

## **GEEREF: a model climate fund?**

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*This briefing paper examines the Global Energy Efficiency and Renewable Energy Fund through the lens of climate finance. The fund is assessed by using a number of principles and criteria that have emerged within the UNFCCC process. It is an innovative financial mechanism that holds out promise of securing further private sector investments in clean energy. However, whilst much has gone into the design of the fund, the real test – over its implementation – has yet to begin.*

### **1. Introduction**

By 2030 developing economies will have become the major emitters of CO<sub>2</sub>. Shifting public and private sector investment in those countries towards a more sustainable development pathway is therefore a major international policy goal. The development of renewable energy and energy efficiency, collectively known as clean energy, is seen to be a key area by which emissions can be reduced. This would help particularly the energy supply sector move away from its fossil-fuel dependence for energy generation.

Much attention has been given to the public funding needs for adaptation in developing countries. Yet, similar funding challenges exist for mitigation, where it is acknowledged that the private sector will likely play a dominant role in new investments and financial flows. The Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) has indicated the level of investment required (UNFCCC, 2007 and 2008). The 2007 report, *Investment and Financial Flows to Address Climate Change*, estimates that additional investments of \$200-210 billion will be needed annually to reduce carbon dioxide equivalent (CO<sub>2</sub> eq.) emissions by 25 per cent below 2000 levels by 2030.

Global investment in renewable energy and energy efficiency has increased dramatically in recent years. Between 2004 and 2007, investments in clean energy increased from \$33.2 billion to \$148.4 billion (UNFCCC, 2008). About 94 per cent of this investment in 2007 came from the private sector (UNEP, 2008). Investment is dominated by wind and solar power, biofuels and biomass and waste. The rapid growth of clean energy investments indicates that the private sector will respond to mitigation opportunities given appropriate policies and incentives. Developing countries receive an increasing share of the new investment in clean energy. Their share grew from 13 per cent (\$1.8 billion) in 2004 to 23 per cent (\$26 billion) in 2007. However, activity remains concentrated in a few countries with China, India and Brazil accounting for 82 per cent of this investment in 2007.

A number of barriers limit private sector-led investment in renewables in many developing countries. Three significant constraints are: (i) the sub-commercial returns achieved from such investments due to their high upfront costs and long pay back periods; (ii) the high risk of investments in developing countries associated with political and commercial conditions and exchange rate fluctuations; and (iii) the considerable transaction costs of such projects due to their relatively small size.

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## 2. The Patient Capital Initiative

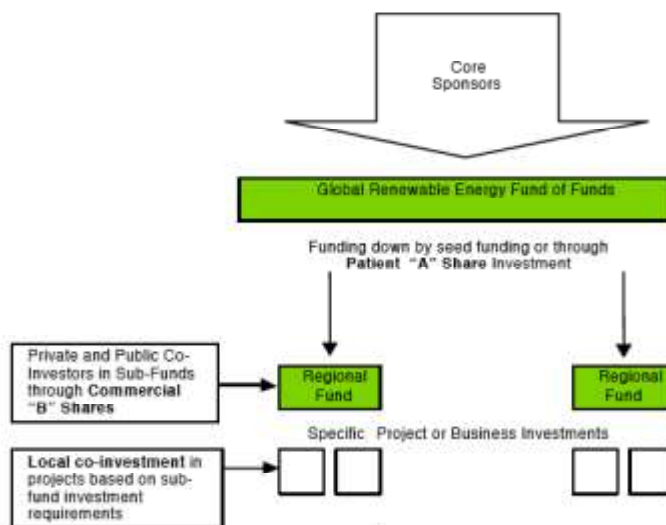
The European Commission launched the Patient Capital Initiative (PCI) in 2004. This initiative aimed to promote renewable energy sources in developing countries and countries in transition, targeting projects of a size that did not normally attract commercial investors. Individual investments up to a limit of €5 million would be considered, making it relevant to small and medium enterprises (SMEs). Equity-linked capital would be provided to the local entrepreneur and project developer on a basis that was affordable, where there was either no such capital available before, or available only on unaffordable terms or with damaging delay. The advantage of the PCI's structure was that it would provide equity, not debt.

The medium and small-scale clean energy market consists of a diverse range of end-user sectors: residential, commercial, industrial, public and institutional, agricultural, transport and power. Each sector has its own institutional and credit characteristics which must be considered when seeking and structuring financing. These markets consist of a very large number of small, dispersed projects in a wide diversity of market segments and face common financing challenges. Yet, in aggregate, they offer huge potential for climate change mitigation.

