

Leverage in IFC's Climate-Related Investments

A review of 9 Years of Investment Activity (Fiscal Years 2005-2013)

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SUMMARY

Development banks – whether global, regional or national, or multilateral, bilateral, or domestic – can play an important role in financing climate-related investment and in leveraging significant resources from the private sector to do so. This report presents an analysis of the International Finance Corporation’s (IFC) climate finance experience over a nine-year period from July 2004 to June 2013, and provides insights on trends in the nature of the activities that have been financed, as well as the leverage and mobilization achieved.

Why this paper? Climate change is now acknowledged to be one of the greatest challenges facing our planet. The recent World Bank publication, *Turn Down the Heat: Why a 4° C Warmer World Must be Avoided*, describes well the perils that face our planet if we continue on our current emissions trajectories.¹ Climate change could erode or reverse the gains that the world has made in economic development. Action to move growth trajectories to lower-carbon pathways is urgently needed, and massive investment in mitigation and adaptation will be required. It is also widely acknowledged that this investment will need to come predominantly from the private sector. However, the private sector is reluctant to invest where the returns are not commensurate with risks, be they real or perceived. The public sector has a large role to play in creating an appropriate enabling environment conducive to investment in general, and low-carbon activities in particular.²

This paper demonstrates that significant private finance can be mobilized for climate-related investment. It attempts to glean lessons from IFC’s extensive experience in financing such investment; these insights could inform the deliberations currently taking place in the design of international climate finance mechanisms.

¹ See wrlld.bg/mBkXD

² See IFC (2011). *Climate Finance: Engaging the Private Sector* available at www.ifc.org/Report-ClimateFinance

Starting from a relatively modest level in 2005, when IFC began tracking its climate-related activities (21 projects amounting to IFC investment of \$211.7 million, or 4% of IFC’s own account commitments), IFC’s activities have grown in volume as well as in the breadth of sectors involved, to reach 14% of total own account³ commitments in 2013. This review encompasses 562 investments undertaken over the 2005-2013⁴ period in a variety of sectors, using the full panoply of IFC financial structures and instruments.

The analysis points to a number of interesting observations and insights:

There is great potential in leveraging private sector climate-related investment through multilateral development banks (MDBs). As IFC’s experience shows, one dollar of IFC climate-related investment brings in close to 3 additional dollars from other investors on average; and that one dollar of IFC investment has itself been leveraged on the strength of IFC’s shareholder capital. All MDBs follow a similar funding model, and would likely have similar leveraging potential.

Average leverage ratios, while useful, mask significant variations across project types.

A nuanced picture of leveraging potential emerges when the underlying activities are broken down into “like” categories. Even within a relatively homogeneous category, such as renewable power generation, there are variations depending on technology and market characteristics. The private sector does not behave in a homogeneous fashion.

A simple leverage ratio calculation does not always tell the full story.

Because of the way IFC accounts for investments, the leverage that will actually be achieved on the ground is not always captured. This is particularly the case for indirect investments, as through financial intermediaries (FIs). Direct investment financing better captures the actual investment that takes place. Neither case captures the broader multiplier effects of investment on income and economic development.

³ Investments that are carried on IFC’s balance sheet; does not include monies mobilized through third parties.

⁴ IFC’s fiscal year runs from July 1 to June 30.

Greater leverage is achieved with well-established technologies.

Where technologies are well established and understood by the market, it is easier to attract other financiers to participate in the investment plan. Where there are technical issues associated with a technology, as in solar thermal electric technology (concentrated solar power – CSP), or where the activities financed have not yet entered the mainstream, as in some types of energy efficiency (EE), leverage ratios are lower.

Leverage ratios are often higher for larger projects.

Big, capital-intensive projects tend to attract more financiers, as individual lenders run up against exposure limits. Large projects can also absorb the higher transaction costs associated with multiple lenders and complex project finance structures.

Lower leverage activities may still fulfill important market development roles.

In some cases, leverage appears to be low because of the conventions underlying project accounting for that type of activity (as in FI activity, for example). In other cases, the underlying technology may be less well understood by the market, and a critical mass of activity may not yet have been attained for market demonstration purposes, leading to limited co-financing interest on the part of other investors. IFC can play an important role in financing such activities, so as to bring them up the curve and create greater market awareness and acceptance.

Climate-related investment follows underlying market trends.

The growth in IFC's climate-related business, particularly for renewable energy (RE), reflects underlying market trends in the RE business, which has seen significant growth in many of IFC's markets. IFC has been ready and able to support such growth, but the supply of capital, while undoubtedly critical, is not necessarily the defining element in the growth of such activity.

Climate-related investment needs a conducive underlying investment environment.

