



# DEMYSTIFYING PRIVATE CLIMATE FINANCE

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## EXECUTIVE SUMMARY

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**UNEP Finance Initiative**  
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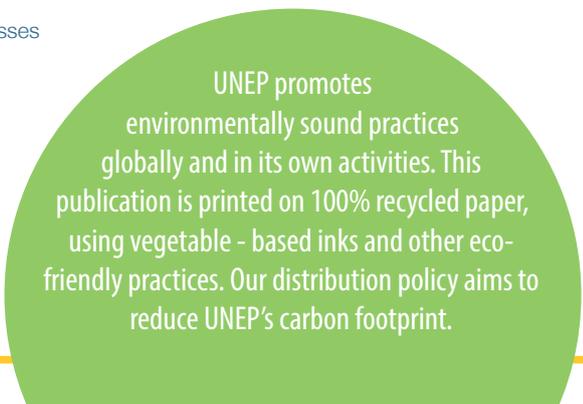
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UNEP **Finance Initiative**  
Changing finance, financing change

# DEMYSTIFYING PRIVATE CLIMATE FINANCE

What is private finance? Where and how does it connect with climate change mitigation and adaptation? And how can it be mobilised by public actors?

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First of a series of UNEP FI contributions to the multilateral negotiations on climate finance, the Green Climate Fund (GCF), and its Private Sector Facility (PSF)

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## EXECUTIVE SUMMARY

## FOREWORD FROM UNEP FINANCE INITIATIVE

As we enter 2015, world governments are markedly intensifying their efforts to jointly achieve a global agreement on climate change in time for the Conference of the Parties 21 to be held in Paris. And for the first in a long time there is reason for all of us to be cautiously optimistic that those efforts might indeed lead to fruition, and to an inflection point in multilateralism's ability to effectively tackle what many agree is the defining global challenge of our times.

Recent agreement between China and the United States, the two largest greenhouse gas emitters of the world, on the importance of global decarbonisation as well as on these two countries' responsibility to take a leading role, is one reason for optimism. So is the current determination among rich countries to adequately capitalise the Green Climate Fund with a view of supporting poorer countries to embark on 'climate-compatible' development paths. It is no exaggeration that success in Paris will largely depend on progress and agreement on the issue of climate finance; and the prospect of mobilising it at the required pace and scale.

It is precisely in this arena where another perhaps less symbolic but equally encouraging observation can be made: there is – now probably more than ever before – a shared understanding in the climate process that tackling climate change will not be possible without major mobilization, or a 're-channelling' rather, of private finance. The underlying rationale is simple: tackling climate change requires economic transformation, meaning a transformation of common business practices in the private sector, which requires unprecedented private investment, which in turn can only be financed privately.

What is noteworthy is that by no means does this make the role of public finance any less important. For long the misconception of a rivalry between public and private finance has inhibited progress in these discussions. Mobilising at-scale private finance requires bold public action, be it of a regulatory, legislative, and/or jurisdictional nature. All public action, in turn, requires public investment and public finance. So the more public finance there is, the better; but, of course, public finance will always be scarce.

Therefore, the central question in the negotiations should be how best scarce public financial means can be used to achieve the greatest possible mitigation and adaptation impact. In other words: how can most mitigation and adaptation investment be unlocked with each unit of available public finance?

Finding answers to this question is what UNEP Finance Initiative's *Demystifying* series aims to contribute to, and our main point is that doing so is far from trivial. There is indeed no silver bullet for the mobilisation of private climate finance. Too numerous and varied are the project, technology, and infrastructure types required for climate change mitigation and adaptation. They range from micro-scale roof-top solar voltaic installations to large-scale offshore wind parks; from the restoration of ecosystems such as mangrove systems to the climate-proofing of large man-made infrastructure. And not only does the nature of project and technology types vary; so do the contexts within which they are needed – which range from rural, largely agriculture-based areas in least developed countries to some of the largest urban and industrial centres in some of the largest emerging economies. Equally varied is, furthermore, the private financial landscape spanning everything from micro-finance institutions, over domestic banks to large infrastructure financiers and institutional investors.