Patient Capital was defined as equity funding with return requirements that were delayed in time or lower in profitability than normal commercial thresholds. A base assumption was therefore that the financial return was not the key motivating factor driving investor interest. Like-minded governments and private sector parties would be brought together to create a public-private partnership, providing for both government policy-led funding and private co-investment and market-based investment skills and standards. This was an innovative approach, representing the first European public-private partnership initiative on climate change mitigation.

The proposed fund structure was also innovative and consisted of three levels (Figure 1): the top tier that pooled 'patient capital' of public and private investors in a 'fund of funds'; a middle tier of regional sub-funds, which would have additional commercial co-investors; and a bottom tier of investment projects and businesses supported by equity finance.

**Figure 1: Schematic Overview of the Fund**



Source: A Proposal for a Global Renewable Energy Fund of Funds. JREC (2004).

Companies usually seek equity to start up or grow their businesses, activities that can seldom be bank financed. For projects, equity is generally needed to increase investment to a level that meets lender debt-to-equity requirements. More equity means a lower risk of loan default. Compared to project loan facilities, equity funds assume significantly higher risks by assuming an ownership stake and taking a subordinated position in profit distribution (only after creditors and preferred shareholders).

### **3. The Global Energy Efficiency and Renewable Energy Fund**

The Global Energy Efficiency and Renewable Energy Fund (GEEREF) was subsequently launched in 2006 as a direct follow-on from the PCI, with the aim of mobilising private investments for the benefit of developing countries and economies in transition (European Commission, 2006a, 2006b, 2006c). Little appears to have changed from the original PCI design and mandate, although discussions on the exact structure of the fund clearly took some considerable time. The indicative limit for individual investments was raised to €10 million.

The main architect of this fund was the European Commission, in particular the Directorate General for Environment and the Directorate General for Europe Aid Co-operation (AIDCo). Since late 2008, a fund management team from the European Investment Fund (EIF) and the European Investment Bank (EIB) has been involved in selecting investment opportunities and fund raising. At present, the fund has been supported by three public investors (with €80 million pledged by the European Commission, €24 million by the German government and €10 million by the Norwegian government).

GEEREF is overseen by an Investment Committee of delegates, which is part of the EIB Group, representing its shareholders and industry experts. The Board of Directors of the Investment Committee takes investment decisions concerning the three categories of sub-funds where investments are to be made:

- High-Risk: targeting projects and SMEs in Least Developed Countries, with an indicative 30 per cent share of the GEEREF portfolio;
- Medium-Risk: focusing on medium and large renewable energy and energy efficiency projects in middle-income developing countries, with an indicative 50 per cent share of the GEEREF portfolio;
- Low-Risk: targeting medium and large scale renewable energy and energy efficiency projects in emerging economies, economies in transition and economies with limited availability of risk capital. Low risk funds are to make up approximately 20 per cent of the GEEREF portfolio.

By creating and funding regional sub-funds (or scaling-up similar existing initiatives) GEEREF's aim is to tailor to the specifics of regional energy efficiency and renewable energy markets. The fund also includes a technical assistance facility (of less than 10 per cent of the total fund size) to engage local and international technical expertise. This expertise will assist the development of project proposals and business plans.

The first approved set of investments was made by the GEEREF Investment Committee in December 2008. €22 million was allocated to two commercial renewable energy investment funds, one in sub-Saharan Africa and the other in Asia with a primary focus on India. Both investments had yet to be finalised by April 2009.

#### 4. Comparison of the GEEREF against the emerging principles of climate finance

With the recent proliferation of funding mechanisms to tackle climate change, a number of principles have been proposed to assess their relative worth (e.g. ActionAid, 2008, Hillman, 2009, Müller, 2008). The aim of the next two sections is to explore how well the GEEREF satisfies these principles. Each principle will be evaluated by examining one or more criteria (Table 1).

