate Fund has provided a particular catalyst, with this initiative emerging directly from the recommendations of the initial *Geneva Finance Dialogue* on the Green Climate Fund and the private sector.⁴ The initiative's partners, the International Institute for Sustainable Development and the Swiss Agency for International Cooperation, in association with Bloomberg New Energy Finance, Nedbank and the UNEP Finance Initiative, have been key in progressing debate, policy design and investment practices.

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SUMMARY

South-originating Green Finance: Exploring the Potential

The initiative, as part of the Geneva International Finance Dialogues, is undertaking a systematic exploration of the key role of South-originating finance to invest in the transition to an inclusive, green economy.

The discussion paper, and the underlying initiative, focus for the first time on identifying the characteristics of South-originating green finance flows, with the particular aim of better understanding how national and international policies can accelerate it and enhance its impact.

Infrastructure investment in a global, sustainable economy requires up to US\$100 trillion between now and 2030. While greening such investment will often cost less over the long-term, there are higher upfront costs, estimated at an additional US\$700 billion annually.¹ Current investment flows, however, are profoundly inadequate, both in terms of their volume and in their continued brown, carbon-intensive features.

Private capital will be essential in securing the scale of green investment required, and is blended often with scarce public finance to leverage more profit-seeking finance. Developed country financial markets remain by far the largest source of private capital, but flows from them to finance developing country green investment fall far short of what is needed, and are restricted by narrow investment criteria intended to protect the owners of capital and intended beneficiaries.

South-originating green finance (SGF) flows, while still obscured by a lack of systematic data and analysis, are large and growing. In 2012, South-originating green investment made up almost half (48.8%) of global renewable energy infrastructure investment, up from just over one third (36.4%) the previous year.² Such growing flows are unevenly spread across geographies and sectors, with China accounting for a major portion, having invested US\$233 billion since 2004 in renewable energy.³ However there is growing evidence that volumes of SGF are on the rise, both domestic and cross-border, in other developing nations, especially emerging economies with sophisticated financial markets such as South Africa, India and Brazil.

Initial research as part of the *South-originating Green Finance Initiative*, including on the ground dialogues with private investors, regulators and other stakeholders, indicate that SGF has important and distinct characteristics that set it apart from finance originating from developed countries. Developing country-based financial institutions, with more on-the-ground knowledge, assess risk differently, and may have different investment appetites than their Northern counterparts. Moreover, Southern-originating finance can deliver, and may be more responsive to the opportunity to create greater development co-benefits, such as job creation and employment.

Based on SGF's unique characteristics, effective policies can be developed to drive South-originating green finance to play an increasingly important role in delivering green and inclusive development. Effective policies that are designed and executed well will provide the necessary market and other signals to unlock the volumes necessary to realize this potential. Domestic policy, including fiscal measures and financial regulation, can set the strategic direction and provide incentives for the private sector to take action, while also building a stronger financial sector more generally. South-South cooperation and associated policies, and international frameworks, including but not restricted to those focused on climate change management, could be more effective in their capacity to promote both private and public, South-originating, green finance.

Realizing the potential of South-originating finance to invest in the transition to a green and inclusive economy requires a deeper understanding of its features, potential and enabling drivers. Going forward, the initiative will explore these aspects at national and international levels, thereby contributing to a more systematic appreciation of the contribution already being made by SGF, the opportunities it offers and how to create the most effective domestic and international policy architecture to accelerate and enhance SGF's volume and impact.

INTRODUCING SOUTH-ORIGINATING GREEN FINANCE

There is widespread agreement of the need to transform economies to become low-emissions, natural resource-light, and resilient.⁵

The science and growing evidence reinforces the importance of climate change as the most significant driver, internationally, for greening economic and policy strategies. Other drivers, however, may be influential in political, popular, economic or financial terms for accelerating the transition to green, including:

- Increasingly visible negative environmental externalities are encouraging all countries to impose and enforce environmental legislation. Air pollution in Northern China, for example, is killing thousands of people annually, well before the predicted underlying health effects such as cancer rates begin to emerge.⁶
- Up until very recently, average commodity prices over the last two decades have risen by about 150%, after nearly a century of declining trends, according to the *McKinsey Resource Revolution Report*. Over the coming decade, reduced demand from China and new resource flows such as shale gas may dampen these increases and cause some temporary decline, but the overall trend, failing policy measures or major technological breakthroughs, is likely to remain upwards.
- The economic recession highlighted the unacceptably high public costs of fossil fuel and, more broadly, natural resource subsidies. The IMF estimates annual post-tax fossil fuel energy subsidies to be about US\$1.9 trillion, or almost 3% of global GDP.⁷
- Green, far from being a constraint on growth, may turn out to underpin the next technology wave that, in combination with changing prices, will drive the next generation of global growth.

Achieving a low-emissions, resilient and inclusive economy requires unlocking new and existing sources of finance that boost economic growth while addressing social and environmental challenges. One such source is private capital, and considerable efforts are being made to attract it into green investment opportunities. Developed country institutional investors still manage the bulk of global private capital, almost US\$95 trillion in 2011 according to the OECD.⁸ Restrictive criteria meant to protect the owners of capital and the intended beneficiaries of institutional investors, such as pensioners and insurance holders, are, however, limiting the flow of these funds into green investments, particularly into developing countries.

Green finance *from* developing countries *to* developing countries, both domestic and cross-border, is growing to become one of the most important sources of finance. This is, in part, because of its growing volumes, absolutely and comparatively. In addition, however, such finance has distinct characteristics:

- *Risks and Costs:* South-based private investors, particularly those investing domestically or within their immediate region, view risks differently from their European and North American counterparts, with lower political risk premiums for example, and often less need to hedge currencies. Both of these aspects of green finance from developed countries are major factors that drive up costs and risk profiling.
- *Co-Benefits:* In addition, deploying locally-sourced capital can deliver benefits over and above the investments themselves through co-benefits such as employment and job creation, and the development of a deeper, more stable and sophisticated financial sector.