With so much complexity it is easy to get confused and 'misted'. In response, this report aims, firstly, to increase policy-makers' and climate negotiators' understanding of the essentials of private finance. More importantly, it suggests and introduces a generic logic and approach – a sequence of questions – that climate negotiators and policy-makers should follow when debating, and ultimately designing, the public interventions required for the unlocking of at-scale private climate finance.

This report is only the start: future issues in this series will see greater focus and the application of this logic to a set of climate change activities where most demystification seems to be needed, in particular sustainable land-use including REDD+ as well as adaptation.



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## LIST OF ABBREVIATIONS

<b>CAPEX</b>	Capital Expenditure
<b>CCRIF</b>	Caribbean Catastrophe Risk Insurance Facility
<b>DFI</b>	Development Finance Institution
<b>EE</b>	Energy Efficiency
<b>ESCO</b>	Energy Services Companies
<b>FiT</b>	Feed in Tariff
<b>GCF</b>	Green Climate Fund
<b>IEA</b>	International Energy Agency
<b>IPO</b>	Initial Public Offering
<b>MIGA</b>	World Bank Multilateral Investment Guarantee Agency
<b>NBFIs</b>	Non-Bank Financial Institutions
<b>OPEX</b>	Operational Expenditure
<b>PPA</b>	Power Purchase Agreement
<b>PPP</b>	Public Private Partnership
<b>PSF</b>	Private Sector Facility
<b>SPV</b>	Special Purpose Vehicles
<b>TCX</b>	Currency Exchange Fund
<b>UNEP FI</b>	United Nations Environment Programme Finance Initiative
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

## EXECUTIVE SUMMARY

The international climate regime will only deliver its objective of transformational impact if it is able to unlock at-scale private finance and direct this capital away from routine business-as-usual investments and towards alternatives that are low-carbon as well as climate-resilient. Delivering change on this scale will demand ‘game changing’ public interventions, in relation to climate change policies, at the international and national levels, in relation to institutional structures and operations, and in relation to financial mechanisms and instruments.

Designing and implementing effective climate finance policy requires negotiators and policymakers to:

- Understand and appreciate not only the key characteristics of private finance and the corresponding actors, but also the full spectrum and diversity of the private finance landscape.
- Understand where and how exactly private finance fits into the highly diverse and complex landscape of climate change mitigation and adaptation.
- Recognise that different categories of climate change projects present different issues and challenges when trying to attract private sector investment. Policy interventions at both national and international levels, therefore, need to be carefully tailored to the specific projects, sectors or countries in question.

This report is the first of a series of contributions from UNEP Finance Initiative (UNEP FI) to the multilateral negotiations on climate finance, the Green Climate Fund (GCF) and its Private Sector Facility (PSF). Using three case studies – large-scale, grid-based, renewable energy, energy efficiency improvements in corporate operations and production processes, and ‘climate-proofing’ existing infrastructure – it explains where and how exactly private finance fits into the diverse and complex landscape of climate change mitigation and adaptation. From this, the report offers a series of practical suggestions on the factors that need to be considered by national and international negotiators and policymakers when designing and implementing interventions, instruments and mechanisms aimed at mobilising private climate finance.

This report is divided into two parts:

- Part A is an attempt at ‘demystifying private finance’ to climate change negotiators. It explains the different types of private finance, and describes the variety of sources, intermediaries, legal considerations and investment objectives that are to be found in the private finance landscape.
- Building on Part A, Part B analyses the types of private finance that are particularly relevant to a sample of mitigation and adaptation activities, explains why different project types require different forms of ‘private finance’ to succeed, and explains how the specific characteristics of the project type affect the forms of public intervention that are needed to attract private sector finance.

## THE ESSENTIALS OF PRIVATE FINANCE

The source of private finance is the savings of individuals and corporations (natural and legal entities)<sup>1</sup>. These savings are generally managed, pooled and invested through intermediaries such as banks, portfolio management firms and/or pension funds.

As discussed in Part A of this report, the private financial landscape is complex and diverse. Private finance is provided by a wide range of actors and through a variety of channels. It features different levels of risk and return expectations. It features varying levels of liquidity. It involves different actors ranging from small angel investors to very large banks and institutional investors. It can be short-, medium- or long-term. Individual private transactions can be described and differentiated by reference to the following six dimensions:

- The **legal nature** of the financial transaction.
- The **seniority** of the transaction and the associated **risk profile**.
- The **channel** and the **intermediary actors** through which the flow of finance is arranged.
- The **term or tenure** of the financial arrangement. This is closely linked to the **liquidity** of the financial asset.
- The ultimate **source** of the financial resource and its **origin**.
- The **knowledge of use of proceeds** related to the transaction.