Most of the activities that IFC

has undertaken to date have not involved explicit subsidies. This means that their creditworthiness derives from the prevailing business environment, policy and regulatory regimes in the countries involved. In the absence of such conditions, such investments will simply not take place – or will require additional risk mitigation measures.

Active “selling” of climate-related activities can help.

In some cases, climate-related opportunities may not be immediately obvious to a client. This is particularly the case in some EE improvements. In such cases, the difference between their adoption or not is the advice and technical expertise that can be brought to bear in a given project. IFC's in-house technical experts (engineers and environmental specialists) are key to such active client engagement, particularly in the context of IFC's Performance Standards⁵ which requires clients to consider resource efficiency possibilities.

Climate finance is often a portion of the overall financing.

In many cases, the climate-related portion could be tangential to the main investment being pursued, yet there may well be opportunities to reduce the project's emissions footprint through captive renewable energy (RE) or EE measures. Such components may be a small part of the project overall, but they should not be discounted for their impact or demonstration value. Here again, active client engagement by IFC's technical staff is key.

Blended finance can nudge investment into promising, but as yet commercially unproven areas.

Often, being a first-mover entails risks that make it difficult for a client to complete a financing plan on acceptable terms. The perceived risk may be too high even for a development finance institution like IFC. A small amount of concessional finance used to address such risks can act as a catalyst and mobilize the necessary financing.

What gets measured gets managed. It is only when IFC made a public commitment to grow its RE and EE activities⁶ that a tracking

⁵ www.ifc.org/performancestandards

⁶ In Bonn in 2005.

system was put in place; it is only when such investments began to be tracked and targets set that staff realized that there were several climate-related opportunities in the business that could, with a little extra effort, be materialized. IFC's commitment to grow its climate-related business has given a boost to such endeavors.

Advisory services and capacity building are essential components of some activities.

This paper has not examined Advisory Services (AS) and the role that it has played in supporting IFC's climate-related activities. The brief description of AS programs provided shows that some technical assistance and capacity building activities are essential building blocks for certain types of climate-related investment.

Leverage is an important “bang for buck” measure, but not the only one.

Leverage shows how much money was mobilized on the back of a public dollar, but it does not capture the impact of that money in terms of GHG reductions, or employment creation, or any number of other co-benefits on health and local pollution or other objectives that a country may wish to pursue. These should be areas for further work for IFC and others.

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INTRODUCTION

This paper examines IFC's climate-related portfolio, with a view to discerning trends in the nature of the activities that have been financed, as well as the leverage and mobilization achieved. It is based on an analysis of 562 investments undertaken over 2005-2013⁷. IFC is the private sector arm of the World Bank Group, and as such finances only private sector projects in developing countries. In 2005, IFC began tracking its activities related to climate change. Starting from a relatively modest level in 2005 (21 projects amounting to IFC investment of \$211.7 million, or 4% of IFC's own account commitments), IFC's activities have grown in volume as well as breadth of sectors involved to reach 14% of total own account commitments in 2013. In part, this is due to a greater focus by IFC and explicit institutional mandate, but it is equally attributable to trends in the market, where renewable energy's high growth rates – in particular in wind and solar photovoltaic (PV) – have begun to extend in a significant way to emerging markets.⁸

Why this paper? Climate change is now acknowledged to be one of the greatest challenges facing our planet. The recent World Bank publication, *Turn Down the Heat: Why a 4° C Warmer World Must be Avoided*, describes well the perils that face our planet if we continue on our current emissions trajectories.⁹ Climate change could erode or reverse the gains that the world has made in economic development. Action to move growth trajectories to lower-carbon pathways is urgently needed, and massive investment in mitigation and adaptation will be required. It is also widely acknowledged that this investment will need to come predominantly from the private sector. However, the private sector is reluctant to invest where the returns are not

⁷ IFC's fiscal year runs from July 1-June 30, so the data cover the period July 1, 2004 through June 30, 2013. In two of the projects analyzed, IFC did not have any investments of its own account, but provided a platform for investments from other sources through syndication.

⁸ See REN21 (2013). Renewables 2013 Global Status Report, available at ren21.net/gsr

⁹ See wri.org/mBkXD

commensurate with risks, be they real or perceived. The public sector has a large role to play in creating an appropriate enabling environment conducive to investment in general, and low-carbon activities in particular.¹⁰

The multilateral development banks can play an important role, too.¹¹ This paper demonstrates that significant private finance can be mobilized for climate-related investment. It attempts to glean lessons from IFC's extensive experience in financing such investment; these insights could inform the deliberations currently taking place in the design of international climate finance mechanisms.