South-originating green finance can, therefore, be of considerable importance in delivering the finance needed to secure an inclusive, sustainable economy. Indeed, taken together, these financial flows are already considerable, albeit unequally distributed between developing countries.

Such financial flows have, however, received to date almost no attention, let alone systematic analysis. Their characteristics, even the simple numbers, are unknown. For example, international organizations have yet to begin tracking the funds developing countries are spending annually on tools such as Feed-in Tariffs (FITs). As a result, little is also known about their likely trajectories moving forward, or the particular policy measures that might incentivize this game-changing source of green finance.

CONCEPTS AND DEFINITIONS

South-originating Green Finance: Exploring the Potential highlights a key source of green finance and its associated policy elements that have been largely ignored, or at least undervalued, until now. Doing so effectively, however, requires the clarification of definitions. Generally, there is loose use of language in this field, with terms such as “climate finance,” “green finance,” “green investment” and “sustainable finance,” being used interchangeably, or with implied differences that remain obscure.

This section attempts to offer clarifying definitions, while recognizing that there will be concerns about them given the underlying ambiguities in the classification of financial and investment flows. Recognizing that the proposed definitions do not always match conventional thinking, it is hoped that the terms will serve a useful purpose and, at a minimum, further the debate.

Establishing distinct definitions for four terms, the initiative hopes to contribute to a strengthened analytic foundation for discussion: green investment, green finance, South-originating green finance and climate finance.

Green investment is understood here to refer to the overall capital cost of the transition to a green economy, such as reducing greenhouse gas emissions, increasing resilience, securing food systems, and water, forest, transport and waste management. In practice, the majority of green investment needed is for retrofitting existing structures and building new infrastructure.⁹ The Green Investment report of the Green Growth Action Alliance provides an approximate definition that green investment is closely related to investment approaches such as socially responsible investing, or sustainable, long-term investing.¹⁰ Bloomberg New Energy Finance, for example, a project partner and a primary source of clean energy investment data quoted in the paper, provides a helpful, well-bounded definition that energy infrastructure investment in this space is limited to renewable energy sectors and covers the cost of all equipment, installation and start up, but does not include operational costs.

Green finance is often used interchangeably with green investment. However, in practice, green finance is a wider lens including more than investments as defined by Bloomberg New Energy Finance and others. Most important is that it includes operational costs of green investments not included under the definition of green investment. Most obviously, it would include costs such as project preparation and land acquisition costs, both of which are not just significant but can pose distinct financing challenges.

Beyond this, however, are potentially far larger green finance numbers that need to be counted but that are not currently included in most definitions or calculations of green investment. Consider for example a green investment in renewable energy involving capital costs of, say, US\$1 million. Depending on the circumstances, this investment will probably be paid for over time through a purchasing power agreement that in turn will be financed by electricity consumers through the tariff, or by all citizens through fiscal measures. Over the life of the investment, the total paid-for cost by users or tax payers might amount to, say, US\$4 million (discounted present value), which in many instances will be more than they would have paid for dirty energy, say in this case involving discounted incremental costs of US\$2 million.

Clear from the example is that while the green investment number may be US\$1 million, the green finance number is more, and possibly considerably so. The right number is not the aggregation of these numbers, which would involve double counting. But it does have to include either the overall cost to the consumer or taxpayer of green energy, or at least the incremental cost of moving from dirty to green energy.

The US\$1 million number is therefore clearly an insufficient picture of the cost of the renewable energy to the consumer, the citizen, the government or the country. Indeed, it turns out that each of these “who pays” units of analysis will involve different calculations and resulting green finance numbers. Current debate in the UK over the cost of green energy to the consumer, for example, has concluded that consumers pay a few percentage points extra on their electricity bills to cover the gradual greening of the country’s energy systems. Yet the cost to the country may be far less if the green energy strategy delivers jobs and associated income, and less to government if these secondary economic effects deliver more taxes. Indeed, the net green finance cost may be even less if it generates a competitive green industry, and yet less to the country if one makes pessimistic assumptions about the future direction of oil and gas prices and concerns over energy security.

Measures of green finance, then, depend on the lens applied to who pays, whether gross or net costs are being considered, and whether netting costs takes secondary economic effects into account. The only certainty is that it is not the same as green investment, and that its measurement involves the inclusion of far more financial and economic flows, many of which are likely to be significant.

EXHIBIT 1: DEFINITIONS OF KEY TERMS

For the purposes of this initiative, the following definitions are proposed:

- **Green investment** refers to the overall capital cost of the transition to a green economy, such as reducing greenhouse gas emissions, increasing resilience, securing food systems and managing of water, forest, transport and waste systems.
- **Green finance** represents a wider lens than green investment. It includes capital cost and, unlike green investment, includes operational costs such as project preparation and land acquisition costs.
- **South-originating green finance** is the green finance originating broadly in non-OECD countries, including from both private and public sources, and including both cross-border financial flows and domestic finance.
- **Climate finance** is distinguished here from green finance or investment by referring specifically to the financial flows deemed eligible as being counted as part of the discussions under the UNFCCC process.

South-originating green finance is that part of green finance that is sourced in non-OECD countries. It is intended as a measure of finance from developing country savings, including domestic public finance. While this is the focus of this paper and the underlying initiative, it is recognized that there remain significant conceptual ambiguities, even if there was adequate data, including:

- Whether finance from a developing country-owned financial institution count if the funds had been raised on international capital markets.
- Whether finance from a developing country-owned development finance institution count if the funds were raised through a line of credit from an international development finance institution.