At the heart of most, if not all, forms of private finance; however, is the need to provide appropriate risk-adjusted returns for the providers of these funds. Within this, it is particularly important that policymakers understand that the greater the risk that an investment is exposed to (or the greater the perception of that risk), the greater the returns that will be expected from it by the capital providers.

The language of risk and returns suggests that financial and investment decisions are primarily a matter of balancing financial costs and financial returns. In practice, however, a much broader variety of factors – some of which can be readily described in financial terms, others of which are more difficult to describe in these terms – affect financial decision-making and ultimately the nature and direction of financial flows.

## ADDRESSING THE BARRIERS TO PRIVATE CLIMATE FINANCE

Certain barriers to mobilising private finance for climate change related mitigation and adaptation in developing countries are relatively generic. In fact, they often are the same as those encountered when attempting to secure any private finance in the country in question. Depending on the particular country, barriers may include instability of legal, economic, and regulatory frameworks within which private sector activity unfolds, shortcomings in the reliability and longevity of regulatory schemes that the project's viability depends on, and the commercial viability, bankability, and/or creditworthiness of the project or venture at hand.

However, a closer look at specific types of climate change-related projects reveals that each presents different issues and faces different challenges when trying to attract private finance. Not all climate change mitigation and adaptation projects are financed equally. Different project types require different forms of private finance

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<sup>1</sup> The savings of governments are, in contrast, not considered a source of private finance even though these funds are often provided through private sector channels and are often directed towards activities in the private sector.

to succeed. Furthermore, each project type is likely to confront obstacles that are specific to its special financing needs. It, therefore, follows that different forms of public intervention are needed to move different types of climate change related projects forward.

This report identifies how three quite different climate change related mitigation and adaptation projects are typically financed, and identifies the barriers that are commonly encountered when attempting to mobilise private finance.

## **NO ONE-SIZE FITS ALL - DIFFERENT FINANCING REQUIREMENTS; DIFFERENT FINANCING BARRIERS**

The analysis of the three project types considered in this study indicates that the different project types have quite different financial characteristics, and face quite different financing barriers as a result. This, in turn, means that the public interventions required to overcome these barriers are quite different and must be tailored to the specific project type in question.

**Large-scale renewable energy (RE) infrastructure projects**, similar to many other large infrastructure projects, require special purpose vehicles (SPVs) to attract project finance through project loans, private equity, and at times through project bonds. Large, often multinational, commercial banks and infrastructure funds (often capitalised by institutional investors) are usually the main actors providing private sector financing.

These projects often struggle with fundamental technological, macro-economic and regulatory challenges. Despite rapid gains in competitiveness in recent years, centralized, RE electricity generation continues to face an uneven playing field relative to conventional power plants. This is exacerbated by fossil fuel subsidies that are still disbursed in many parts of the world, including in developing countries. Domestic policymakers frequently fail to develop public policies and regulatory mechanisms such as carbon pricing schemes, greenhouse gas (GHG) efficiency standards or feed-in tariffs that might 'level the playing field'. Where these policies exist, they are often criticised by private sector actors and financiers for being insufficient or unreliable.

Furthermore, financial markets in many developing countries lack the maturity and depth needed to provide project finance at the scale and tenor of infrastructure projects of this type. Foreign financiers and investors who could, in theory, close the finance gap tend to shy away from local projects given the recurrent presence of considerable currency exchange risks.

Finally, country, policy and political risks are particularly detrimental to RE investment, given the scale of the capital investment required and the long lifetimes of such projects.

**Energy efficiency (EE) improvements in corporate operations and production processes** usually rely on 'on-balance-sheet' financing by the project's sponsor or they can work through smaller SPV arrangements, involving energy service companies (ESCOs). In either case, the main sources of private financing are domestic or local banks involved in corporate or project lending and/or the project sponsors themselves as providers of equity capital.