**Table 1: Fund functions, principles and criteria**

Fund function	Principle	Criteria
Resource mobilisation	The polluter pays	Countries with historical responsibility for climate change
		Financial contributions are relative to the quantity of emissions
	Additionality	Funds are more than existing aid commitments
	Adequacy	Funds generated are equal to the scale of the task
	Predictability	Leverage factor analysis
	Democratic Governance	Level of public and private commitment
Resource disbursement	Harmonisation	Overlap with other initiatives
	Access for the most vulnerable	Control over credit, resources and technologies

Two main questions can be asked of GEEREF: *how should the money be raised* and *how should the money be spent?* These questions relate to the resource mobilisation and resource disbursement functions of the fund.

In terms of resource mobilisation, developed countries assumed an obligation to provide new and additional financial resources to meet the agreed, full incremental costs of mitigating climate change incurred by developing countries under Article 4 of the UNFCCC. It was also acknowledged that the implementation of these commitments should take into account the need for adequacy and predictability in the flow of funds. This was subsequently re-emphasised under Paragraph 1 (e) of the Bali Action Plan and can therefore be taken as a core commitment of developed countries under the climate change convention. This means that international finance flows should be:

- New and additional - funding should be additional to ODA (official development assistance) with the polluter paying for the reparation of damage, thus avoiding the displacement of financial flows that are needed for development;
- Adequate - the amount of funds delivered to developing countries should be determined by their needs for mitigation under a 2°C temperature increase scenario;
- Predictable - financial flows should be sustainable over the long term.

In terms of fund disbursement, funds should be distributed in an equitable manner, responding to the needs of all regions and countries and taking into account the social and economic reality of the recipients.

## 5. Mobilization of financial resources and investments

To respond to the first question, and in particular the issue of who should raise the money, a number of commentators have proposed that *the polluter pays* principle should be adopted. This principle can be divided into two elements, each of which can be assessed by a specific criterion. The first assumes that those countries responsible for causing global warming should pay for the damage caused. The criterion used to assess this is whether countries with historical responsibility for climate change are those that are funding GEEREF. Analysis of the fund reveals that the present investors of GEEREF are European sovereign states or the European Commission. Their commitment to this initiative shows that the polluter pays principle has been respected, although the number of responsible countries is limited at present. A second criterion evaluates if the financial contribution allocated is relative to the quantity of emissions. As the initiative of co-funding in GEEREF is based on a voluntary scheme, not all those countries responsible for causing emissions are paying in relation to the quantity of their emissions. In this case the principle is not fully respected.

In response to the question about the amount of funding needed the *Adequacy* principle can be considered. This examines whether the funds generated are equal to the scale of the task. In the first instance it is crucial that the EC ensures that the €80 million pledged is provided in a timely manner. The Commission should encourage Member States to do the same. The €114 million pledged to-date would provide finance for only around 10-20 projects, as GEEREF funds projects up to a ceiling of €10 million. As GEEREF's aim is to cover many different areas (Least Developed Countries, Medium Income Developing Countries and Economies in Transition) the number of projects does not appear to be, at first instance, proportional to the scale of the task.

However, the total amount of money expected to be mobilised by the GEEREF initiative may be as large as €1 billion. This figure is based on securing a significant amount of leverage of private finance at each of the three levels that the fund operates. Such a level of funding would generate up to 1 Gigawatt of clean energy and supply between 1 and 3 million people with sustainable energy services. This leaves some uncertainty regarding the specific results that can be achieved. It is also important to consider that this amount of additional private risk capital is subject to ideal conditions, which are not likely to be found given the current international financial crisis. The present low level of international investments could constitute a significant obstacle to the expected scaling-up of this fund.

The *Additionality* principle requires that the funds are 'new' and 'additional' to existing aid requirements: they should be over and above ODA (Official Development Assistance). The criterion is to verify whether the fund is additional to ODA. In terms of public funding, GEEREF has been registered as ODA by the OECD Development Assistance Committee (DAC), with the EC contributions to be reported in the annual DAC co-operation report. This makes any assessment of additionality very difficult. Clearly, private investments are not considered part of ODA. It is possible to question whether or not all the private investment is additional, because some may have been invested in similar activities if GEEREF did not exist.

GEEREF will make 'patient capital' investments in the three sub-funds (of high, medium and low risk). GEEREF's financial commitment will subsequently attract private investors by offering to subordinate capital repayments and/or dividends until private investors have received an attractive return, i.e. the so-called hurdle rate, estimated to be around eight per cent. The public equity component will accept lower returns and longer repayment periods, on a 'first in – last out' basis. This secure return and reduction in capital risk may

draw some investment that would have happened anyway to be directed through GEEREF. However it means that mitigation finance here is considered as an investment that will generate returns, instead of loans that create debts in recipient countries. These returns will incentivise new investments in a sustainable way lasting for a longer term than other similar initiatives. In this case additionality is respected. This public-private partnership structure can therefore be seen to be more in line with the cooperation action approach rather than with the donor and recipient model and highlights the potential financial sustainability of the fund. Under the donor recipient paradigm it is more likely that the initiative would end when the money raised has been spent.