For our purposes, and taking account of considerable data challenges, South-origination is taken here to include private and public finance deployed by a developing country-based institution entirely or predominantly owned or controlled by developing country actors. Going forward, the initiative expects this definition to become more refined.

Climate finance is often used term in policy debate, particularly in the international public finance and climate change negotiations. Confusing matters, the term “climate finance” is currently used interchangeably with “green finance,” with no systematic distinction being noticeable across the literature.

In one sense this is not a cause for alarm; there is no reason there should not be two terms to cover the same concept. However, there is an important sub-dimension of green finance that is not currently tagged with a specific word, namely the financial flows deemed eligible as being counted as part of the discussions under the United Nations Framework Convention (UNFCCC). This lack of definitional rigor leads, for example, for calls for the need to secure US\$100 billion a year by 2020 – as pledged by developed countries in the UNFCCC negotiations – to become confused with the need to secure trillions ever year for green investment, and even more for green finance.

The initiative proposes, therefore, that climate finance refer to funds counted as part of a global climate deal, a number itself subject to policy development. While it is appreciated that this is not the current convention, such a distinction could be extremely useful going forward. For example, it would offer space for a policy debate about how to best secure green finance without confusing it with the climate change finance discussed in the negotiations. In the specific context of this initiative, furthermore, it allows for a serious debate about how best to leverage South-originating green finance without this becoming embroiled in the narrower policy dialogue and debate about climate finance (Exhibit 2).

EXHIBIT 2: SOUTH-ORIGINATING GREEN FINANCE AND CLIMATE CHANGE

Within the UNFCCC and Green Climate Fund (GCF) discussions, attention is rightly focused on how best to mobilize and effectively deploy the US\$100 billion committed by developed countries for mitigation and adaptation. Such flows, however, will only ever be a small part of the overall finance needed. Moreover, SGF cannot be seen to detract from developed country commitments to provide finance, technology and capacity building to developing countries.

As such, there is a disconnect between climate finance as discussed in the negotiating room and the breadth of opportunities to deliver meaningful action on climate change, green growth and development. This gap can either narrowed or widened depending on the international negotiators and, until then, countries continue to identify, deploy and leverage finance according to their national objectives and circumstances. What will be key in the future is the ability for major platforms, such as the Green Climate Fund, to offer opportunities for leveraging more finance in less costly ways to deliver development gains.

GREEN FINANCE LANDSCAPE

The green finance landscape is evolving rapidly, with economic, institutional, regulatory and also technical and scientific developments driving both debate and practice. The challenge is reflected in the scale of the realignment needed in investment and broader financing flows. The Green Growth Action Alliance, a public-private partnership created at the G20 in Mexico in 2012, working with the World Bank, the OECD, the Global Green Growth Institute and the World Economic Forum, and a host of businesses and civil society organizations, has estimated that the net incremental costs of going green to be US\$700 billion per annum to 2030 over and above the US\$5 trillion needed annually to invest in basic infrastructure, as summarized in Exhibit 3.¹¹

The good news is that sustainable finance, something halfway between an industry and a movement, amounted to US\$13.6 trillion of professionally managed funds in 2011, according to the Global Sustainable Finance Alliance, 22% of the assets assessed.¹² Though investment in renewable power and fuels was down 12% from the 2011's record US\$279 billion – due to unstable policy in developed country markets – it was still the second highest ever and 8% up from 2010.¹³ As policies become clearer, investment is expected to continue to rise overall.¹⁴

Also exciting is the considerable innovation through experimentation for effectively blending scarce public funds to leverage private capital. Leverage ratios vary widely, but rough estimates suggest that each tax dollar can be leveraged with tried and tested instruments to yield US\$3-8 in private investment.¹⁵

The bad news is that, despite growing volumes of, and publicly stated commitments to, sustainable finance, the vast bulk of private capital today remains resolutely carbon and natural resource intensive. Even if climate change is on investors' radars – 26% of asset managers, covering in excess of US\$12 trillion of assets under management, reported climate change as being a factor in their investment decisions – institutional investors

continue to be driven by short-term performance metrics.¹⁶ Over the short term, carbon price signals remain weak, and as a result count for little even among progressive asset managers.

Further evidence of this comes from a recent report by Carbon Tracker and the London School of Economics and Political Science's Grantham Research Institute. They found that over the past two years, the carbon intensities of the main London and New York stock exchanges increased by 7% and 37% respectively. Spending on exploration and development of new fossil fuel reserves by the 200 largest listed fossil fuel companies totaled US\$674bn in 2012.¹⁷

Financial market reforms in response to the 2008 crisis provide an opportunity to slow this trend and advance regulatory measures that incentivize or require the greening of finance.¹⁸ The potential of this historically unique opportunity has, to date, not been realized. Reforms must be considered carefully to avoid negative and unintended consequences on the appetite of private investors to go green. Basel III, for example, enacted to reduce the risk of bank failures, has unintentionally increased the cost of portfolio investments in renewables, as pointed out recently by the Institut du Développement Durable et des Relations Internationales.¹⁹

Time, of course, is the real complicating factor. A true transition toward a sustainable economy means a rapid and dramatic transformation of policies and perspectives. It is estimated that 80% of projected global carbon emissions to 2020 are already locked in through the world's current infrastructure base.²⁰ There is a small window of opportunity to implement policies and investments that support sustainable development. Upgrading infrastructure, energy systems and other actions cannot be delayed. The science, and a growing body of related evidence on-the-ground, dictates that the acceleration of green finance flows take place at historically unprecedented rates.