EE improvements tend to struggle with methodological issues related to how energy savings are calculated and the way in which they are likely to be allocated to a specific intervention. Often the true amount of savings compared to the real costs of the intervention remains unclear, or appears uncertain to potential project spon-

sors. Another more fundamental challenge is that companies often tend to favour projects that lead to business expansion, continuity and increased revenues rather than investments that primarily lead to cost-savings.

Lastly, determining the funding profile of **projects that climate-proof existing infrastructure** can be challenging. The ownership and management model of the underlying infrastructure are important factors as well as the size of the retrofit. When the infrastructure is publicly owned and publicly managed, the corresponding government agency usually provides financing obtained from fiscal revenue or commonly used debt instruments such as municipal bonds, municipal loans or sovereign bonds. Project bonds that are fully dedicated to a particular climate-proofing project are another option in the case of particularly large retrofit interventions. In these cases, the main source of private financing usually comes from commercial banks engaged in municipal finance along with institutional investors and infrastructure funds. When the infrastructure is privately owned and managed, the financing may be provided 'on-balance sheet' by the project sponsor in the case of a small retro-fitting intervention. In the case of a large retro-fitting intervention, financing would typically be provided through an SPV arrangement.

The main financing barriers for 'climate proofing' of existing infrastructure projects are the challenge of monetising any 'climate-proofing' benefits into the cash-flows required to make any given SPV-structure bankable, the general absence of experience in making these investments, and information gaps regarding, for instance, the nature, likelihood and intensity of the meteorological and hydrological impact of climate change that can be expected for the region and location at hand.