In responding to the question 'how to raise the money' the *Democratic Governance* principle can be adopted. Democratic Governance ensures that all decision-making power, rights, and responsibilities are equitably distributed among the different actors represented in the programme. In the case of GEEREF it is addressed towards both investors and national countries where the investments take place. As not much information is available about how and by whom decisions will be taken it is not possible to fully assess this criterion. In fact, as the financial participation in GEEREF is based on a voluntary scheme, both at the public and private level, it is difficult to evaluate whether these decisions have been taken respecting democratic governance. The decentralised structure of the fund reveals that decisions should not be concentrated in one main actor but distributed among a large number, favouring a democratic approach.

Nevertheless, a criterion used regarding the fund governance can be built on the basis of the commitment of different actors: at two layers, both public and private. The first considers the level of public commitment. The presently available information (April 2009) is that only two countries have showed serious interest in financing the fund: Norway and Germany. The second considers the level of private commitment. The involvement of the private sector can be split into two parts: the sub-fund managers and the investors. The sub-fund managers have to respond to a set of criteria about how the money will be invested in individual projects. The criteria set by GEEREF require that projects are locally grounded with a track record in the clean energy sector. They must provide a realistic pipeline that gives evidence of a viable business plan and should be focused on small and medium sized clean energy projects (of less than 30 Megawatts). Specified environmental and socio-economic impact assessments should also be submitted. Individual investment decisions however will be taken by the sub-fund managers and the involvement of recipient countries is presently unclear. Private sector involvement is based on a spontaneous and voluntary approach and so more difficult to evaluate.

In relation to the principles that determine how to raise climate funding, *predictability* is fundamental. It requires that funds should be generated in as stable and predictable a way as possible. A criterion to evaluate stability is the analysis of the leverage factor of public funds. It is calculated by dividing the amount of private funds by the amount of public funds. If the leverage factor is not decreasing it means that the fund has been successful in attracting and mobilising private funds. However, it is likely that the involvement of private sector will not be stable and predictable, as it will be subject to the financial yield of the projects. The implementation of projects in many of these areas also entails high risk so the yield could be volatile, making it difficult for investors to decide to invest in GEEREF. At the same time, their private investments would be favoured by the patient capital, which is designed to ensure them guaranteed returns.

## 6. Delivery of financial resources and investments

To answer the second question: ‘How to spend the money raised’ there are various principles to be considered. First of all *Harmonisation* is crucial. Climate funds should not be fragmented and duplicate other initiatives. GEEREF’s aim to address the gap in funding ignored by other initiatives appears consistent with this principle. Another element that confirms the respect of harmonisation is that the fund also plans to help CDM projects take off in Africa and elsewhere.

*Access for the most vulnerable* appears to be central to GEEREF’s poverty reduction agenda. The areas that are most exposed to the risks of climate change should therefore be prioritised. This is respected by the aims of GEEREF which state that it wants to channel funding to such areas. However, the delivery of these projects on the ground is still uncertain. Access needs to be ensured by providing rural communities, and particularly women, control over credit, resources and technologies. Access to credit could be achieved if the fund were to implement micro-finance programmes. Although the GEEREF agenda considers micro-finance, it does not seem to be realistically adopted. Microfinance usually utilises very small-scale funding (usually less than \$200 per operation) which is in considerable contrast with the \$10 million projects planned to be funded through GEEREF. To ensure that the resource access criterion is met, local communities need to be the beneficiaries of the energy produced by the GEEREF funded projects.

In terms of *access to technology* the scale and complexity of the technology used should be adequate for the socio-economic situation of the country. The emphasis is on deploying technologies with a proven technical track record in regions that are currently ignored by commercial investors. Small hydro and biomass could comprise a large part of investment prospects, with on-shore wind also offering significant potential. Solar energy could provide stable solutions for remote areas. Co-firing solutions (e.g. burning coal together with biomass), energy service companies and other small and medium-scale clean energy solutions will also qualify. In order to ensure access, all these initiatives require a large number of education programmes to provide know-how to local people, which would enable them to use these technologies effectively. This finance mechanism should be adaptable and appropriate to local market conditions and implemented in ways that maximise social and economic development co-benefits.