**EXHIBIT 3: ANNUAL INVESTMENTS NEEDED UNDER BUSINESS-AS-USUAL AND LOW-CARBON SCENARIOS
(\$ BILLIONS PER YEAR BETWEEN 2010 AND 2030 - US\$ 2010 EQUIVALENTS)**

Sector	BUSINESS-AS-USUAL SCENARIO INVESTMENT NEEDS		2°C SCENARIO INVESTMENT NEEDS		INCREMENTAL INVESTMENT REQUIRED		Sources
	Cumulative 2010-2030	Annual average	Cumulative 2010-2030	Annual average	Cumulative 2010-2030	Annual average	
Power generation	6,933	347	10,136	507	3,203	160	IEA
Power T&D	5,450	272	5,021	251	-428	-21	IEA
Energy total	12,382	619	15,157	758	2,775	139	
Buildings	7,162	358	13,076	654	5,913	296	IEA
Industry	5,100	255	5,840	292	700	35	IEA
Building & Industrial total	12,262	613	18,916	946	6,613	331	
Road	8,000	400	8,000	400	Unknown	Unknown	OECD
Rail	5,000	250	5,000	250	Unknown	Unknown	OECD
Airports	2,200	120	2,200	120	Unknown	Unknown	OECD
Ports	800	40	800	40	Unknown	Unknown	OECD
Transport vehicles	16,908	845	20,640	1,032	3,732	187	IEA
Transportation total	32,900	1,655	36,640	1,842	3,740	187	
Water	26,000	1,300	26,000	1,300	Unknown	Unknown	OECD
Agriculture	2,600	130	2,600	130	Unknown	Unknown	FAO
Telecommunications	12,000	600	12,000	600	Unknown	Unknown	OECD
Forestry	1,280	64	2,080	104	800	40	UNEP
Total investment	\$100 tr	\$5 tr	\$113 tr	\$6 tr	\$14 tr	\$0.7 tr	

Sources: G2A2 (2013), drawn from OECD (2012, 2007), IEA (2012), FAO (2009), UNEP (2011)

TRENDS OF SOUTH-ORIGINATING GREEN FINANCE

The core, working hypothesis is that South-originating green finance is of growing importance and will play a key role in closing the green financing gap in a timely manner.

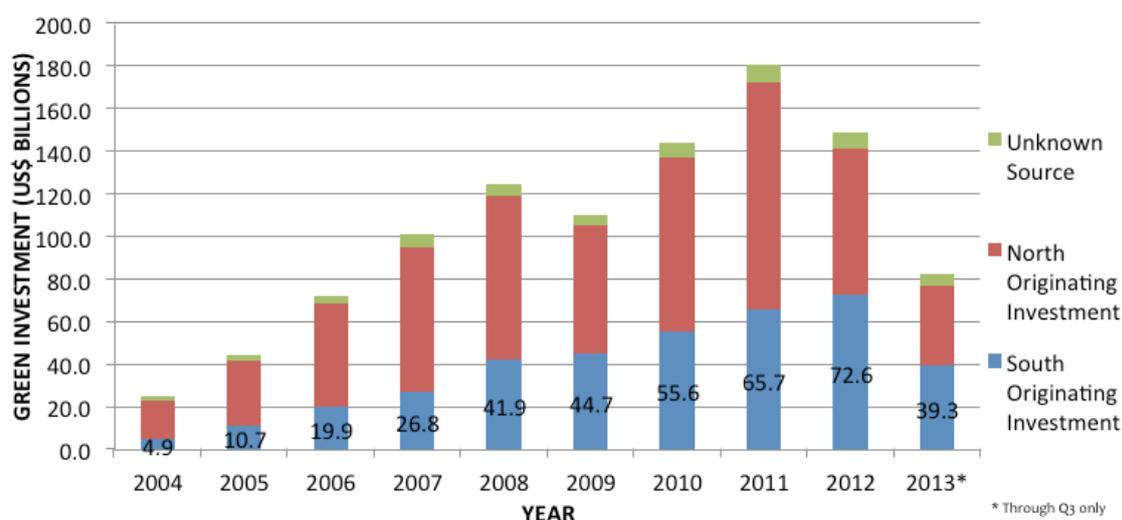
Testing this hypothesis is challenging, not least because of a paucity of relevant data, itself a result of these flows having been ignored almost entirely in analysis or policy debate. Ad hoc data does exist, mainly for investment in clean energy infrastructure, which provides a valuable lower-bound of overall SGF flows that would include additional categories of green finance.²¹ This project benefits from collaboration with Bloomberg New Energy Finance who has provided what is systematically available.

Using renewable energy infrastructure investment as an illustrative case study, SGF is clearly on the rise. Clean energy investment originating from non-OECD countries for both domestic and cross-border uses grew from US\$4.9 billion in 2004 to US\$72.6 billion in 2012.²² The dramatic increase in

absolute numbers is matched by an increase in the share of global investment (Exhibit 4). SGF made up 48.8% of global investment in wind, solar, biofuels, biomass and waste, geothermal, marine and small hydro, an increase of nearly 30% since 2004.²³

This growth signals a shift in momentum where developing countries are seizing opportunities to develop new sectors that contribute to energy security. Major emerging economies in particular are investing a great deal in clean energy, both by using private capital to finance the initial investments, and by allocating significant volumes of tax revenues to finance green incremental costs through feed in tariffs. Not surprisingly, the dominant overall player in the renewable energy investment landscape is China. With US\$233 billion invested in renewable energy since 2004, the country far exceeds investments from the other top countries for SGF, including Brazil, India, Thailand, South Africa and Argentina (Exhibit 5).²⁴ China's investments are largely domestic, and mostly in solar power.²⁵

EXHIBIT 4: SOUTH-ORIGINATING INVESTMENT IN RENEWABLE ENERGY INFRASTRUCTURE AS A PROPORTION OF GLOBAL INVESTMENT, 2004 - Q3 2013 (US \$BILLIONS)



Source: Bloomberg New Energy Finance: Clean Energy Investment Trends 2013

Notable also is that SGF for renewable energy infrastructure investment continued to rise while investment levels by OECD countries declined in 2008 due to the global financial crisis and again in 2012 largely due to policy uncertainties.²⁶ This signals increased flexibility by developing countries to encourage project development, while many developed countries scaled back subsidies due to financial constraints. It also signals increased attractiveness of developing country markets, with rising power demands and falling technology costs. Indeed, in 2012, China topped the US as the largest investor in renewable energy.²⁷ This is the first time this has been achieved by a non-OECD country.