LEVERAGE

Leverage implies the use of a lever to enhance an action. In a financial or business context, it is the ability to have a relatively small amount of cost yield a relatively high level of return, and generally refers to the amount of debt that can be raised on the strength of equity.¹² The Overseas Development Institute defines leveraging as the process by which private sector capital is mobilized as a consequence of the use of public sector finance and financial instruments. ODI recognize that there is no uniform methodology to calculate leverage ratios, which can be expressed as the ratio of total funding to public funding; the ratio of private funding to public funding; or the ratio of specific public climate finance to broader public and private finance flows.¹³

¹⁰ See IFC (2011). *Climate Finance: Engaging the Private Sector* at www.ifc.org/Report-ClimateFinance

¹¹ See WRI (2012). *Public Financing Instruments to Leverage Private Capital for Climate-relevant Investment* available at <http://www.wri.org/publication/public-financing-instruments-leverage-private-capital-climate-relevant-investment>

¹² A discussion of different approaches to leverage is contained in Brown, J. et al (2011) *Improving the Effectiveness of Climate Finance: A Survey of Leveraging Methodologies*, available at <http://climatepolicyinitiative.org/wp-content/uploads/2011/11/Effectiveness-of-Climate-Finance-Methodology.pdf>

¹³ <http://www.odi.org.uk/resources/docs/7082.pdf>

Mobilization is sometimes used interchangeably with leverage, and can also be expressed along different dimensions. At IFC, mobilization is traditionally used to refer to the marshaling of resources from other investors alongside an IFC investment, typically (though not exclusively) through its syndicated lending program.¹⁴ More recently, the creation of IFC's Asset Management Company provides an avenue to mobilize and manage funds on behalf of a wide variety of institutional investors.

In some quarters, leverage implies a more complicated calculation that attempts to measure the value of the lower return that investors may be induced to accept on account of the risk-mitigation provided by the public support. The concept of "net" flows, evoked in the Secretary-General's High-level Advisory Group on Climate Change Financing report (AGF), reflects this sentiment. The AGF define "gross" flows as the total amount of private finance, offset finance, and non-concessional lending from multilateral development banks, and "net" flows as the grant-equivalent transfers from developed countries and the net benefit to the developing countries for non-concessional public and private flows. This net benefit would essentially be the value of the lower return that investors are prepared to accept on account of any risk-mitigation that they receive through public or quasi-public support (concessional finance, for example, or loans from multilateral development banks).¹⁵

In this paper, the term leverage is generally used to denote the ratio of project cost (as represented by the financing plan) to IFC's portion of the financing. Since IFC tracks the climate component of its financing separately, the leverage number provided uses the climate component of the project cost as the numerator, and the corresponding IFC "climate claim" as the denominator.¹⁶ Average leverage

ratios are generally presented as simple averages of the individual leverage ratios contained in a category, as this was deemed more representative of individual project experience.

TYPES OF FINANCING

IFC provides financing through loans and equity on commercial terms for investment projects. It also provides advisory services for capacity building and market development on a fee or grant basis, and, alongside its own funds, channels concessional funding provided by the Global Environment Facility, the Climate Investment Funds or other bilateral funding sources (Blended Finance). This paper is focused on IFC's investment financing activities, and includes concessional finance provided towards such investments.

The vast majority (by dollar volume) of IFC's activities remain centered in its investment financing. Loans are classified as A, B or C: A loans are senior debt held for IFC's account; B loans are syndicated to other financial institutions, but IFC remains lender of record; and C loans are subordinated debt or quasi-equity products that generally comport higher risk but also provide a higher return. IFC is also able to take minority equity positions in projects.

Instruments such as guarantees and other credit enhancement are treated as loans for the purposes of IFC's financial statements.

IFC's Advisory Services (AS) provide advice, problem solving, and training to companies, industries, and governments in four areas: access to finance, investment climate, sustainable business, and public-private partnerships. Some AS programs are directly relevant to climate-related business development, such as the Resource Efficiency Program (see Box 2). However, given its investment focus, this paper does not examine IFC's AS activities. Where relevant, the role of AS is pointed out, and it is hoped that

¹⁴ IFC can also arrange parallel loans.

¹⁵ http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF_reports/AGF_Final_Report.pdf

¹⁶ If it is easier to think of leverage as the number of additional dollars mobilized on account of one dollar of IFC Investment, then please subtract one (1) from the leverage number reported.

additional work will be done to do full justice to the topic.

IFC is also an executing agency for IBRD as implementing agency of the Global Environment Facility (GEF), which from 2005 to 2013 has channeled \$76.3 million through IFC towards climate-related projects. The Clean Technology Fund (CTF) of the Climate Investment Funds (CIF), in operation since 2008, has also provided \$93 million in concessional financing towards climate-related projects financed by IFC through 2013. In addition, the Canada Climate Change Program (CCCP) has provided \$85.4 million in concessional financing towards climate-related projects from 2011 to 2013.