**TABLE 1: SPECIFIC BARRIERS TO PRIVATE CLIMATE FINANCE ACCORDING TO PROJECT TYPE**

Project type & financial profile	Key Issues			
	Financial	Policy	Institutional	Other Issues
<p>Large-scale renewable energy infrastructure projects</p> <p><i>These are generally financed through SPVs to attract large-scale project finance through project loans, private equity and, increasingly, project bonds.</i></p>	<ul style="list-style-type: none"> <li>Electricity generation from renewable sources is often not cost-competitive with conventional, fossil-fuel power plants. Often this is a result of the higher capital-intensity of the former relative to the latter</li> <li>Transaction costs can be significant. The best locations for renewable energy projects (e.g. where there is sufficient wind or solar intensity) are often located at a major distance from the centres of demand (urban areas). As a result, RE projects often require significant investment in transmission and distribution infrastructure. Also, developing RE projects requires extensive data (e.g. historic weather-related data covering wind, sun radiation and precipitation). These data are often difficult to obtain in developing countries.</li> <li>Project returns often depend on subsidies or other forms of policy support.</li> <li>In many countries, the incentives provided are often not sufficient to compensate for the risks that financiers face.</li> <li>Elevated off-take risks as a result of the purchaser of the electricity having a poor credit rating.</li> </ul>	<ul style="list-style-type: none"> <li>Even where RE policies do exist, they are often seen as lacking dependability and longevity, both in developed as well as in developing countries.</li> <li>Weaknesses in overarching policy and macroeconomic frameworks - in particular country, political, and currency risks - can limit the effectiveness of RE related policies.</li> </ul>	<ul style="list-style-type: none"> <li>Financial markets in many developing countries lack the maturity and depth needed to provide project finance at the required scale and tenor.</li> <li>Local financial institutions may not have a substantial enough balance sheet or access to channels needed to provide the large debt volumes typically required for these types of projects.</li> <li>There may be a lack of refinancing vehicles, making it difficult for project developers to exit their investment. This is particularly important in the case of large renewable energy projects which operate for 20 years or more.</li> </ul>	<ul style="list-style-type: none"> <li>The absence of an extensive track record of development of large-scale RE projects or uncertainty over their performance (particularly in developing countries) translates into higher upfront costs and higher perceived levels of risk. These can only be addressed through the relatively wide deployment of the technology.</li> </ul>
<p>EE improvements in corporate operations and production processes.</p> <p><i>These can be financed directly by the project sponsor possibly using bank lending or through some form of SPV involving an energy service company and/or a third party finance provider.</i></p> <p><i>ESCOs can sit between financiers and the energy end-users. They can invest in EE projects on behalf of these end-users, and take a share of the value of the resulting energy savings.</i></p>	<ul style="list-style-type: none"> <li>Companies tend to favour projects that lead to business expansion and increased revenues rather than investments that primarily deliver cost-savings (e.g. energy efficiency improvements).</li> <li>The actual savings that are achieved are often less than those predicted when account is taken of management time, disruptions to production, staff training and information gathering and analysis.</li> <li>Companies are often reluctant to directly finance energy efficiency improvements through their balance sheets. However, EE equipment tends to have a low collateral asset value and is often difficult or uneconomic to remove and use elsewhere.</li> </ul>	<ul style="list-style-type: none"> <li>The case for investing in EE is dependent on managements' views on short- and long-term energy prices (which includes the effect of carbon taxes or other climate change-related policy measures). Low energy prices reduce the incentive to invest in EE.</li> </ul>	<ul style="list-style-type: none"> <li>The novelty and particularities of discrete EE related interventions mean that third party financiers tend to look for other collateral.</li> <li>It is difficult for ESCOs to obtain third party financing from banks and other lenders. There are various reasons: the ESCOs are exposed to the end-user credit risk, revenue-sharing arrangements between ESCOs and host companies are often difficult to monitor which creates uncertainty that bank loans will be repaid, and the novelty of the ESCO model means that local banks often have limited understanding of the business model upon which ESCOs operate.</li> </ul>	<ul style="list-style-type: none"> <li>It is often difficult to calculate energy savings and to attribute these savings to a specific intervention.</li> <li>There can be significant upfront transaction costs associated with researching and analysing energy efficiency opportunities.</li> <li>ESCOs often lack full control over equipment operation and, therefore, expected cash flows. Energy savings, and consequently the revenue for the ESCO, depend on the host company correctly operating the equipment.</li> </ul>
<p>Climate proofing of existing infrastructure</p> <p><i>The approach to financing depends on the ownership and management model for the underlying asset and the size of the investment required. For publicly owned infrastructure, any investment is typically made by the corresponding government agency using fiscal revenue or debt instruments (e.g. municipal bonds). For privately owned infrastructure, smaller retrofits may be financed through the balance-sheet of the project sponsor whereas larger retrofits may be financed through SPVs which attract project finance through project loans, private equity and project bonds.</i></p>	<ul style="list-style-type: none"> <li>It is often difficult to convert (or monetise) the benefits of climate-proofing interventions into cash-flows that a third-party financier would be willing to lend against.</li> </ul>		<ul style="list-style-type: none"> <li>Climate proofing is still a relatively new concept, and as a result the financial and information systems needed to create a functioning market are frequently absent.</li> <li>In developing countries, relatively few project-sponsors or financial institutions have the capacity and resources to access, produce or analyse 'climate information' such as the hydrological and meteorological implications of climate change for the infrastructure at hand.</li> </ul>	<ul style="list-style-type: none"> <li>There are often important information gaps regarding, for instance, the nature, likelihood and intensity of the meteorological and hydrological impact of climate change that can be expected for the region and location at hand.</li> <li>There is limited information on projects and associated costs.</li> </ul>

## DIFFERENT FINANCING BARRIERS REQUIRE DIFFERENT FORMS OF PUBLIC INTERVENTION

Given the specific financing requirements of different climate change project types, it is clear that any public intervention (or instrument) that hopes to remove financing barriers needs to be tailored to the unique financing requirements and obstacles faced by the particular project type.

Encouraging private sector investment in **large-scale RE infrastructure projects** requires i) regulatory adjustments in incentives and sanctions to 'level the playing field' in the energy sector at the national level; ii) transferring or mitigating political, regulatory and currency risks; and iii) supporting the development of a domestic financial system that is able to provide services at the required scale and tenor.

Developers and financiers investing in **EE improvement projects** will require a different set of public interventions. These interventions include i) encouraging electricity utilities to provide incentives for improvements in efficiency, for instance through schemes of 'payments for negawatts'; as well as ii) promoting and developing the market for ESCOs.

Finally, public interventions aimed at unlocking private finance for interventions that **climate-proof retrofits existing infrastructure** should aim to i) close information gaps including doubts about the physical implications of climate change in the future; ii) require the owners and/or operators of potentially climate-vulnerable infrastructure to make credible assessments of the climate resilience of their assets; and iii) develop methods, tools, and schemes to monetise the resulting climate-proofing benefits so that they can be identified as bankable cash-flows.