Alongside private capital coming from international capital markets, significant volumes of concessionary debt are being

made available through development finance institutions, both multilateral and regional, and bilateral banks such as the European Investment Bank and Germany's KfW. Yet even in these cases, some of the funds are being channeled through local commercial and development banks, and are guaranteed locally, often by government, effectively placing the risk on domestic balance sheets. Banks such as the China Development Bank and Brazil's Banco Nacional de Desenvolvimento Economico e Social (BNDES) are playing a critical role in channeling this finance (see Exhibit 6). BNDES has enabled two of the top ten Southern-originating renewable energy deals since 2004, including the largest investment made yet, when they secured \$760 million in debt for ETH Bioenergia/Odebrecht Agoindustrial SA to expand five bioethanol and power plants.²⁸

EXHIBIT 5: TOP COUNTRIES FOR SOUTH-ORIGINATING INVESTMENT IN RENEWABLE ENERGY INFRASTRUCTURE, 2004 - Q3, 2013 (US\$ BILLION)

CUMULATIVE INVESTMENT	
China	233.1
Brazil	47.7
India	44.4
Thailand	5.8
South Africa	5.5
Argentina	2.5

Source: Bloomberg New Energy Finance: Clean Energy Investment Trends 2013

EXHIBIT 6: CHANGING THE GAME: CHINA DEVELOPMENT BANK

The China Development Bank (CDB) is one of the world's largest lenders for green projects. In renewable energy alone, the bank made US\$26 billion available for renewable energy in 2012, second only to Germany's KfW. In 2012, it lent to projects in the areas of low-carbon cities, the circular economy initiative, watershed management, sewage treatment, environmental protection, technology upgrading for energy-saving, and renewable resources. The bank's total 2012 outstanding loans to environmental protection and energy efficiency projects stood at US\$139 billion, up 28% from the previous year.

CDB's deals are diverse. It made the world's largest investment in a photovoltaic power project, the Golmud Solar Park, which provided 200 MW of installed capacity. To support water supply in central and western Zhucheng, CBD committed US\$100 million in loans to install water purification equipment. The project, which will have a capacity of 200,000 tons per day of sewage processing capacity and 71 kilometres of sewage pipelines, will address the recurring water shortages in the area.

CDB's portfolio also includes international solar projects. In 2012, CDB provided US\$3 billion in financing to Generadora Eolica Argentina del Sur to install 1.35 GW of Chinese wind turbines in Argentina. The wind projects will supply 4% of Argentina's power once fully operational in 2017.

Sources: UNEP FI: Financing Renewable Energy in Developing Countries, BNEF: Clean Energy Investment Trends and China Development Bank: 2012 Annual Report

The paucity of data and associated analysis is partly explained by the early stages of this growth, and the focus until now on where the bulk of the finance lies, in developed countries. In addition, however, is the studied political focus by developing countries on developed country-originated finance in order to maintain attention on the matter of the responsibility and arising obligations of developed countries to foot the bill for incremental costs.

However, the game-changing nature of SGF – demonstrated by the role of SGF in renewable energy infrastructure investment – cannot be responsibly ignored in the light of the challenges of financing the green transformations needed to avoid or at least minimize very serious social and economic consequences. The significant role that such finance already plays in some countries and increasingly could in many developing countries demands that its potential be better understood and realized.

SOUTH-ORIGINATING GREEN FINANCE IS NOT SIMPLY MORE FINANCE – IT IS DIFFERENT FINANCE

Private finance flows are driven mainly by investors' analysis of risk adjusted financial returns. Much work has been done to assess this logic in the context of green investment requirements, and to determine how best to satisfy this logic, particularly through policy action, fiscal and other incentivizes, improved knowledge and innovative institutional arrangements.

Ignored to date has been the possibility that private investors from the South, when calculating the return on an investment, would use different criteria, or value the evidence differently, from their Northern counterparts. Initial findings from our research provide strong indications that South-based financial institutions will in some circumstances price risk differently from their international, developed country-based counterparts, largely because of their greater familiarity with the on-the-ground financial, political and social realities of developing countries, particularly their domestic context, and also for domestic investment because of their local currency balance sheets, at least in part reducing the need for long-term, often very costly, currency hedging.

Four categories of risk differences are presented below:

- **Project risk:** understanding project risk requires in-depth, on-the-ground knowledge of the context and the actors, as well as the technical features of the project itself. While international investors will often work with local partners to gain this knowledge, being one step removed reduces their confidence in their understanding of the situation, and ability to manage risk if and when something goes wrong.²⁹ Southern finance institutions, with their feet on the ground, can more accurately assess the likelihood of delivery, capabilities of partners and better identify a compelling case for a bankable project.

Moreover, the ability to more accurately identify project risk can influence larger portfolios. Southern institutions, based on their knowledge of potential synergies of projects, can pull together large and small projects to create a viable pipeline rather than stand-alone initiatives, reducing transaction costs, avoiding complications and saving time.³⁰

- **Regulatory risk:** understanding regulatory risks and opportunities, similarly, requires close, on-going proximity to policy makers and regulators.³¹ In many developing countries, policies and regulations about green investment are in flux, either because of the general immaturity of the investment environment or government's fluctuations of political priorities. Southern finance institutions, because

of their relationships with regulators, can identify the right windows and incentives that support stability and reduce risk.