## 7. Issues that the fund needs to address

*The challenge of multiple objectives:* the aims of this initiative have as much to do with public policy goals as with market actions and private sector practice. This can be seen in the fund’s wide ranging objectives that are directed at climate mitigation, energy security and poverty reduction. These multiple objectives can create tensions, for example with respect to the maximum size of investment. Supporting projects that address climate mitigation may suggest a larger-sized activity than providing energy supplies to under-served populations. The equity investors, both public and private, need to direct the fund managers as to which of these objectives is the primary goal of the fund; and the fund managers need to highlight the trade-offs between these different objectives.

*Innovation and flexibility:* GEEREF is an innovative approach that, if successful, could have a significant impact in terms of climate change mitigation and in the delivery of sustainable energy supplies in developing countries. There are good grounds to support a flexible approach when developing such an innovative instrument. This raises some challenges for sovereign investors whose contributions are sourced from national budgets.

The need to adapt to new and changing conditions will likely continue, placing a significant burden of responsibility on the GEEREF Investment Committee. The Committee's policy guidance to the fund managers will need to be kept under continual review to ensure that gains can be maximised.

*The leverage factor:* A key question is how much commercial financing can be mobilised and leveraged by a given amount of public money? An assessment of experience with a number of different models of public finance mechanisms shows that typical leverage ratios range from 3 to 15:1 (UNEP, 2008). However, it is important to realise that such calculations represent programme capacity: the actual amount of capital mobilised depends on the size of the pipeline of bankable projects seeking investment. Any supply of capital needs a corresponding demand for financing if programme leverage is to be achieved.

*Speed of action:* With regard the quoted projected benefits of GEEREF, these depend entirely on the overall size of the fund and the amount of private equity that is brought in, as well as the number of projects that are supported. It is telling that to-date no private investors have been secured to offer 'patient capital'. Being the first of its kind, the GEEREF lacks any previous track record upon which private sector interest can be built. Under such circumstances, speed of action is paramount so that early interest can be capitalised upon. This represents another challenge for public entities, where decision making can take time.

*Supporting both supply and demand - the importance of technical assistance:* Examples exist of finance facilities that were created, but did not disburse because they failed to find and generate sufficient demand for the financing. Successful fund managers actively reach back into the project development cycle to find and prepare projects for investment; that is, they work on both the supply and the demand side of the financing equation. The GEEREF technical assistance is therefore a key component of this initiative. It will be much needed to engage local and international expertise to help improve project proposals and business plans.

## **8. Conclusion**

Overall, GEEREF appears to offer much potential, but there are also attendant risks. The potential stems from the amount of funds that may be mobilised and the method by which the funds are raised. GEEREF promotes development through the funding of renewable energy projects that do not generate any form of dependency. Successful projects should be self sustaining after the initial injection of capital and as the funding is based on equity capital there is no debt. Furthermore, equity financing ensures there is a mutual interest in the success of the projects, as both investors and project management have a stake in the outcome, promoting mutual accountability. Also, the distribution of decision-making power among the different actors should guarantee democratic governance. Prioritizing the most vulnerable and tailoring projects to specific needs in specific areas also has positive potential.

However, there are also risks. In the first instance, the quantity of investment cannot be assured in advance. There is very little information available regarding how successful GEEREF has been in attracting private capital to-date. However, some assumptions can be advanced. First, the current global financial crisis does not bode well for the mobilization of investments. Providing venture capital in new areas is not easy and the positive assumption on innovation and originality of this initiative also bring risks. Errors can be made and the time to repair them can be long because of the lack of experience in



managing a climate mitigation public-private partnership. The complex structure of the fund can also cost in terms of transparency and time. Already, there has been a substantial delay between the date when the fund was announced and the date when it became operational.

To conclude, GEEREF appears to satisfy more of the principles related to the first question of how to raise the money than to the second of how the money should be spent. Its main focus to-date appears to have been on finding a new mechanism, a public-private partnership, to attract private investment and this has taken considerable time to see through to fruition. A number of delivery issues appear unresolved, including securing the necessary pipeline of fundable clean energy projects, as well as ensuring country ownership over the subsequent development.

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