## STRUCTURING A NUANCED AND EFFECTIVE AGENDA ON PRIVATE CLIMATE FINANCE

The diversity and heterogeneity of climate change activities/projects, the diversity of the types of private finance required, and the barriers to the mobilisation of this finance, need to be carefully considered in the international climate finance negotiations. In other words, there is no 'one size fits all' policy agenda for climate finance. Rather, the policy agenda must be tailored to the specific activities that need to be financed.

Policymakers can help ensure that they take account of the specific financing needs of specific projects or activities by ensuring that they complete the following three steps as an essential prelude to making any decisions on the policy measures that they might implement:

1. Identify and understand fundamental parameters of the on-the-ground activities to be enabled. This includes understanding the project type to be supported, the typical size of such projects, the maturity of the underlying technology, and the developmental and regulatory circumstances of the host countries including the maturity and depth of their domestic financial systems.
2. Determine the types of private finance and the corresponding actors that are most relevant and will ultimately be required for the types of projects or technologies at hand. Once the appropriate and relevant types of private finance have been identified, policymakers can proceed with identifying the specific barriers that inhibit, or might inhibit, these kinds of private finance from flowing to the project categories at hand.
3. Determine which public interventions and instruments are best positioned to address the identified barriers. It makes sense to consider the types of public

interventions and instruments that are already in place, nationally and internationally, as well as their track records and lessons learned.

Policymakers and climate negotiators should be structuring the discussions on private climate finance in line with the following sequence of questions:

- What is the typical funding profile for each of these project categories? Who are the main financial actors? What kind of private finance is required for successful implementation?
- What are the main barriers currently keeping private capital from these project categories, noting that barriers are often specific to the kinds of finance required?
- What kinds of existing public intervention have successfully overcome these barriers? Can they be strengthened, expanded or copied with the support of the global climate regime including its GCF?

Following this logic the international debate on climate finance can deliver sufficiently nuanced insights regarding the public interventions best positioned to unlock private financial flows for mitigation and adaptation.

To illustrate this Part B of this report applies the above approach to the three project categories mentioned above. Some of the indicative results regarding approaches for public intervention are summarised in Table 2