This also helps investors to get a clearer sense for the appropriate tenure for an investment. Understanding the content of a regulation, participating in public comment periods, joining national and regional discussions on a strategy or ruling, helps Southern finance institutions understand how long a window for investment will be open and when, more importantly, it will close.³² Thus they can better evaluate investment timeframes and potentially have a longer-term outlook that is often needed for green investment.

- **Country risk:** political and broader country risks are a major cause of risk premiums raising the cost of investing in developing countries. UNEP FI's study of renewable energy projects in Sub-Saharan Africa concluded that the bulk of the 34 countries analyzed were in the riskiest categories for investment.³³ Local financial institutions also face such risks, but the fact that the bulk of their investment is domestic, and given their more intimate knowledge and better political networks, they are able to price risk, arguably, more objectively.
- **Currency risks:** while some capital deployed by Southern financial institutions might be raised internationally and so denominated in, say, US dollars, a significant portion is likely to be raised locally. As a result, these institutions will not face the same costs of currency hedging, which can constitute a major cost for international investors, particularly those undertaking long-term, financing in countries with volatile currencies.³⁴

Resulting from these and other differences, South-based private investors, particularly when investing domestically or at least "in the neighborhood", will price risk differently, and sometimes lower, than international investors. Of course, this is context specific and varies over time. For example, some South-based private investors will be faced with higher costs of capital exactly because their balance sheets are dominated by local, more volatile, currencies, and might also be impacted by the weak sovereign credit ratings of the countries in which they are based. Furthermore, those instances where lower perceptions of risk do increase South-based financial institutions' appetite for longer-term, green investments, will tend to be limited to parts of the developing world where there are relatively sophisticated financial markets, such as China, Brazil, India and South Africa. Indeed, when taking stock of the top Southern investors in clean energy infrastructure, 9 are from China and 1 from Brazil (Exhibit 8).

EXHIBIT 7: SOUTH-ORIGINATING GREEN FINANCE CONVENING IN SOUTH AFRICA

1st Convening of the South-Originating Green Finance Initiative

2 -3 September 2013 | Johannesburg, South Africa

The first high-level meeting on South-originating Green Finance: Exploring the Potential, was held on 2 – 3 September 2013, in Johannesburg, South Africa. Co-hosted by the Swiss Agency for Development and Cooperation, IISD, Nedbank and UNEP FI, the meeting drew upon the extensive South African-based expertise on finance and its leadership in policy areas such as climate change. The event brought together 30 senior representatives from commercial finance institutions, public policy and development finance institutions and experts based in academic, government and civil society institutions.

The dialogue is the first of a series of meetings to crystallize the current state of thinking on South-originating Green Finance (SGF), explore its characteristics and policy drivers and lay the groundwork for further discussion. The co-hosts would like to extend our gratitude to all the participants for sharing their expertise and experiences, all of which serve to underpin the work of the initiative. The agenda and list of participants can be found in Annex I.

Throughout the discussion, key points emerged:

- 1. South-originating green finance is a growing driver toward green growth, but green projects must be able to achieve competitive returns.** South Africa, like many emerging economies, is making moves to promote economic growth while instituting social and environmental protections. The country has had success in building a renewable energy sector and is eager to repeat that success in other areas. For this to be possible, green projects must achieve a competitive return on investment.
- 2. On-the-ground knowledge of developing country projects, practices and players affects how financial actors evaluate risk.** Finance institutions based in South Africa appreciate the growth of African economies and have better knowledge of the potential and challenges for green projects. This information helps South African financial institutions to weigh projects differently and create portfolios and partnerships to achieve results.
- 3. Regulatory clarity and certainty is critical for South-originating green finance to flow at needed levels.** Innovations in Southern economies are underpinned by sound regulations. In South Africa, for example, Regulation 28 requires pension funds to look at environmental and social factors in their investments. As such, pension funds can take longer-term perspectives and drive funds toward green initiatives. The opposite is also true, however. Confusing or conflicting policies cause financial institutions to abandon green projects.

The discussions provide an important foundation for further discussion on the role of SGF, understanding its characteristics and the policy options to increase its volume and impact. Lessons from South Africa will inform the work of the initiative and provide vivid examples of how SGF can be mobilized to achieve green growth.

SOUTH-ORIGINATING GREEN FINANCE AS A LEVER FOR SUSTAINABLE DEVELOPMENT

South-originating private green finance has different development impacts as compared to Northern-sourced, private green finance. Most obviously, different commercial investment criteria and valuations, as discussed above, may lead to different investment portfolios, outcomes and development consequences.

Beyond this, however, are other potential development outcomes specific to South-originating finance:

- **Investor's development focus:** domestic financial institutions – especially state-owned enterprises that play a large role in SGF – may have a development orientation that introduces some non-commercial (or perhaps more strategically commercial) criteria into investment decisions.
 - For example, pension funds can invest in longer-term return profiles and have the flexibility to support green initiatives that require extended time horizons. As such, they appreciate developing country growth and can be influenced by trustees representing intended beneficiaries and with an eye on, for example, employment opportunities associated with green growth.
 - Moreover, non-commercial interests may be regulated, such as South Africa's newly established Regulation 28 of its Pension Funds Act allowing pension fund trustees to make investment decisions with an eye on their social and environmental impacts.
 - Internally, commercial financial institutions may well have criteria and reporting standards, enabled through public pressure and expectations of their Boards of Directors.

Increasingly, companies are evaluating the social and environmental impacts of projects and have created discrete business units to address these factors. Reporting such as this can further drive corporate behavior. One example is Kalangala Infrastructure Project (Exhibit 9) supported, in part, by Nedbank.

- **Financial sector development benefits:** increased activities of southern financial institutions in green financing advances developing country financial markets, a critical development enabler through:
 - Direct benefits from the growth of financial services as an economic sector such as employment and job creation, incomes, and taxes.
 - Indirect development benefits from the increased maturity and liquidity of financial markets, such as increased competition, diversity of products and strength of financial service companies. For example, in 2012, Nedbank led the way in the creation of South Africa's first Green Bond, a product for individuals to grow their savings while supporting renewable energy development in South Africa (see Exhibit 10). Increasing the strength of local banks can lead to the better assessment, budgeting and packaging of investments, thus being able to match more investment opportunities with available capital.
 - With a strengthened financial sector, alliances can be developed with other Southern-located banks to make stronger deals.

EXHIBIT 8: TOP SOUTHERN INVESTORS IN CLEAN ENERGY INFRASTRUCTURE, 2004 – Q3 2013 (US\$ BILLIONS)

COMPANY	COUNTRY	CUMULATIVE INVESTMENT OVER PERIOD
China Guodian Corp	China	30.0
China Huaneng Group Corp	China	17.2
Banco Nacional de Desenvolvimento Economico e Social	Brazil	16.9
China Datang Corp	China	16.8
China Power Investment Corp	China	12.2
China Huadian Corp	China	9.4
China General Nuclear Power Holding Corp	China	9.2
Shenhua Group Corp Ltd	China	7.1
China Resources National Corp	China	5.3
China Energy Conservation & Environmental Protection Group	China	5.1

Source: Bloomberg New Energy Finance: Clean Energy Investment Trends 2013

EXHIBIT 9: KALANGALA INFRASTRUCTURE PROJECT

The Kalangala Infrastructure Project (KIP) set out to develop and rehabilitate infrastructure – including ferry transportation, roads, water supply and electricity – to support the households, businesses, institutions and residents of Bugala Island in central Uganda. The island, covering 27,000 hectares, is the second-largest island on Lake Victoria but it was completely cut off from the mainland. The road and ferry were unsafe and dilapidated; waterborne diseases were common and there was no reliable electricity. The isolation of the island led to a lack of food, supplies and resources.

Finding the necessary public funds for the projects like KIP had become harder since the financial crisis, with budgets reduced and increasing international regulatory constraints. To achieve the US\$50 million project, a public-private partnership was created to reduce risk for the private sector. Credit guarantees were provided so Nedbank, one of the largest financial institutions in South Africa, could make debt financing available.

As of 2013, a water purification plant was built that provides communities with clean water, which has led to a reduction of waterborne diseases by over 80%. The communities now have access to electricity via a 1.5 MW hybrid diesel/solar-power-generating facility. To support connectivity, a new 66km gravel road and new passenger and vehicle ferries were developed, which provide safe and free transport to the mainland and makes it possible for fresh produce and other supplies to reach Bugala.

Adapted from: Nedbank: Making Sustainable Solutions Happen

However, one size does not fit all. Some countries, due to national circumstances, may defer or combine domestic-originating green finance with accessing international capital markets. Benefits may be considerable for:

- Foreign exchange constrained countries, where tapping domestic financial markets drains limited, investable resources and so constrains investment opportunities elsewhere in the economy.

- Technologically intensive, green investments, where technology transfer is linked to international financing arrangements.

Once again, the balance of development gains and costs are an empirical not a conceptual matter and will change over time. However, by identifying the characteristics and policy options to promote SGF, countries may be better positioned to drive sustainable development.

EXHIBIT 10: GREEN FINANCIAL PRODUCTS: NEDBANK'S GREEN BOND

To support low-emissions and resilient development, some Southern financial institutions are making new products and services available to their customers. In 2012, Nedbank led the way in the creation South Africa's first Green Bond. The bond, issued by the Industrial Development Corporation of South Africa, is a fixed-term investment available to all individuals and earns interest at a fixed rate of up to 7.5% for the duration of the investment. All funds invested in the Green Bond are earmarked for renewable energy projects that help contribute toward South Africa's green economy.

By 2013, Nedbank reported that they had raised over US\$490 million, surpassing their goal. By continuing to offer the Green Bond, Nedbank hopes to provide investors the opportunity to grow their savings while, at the same time, supporting renewable energy in South Africa.

Adapted from Nedbank Green Savings Bonds

HOW CAN POLICY MEASURES INCREASE THE VOLUME AND IMPACT OF SOUTH-ORIGINATING GREEN FINANCE?

That South-originating finance has different investment criteria, including a higher appetite for securing development co-benefits, represents an important, indeed perhaps pivotal, opportunity for accelerating and amplifying the transition to inclusive, green growth. Yet this opportunity will not be delivered without policy support, or may be even greater if policy signals are designed with it in mind.

Policies to encourage green finance have to date not differentiated funds by their geographic origin, but at most by whether the funds are public or private, and in the latter case quite rightly whether they are from institutional investors, private equity, banks or some other investor class. Some enabling policies may apply equally to finance irrespective of its geographic origination. Installing credible and stable targets and objectives, for example, provides signals to the private sector and creates a window of opportunity for investors to drive finance toward priority sectors. Indeed, when UNEP FI surveyed private finance practitioners about the most effective incentive mechanisms for renewable energy deployment in developing countries, respondents highlighted the importance of clear targets and a formulated government vision for providing certainty, increasing reliability and trustworthiness.³⁵

Some policies, however, may be particularly relevant to South-originated finance, for example:

- **Greening financial regulations:** greening private finance can be accelerated by, largely domestic, financial policies and regulations. The China Banking Regulatory Commission, for example, has issued Green Credit Guidelines (see Exhibit 10) to encourage investors to more explicitly and systematically consider green risks, such as rising carbon and water prices and environmental legislation, and green opportunities. Brazil introduced a rural credit scheme to incentivize against deforestation (see Exhibit 12). Other emerging economy financial regulators, including the central banks of Bangladesh and Nigeria, are developing similar frameworks.³⁶

International financial regulations are also relevant, as highlighted earlier in the case of Basel III capital requirements. Greening these regulations, however, require a mandate and commitment from governing, national financial regulators, which means in effect needing the active support of emerging market governments who need to see such moves as being in their economic and broader development interests.