**TABLE 2: POTENTIAL PUBLIC INTERVENTIONS TO MOBILISE PRIVATE CLIMATE FINANCE ACCORDING TO PROJECT TYPE**

Barrier	Potential Policy Interventions	Examples of Existing Interventions
<b>1. Large-scale grid-based RE</b>		
Cost, specifically the uneven playing field between RE and conventional options, and the lack of adequate and reliable policy support	<p>Revenue support that ensures economic viability. Examples include feed-in or auctioning tariffs for RE generation, and RE quotas.</p> <p>Cost sharing in project development phases. Examples include exploration support facilities, seed finance, etc.</p>	<p>In India, South Africa and Brazil auction tariff systems have proven effective at attracting renewable energy developers with very low price bids. For example, the December 2013 reverse auction in Brazil selected 97 wind projects totalling 2.3GW of capacity and other renewable energy projects totalling 1.2GW with winning wind bids averaging \$51.50 per MWh.</p> <p>To address the high transaction costs of geothermal development the Government of Indonesia has developed a \$145 million geothermal fund from the national budget to undertake exploration before tendering geothermal working areas.</p> <p>The Seed Capital Assistance Facility (SCAF) managed by UNEP with the Asian Development Bank and the African Development Bank works with commercial private equity funds to seed-finance renewable energy project developments in Africa and Asia.</p>
Elevated off-take risks	Partial risk guarantees and off-take risk insurance to backstop power purchase agreements.	World Bank Partial Risk Guarantees cover off-taker risks and have a strong leverage to avoid default due to an indemnity agreement that must be provided by the host government. They usually come in the form of either 6-12 month late payment guarantees or termination payment guarantees that backstop utility power purchase agreements with lenders.
Lack of local currency financing	Facilitate the engagement of local as well as foreign financiers through, for example, the provision of currency hedging instruments and mobilising institutional investment (e.g. through issuing and placing project bonds).	<p>The European Investment Bank's project bond credit enhancement (PBCE) instrument aims to enhance the creditworthiness of European infrastructure projects by issuing project bonds to institutional and other investors. Credit enhancement takes place in the form of a subordinated debt instrument to support the senior debt issued by the project company.</p> <p>To cover the long-term currency exchange risks that companies and financiers face in developing countries the Dutch Ministry for Development Cooperation supported with public finance the development of the Currency Exchange Fund (TCX). The currency fund offers cost-effective hedges for local currencies, which would otherwise not be available in the commercial foreign exchange markets.</p>
Investment environment risks: the issue of broader political and policy risk	Address the risk of general unfavourable conditions such as political instability, the risk of war and civil unrest.	<p>The Multilateral Investment Guarantee Agency (MIGA) of the World Bank offers political risk insurance guarantees that help investors protect foreign direct investments against political and non-commercial risks in developing countries.</p> <p>The U.S. Overseas Private Investment Corporation (OPIC) has recently piloted a policy risk insurance product for U.S. developers focusing on clean energy projects in developing countries. Insurance can help provide comfort to investors about policy risks, particularly retroactive changes, and guarantee that the project will receive support as agreed.</p>
<b>2. EE in operation and production processes</b>		
The lack of familiarity of third-party financiers with EE and with ESCOs.	Instruments that enhance the attractiveness of EE projects to third-party financiers. Examples include subsidised public loans to commercial banks for on-lending to energy efficiency activities, and risk sharing mechanisms focused on energy efficiency (including partial credit and partial risk guarantees).	<p>Thailand's Energy Efficiency Revolving Fund was established in 2003 to leverage private finance for energy efficiency projects. The fund provides interest-free loans to local banks, which then provide low-interest loans for energy efficiency projects. The duration of the loan is 7 years and the interest rate is capped at a maximum of 4% (negotiable). Eligible borrowers include industrial and commercial facility owners, ESCOs, and project developers.</p> <p>The Bulgarian Energy Efficiency Fund (BEEF) offers partial credit guarantees (80% on a parri passu basis and 50% on a first loss basis), as well as portfolio guarantees for ESCOs and for the residential sector. The ESCO portfolio guarantee covers up to 5% of defaults of the delayed payments of an ESCO portfolio. With this guarantee an ESCO can get better interest rates on its debt with commercial banks.</p>
EE interventions compete with revenue-generating activities for scarce capital, and there are hidden costs	Measures that increase the profitability of EE improvements. Examples include fiscal incentives, the reduction of energy-related subsidies that keep energy prices artificially low, and utility-mediated payment schemes for energy savings, also known as payments for 'negawatts'	Bankable power purchase agreements (PPAs) for energy efficiency: where utilities agree to purchase the project's energy savings ('negawatts') at a pre-agreed rate. By contracting with a utility to purchase the saved energy, the energy efficiency implementing entity has a bankable and credible contract to get internal management buy-in and to help raise finance from commercial banks. This means that such schemes can significantly increase the profitability of energy efficiency improvements by adding a 'revenue component' to the original 'cost-reduction' component. Furthermore, the presence of a purchase agreement will increase the willingness of third-party financiers such as commercial banks to provide the required financing.
<b>3. Climate-proofing of existing infrastructure</b>		
Difficulty in monetising the benefits of climate-proofing	Adaptation-equivalents to schemes on Payments for Ecosystem Services (PES) that could enable the monetisation of extra-financial, adaptation-related benefits.	While not directly related to climate change, one example is the City of New York which implemented a number of initiatives to guarantee its water supply and water quality. One of the applied instruments was the payment, by the end users of additional fees on their water bills. Together with other measures (bonds and trust funds), the additional funds are used for compensation and conservation programs aimed at protecting the city's forested watersheds. Analogous schemes, where the end-users of infrastructure are required to pay an additional fee, could be considered to cover the costs of climate-proofing investments.

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**About UNEP FI:**

*UNEP FI is a global partnership between UNEP and the financial sector. Over 230 institutions, including banks, insurers and fund managers, work with UNEP to understand the impacts of environmental and social considerations on financial performance. Through its Climate Change Advisory Group (CCAG), UNEP FI aims to understand the roles, potentials and needs of the finance sector in addressing climate change, and to advance the integration of climate change factors - both risks and opportunities - into financial decision-making.*