EXHIBIT 11: REGULATORY REFORM: THE CHINA BANKING REGULATORY COMMISSION'S GREEN CREDIT GUIDELINES

In 2012, China's Banking Regulatory Commission issued *Green Credit Guidelines* as a framework for green lending. The guidelines apply to national and international institutions and place green credit strategies at the highest levels. Boards of Directors are required to promote green concepts and banks shall identify, assess, monitor, control and mitigate environmental and social risks. Moreover, they are legally responsible to disclose information on their environmental and social practices and impacts.

The ground-breaking guidelines follows China's Green Credit Policy that encourages Chinese banks to lend more to energy-efficient and environmentally-sustainable companies and less to polluters. Both the Policy and Guidelines signal that the government sees environment and economic issues as inextricably linked, and the finance sector as a key lever to drive sustainable development.

Sources: China Banking Regulatory Commission: *China's Green Finance: Status Quo, Issues and Future*, International Finance Corporation: *As Chinese Companies Invest, Green Credit Follows*, Zadek, Simon: *Greening Financial Reform*

- **South-South policies:** South-South financing, often linked to cross-border trade and investment, is rapidly increasing. Outward investment from major emerging economies is likely to be a major source of development finance, for example in Africa, but also in much of Asia and Latin America. Some of the finance is governed by national policies, inter-governmental agreements and, in some instances, institution-specific policies such as those applying to national development banks and sovereign wealth funds. Such policies, however, often exclude explicit consideration of green economy imperatives.

Diverse opportunities exist for policy developments that could more actively green such finance. Both trade and investment agreements could, for example, take explicit account of the need to green finance flows. Indeed there

is discussion about the real economic benefits for a “sustainable energy trade area.” Sovereign wealth funds, individually or collectively, could proactively adopt an upgraded version of the Santiago Principles, an existing, voluntary code of practice that governs sovereign wealth fund investment behavior, to drive green finance.

- **International policies:** international policy initiatives to advance green financial flows are proliferating rapidly, perhaps in part because of perceived weaknesses in the financing aspects of the multilateral climate negotiations. Many of these initiatives are focused on catalyzing private finance, often through enabling policies and the smart use of scarce public finance.

EXHIBIT 12: RURAL CREDIT POLICY IN BRAZIL

In 2008, Brazil introduced a unique credit policy to provide rural producers an incentive against deforestation. The National Monetary Council approved a resolution that required rural producers to prove compliance with environmental regulations to receive financing. The resolution affected mostly mid to large-scale producers, as small-scale producers benefitted from a series of exemptions.

In the first years of implementation, the rural credit policy had already impacted rates of deforestation. The Climate Policy Initiative estimates that approximately US\$1.4 billion in rural credit was not loaned from 2008 to 2011 because of restrictions imposed by the resolution. This reduction in credit prevented over 2,700 square kilometers of forest area from being cleared. Had the resolution not been implemented, deforestation would have been 17% greater.

Source: Nelson and Vladeck: The Policy Climate

FUTURE RESEARCH AND POLICY NEEDS

Greening every aspect of the global economy is a precondition for securing inclusive and sustainable development. Considerable finance is needed to fund this transformation, much of which needs to flow over the next decade to contribute to addressing climate change and promoting sustainable development. Every dollar from whatever source should be considered for its potential to contribute to realizing this investment imperative.

South-originating finance is one piece of the puzzle, and potentially a major part of the solution to closing the current green financing gap. Yet it remains uncounted, poorly understood, weakly leveraged and effectively marginalized from mainstream policy debate and practice, nationally and internationally.

South-originating Green Finance: Exploring the Potential, the initiative within which this paper has been prepared, seeks to overcome these shortfalls. Success would mean building policy consensus and action on:

- Acknowledging the importance of South-originating green finance
- Understanding its specific characteristics and potential
- Shaping policy options to increase its volume and enhance its impact.

A number of key questions need to be addressed in realizing these goals (Exhibit 11). The initiative's dialogue and associated research will seek answers to these questions, and so advance the realization of the potential of South-originating finance.

EXHIBIT 13: SOUTH-ORIGINATING GREEN FINANCE

Policy-Relevant Research Questions

1. How should it be *defined and categorized* to better monitor, measure and evaluate flows?
2. What are the *current flows and trends*, identifying data gaps and how they might be filled?
3. What are its *specific characteristics*, particularly its private sector element?
4. What are its distinct *potential co-benefits*, in particular for country-led development?
5. What are its structural, financial, political and regulatory *impediments to scaling*?
6. What *policy measures* would effectively encourage it?

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SOUTH-ORIGINATING GREEN FINANCE: EXPLORING THE POTENTIAL

- Infrastructure investment in a global, sustainable economy requires up to US\$100 trillion between now and 2030
- Private capital will be essential in securing the scale of green investment required
- South-originating green finance (SGF) flows, while still obscured by a lack of systematic data and analysis, are large and growing
- Initial research as part of the South-originating Green Finance Initiative, including on the ground dialogues with private investors, regulators and other stakeholders, indicate that SGF has important and distinct characteristics that set it apart from finance originating from developed countries
- Based on SGF's unique characteristics, effective policies can be developed to drive South-originating green finance to play an increasingly important role in delivering green and inclusive development
- Realizing the potential of South-originating finance to invest in the transition to a green and inclusive economy requires a deeper understanding of its features, potential and enabling drivers