IFC'S CLIMATE-RELATED ACTIVITIES

Since 2005, when IFC first began tracking its climate-related activities, the climate-related portfolio has grown significantly. Climate-related activity is tracked annually through “commitments.” A loan or equity investment goes through several steps before financing is committed: a project team is constituted to “appraise” a project once the initial project proposal is deemed worth pursuing; the appraisal involves a detailed review of the project’s technical, environmental, social, financial and economic aspects. This process can take several months, depending on the project characteristics and level of preparation. A project is “approved” by the Board once it has passed this due diligence and an internal review; following approval, it is “committed” when the investment documents are signed; it is then “disbursed” according to an agreed schedule. Once committed, the investment enters the committed portfolio. The investment exits the portfolio when the loan has been repaid or the equity stake divested, or if the investment has been cancelled for some other reason.

What Constitutes a Climate Investment?

The guiding principles underlying the definitions and typology that IFC uses for climate-related investment and advisory projects are contained in a document entitled *IFC Definitions and Metrics for Climate-Related Activity*.¹⁷ This typology went into effect in IFC’s FY2013. Sometimes, the entire project can be considered climate-related; in others, climate-related activities will be a small component of a broader project. IFC isolates the climate-component of the project for tracking and reporting purposes. Thus, it determines the share of climate-related activities within a given project, and then calculates the IFC “climate claim” based on a pro-rata share of the financing provided. For example, if total project cost is 100, the climate component is 50, and IFC has financed 20 overall, the “climate claim” will be 10.

IFC now uses three broad categories to define climate-related investment: Mitigation, Adaptation, and Special Climate. However, prior to FY2013, activities were classified as renewable energy (RE), energy efficiency (EE) or “other” climate, and the dataset available for review is organized along this categorization. RE and EE are, of course, subsets of mitigation, which also includes waste management, transport, carbon markets and other activities – some of which were previously captured in the “other” category. As a general rule, IFC classifies activities as mitigation if the project can show a GHG emissions reduction according to the relevant IFC GHG emissions reduction methodology.¹⁸ A distinction is also drawn between direct and indirect mitigation.¹⁹ Projects with climate-related objectives for which such methodologies have not been defined are classified in the “Special Climate” category.

¹⁷ Available at www.ifc.org/ghgaccounting

¹⁸ Methodologies have been defined for 10 sectors and are available at www.ifc.org/ghgaccounting

¹⁹ Direct mitigation activities result in GHG reductions attributable to changes in an IFC client’s operation as a result of IFC investment or advice. Activity by an IFC client that leads to GHG reductions by a third party is called indirect mitigation.

This report categorizes IFC's climate-related activities along the broad dimensions outlined below. As previously discussed, the categorization now employed by IFC has undergone some change, and activities are now classified as mitigation, adaptation or "special climate", but given that one of the objectives of the report is to discern trends in the leveraging experience of different project types, the previous categorization has been maintained for the purposes of the analysis.

RENEWABLE ENERGY (RE) is energy obtained from natural resources such as sunlight, wind, or sustainable biomass. IFC includes hydroelectric power projects in its accounting for climate-related investment. Within RE, IFC's investment activities span the spectrum from direct RE generation projects to support for equipment manufacturing and investing in funds; IFC's Advisory Services works with regulators on the enabling environment, provides public-private partnerships support, and helps develop the market for clean energy at the base of the pyramid.

Power generation projects are those where energy is generated and sold to the grid or micro-grid, or for captive use where the energy is used internally by the project with limited external sales (if any). Renewable fuel projects are those where biofuels are produced. Component manufacturing involves the financing of manufacturing activities associated with RE equipment.

Renewable financing projects are those where financing is provided to a financial intermediary (FI - financial institution, bank or fund) for on-lending or investment in any of the RE activities above or as part of a trade finance guarantee. Often, such transactions will include both RE and EE components.

ENERGY EFFICIENCY (EE) is the goal of efforts to reduce the amount of energy required to provide products and services.²⁰ There is potential for greater EE in practically all

²⁰ http://en.wikipedia.org/wiki/Efficient_energy_use

aspects of IFC investment activity. In industrial applications, process improvements can improve the efficiency of the process or process peripherals. Combined Heat and Power (CHP) investments co-generate heat and power at the facility, which is often less GHG-intensive than buying electricity and generating heat within the facility. The buildings sector offers large EE opportunity, as does EE in Transmission and Distribution (T&D) to reduce T&D losses in the power sector. Improvements in the efficiency of transport also come under this category. EE component manufacturing consists of projects that manufacture EE equipment.

EE financing projects are those where financing is provided to a financial intermediary for on-lending or investment in any of the EE activities above.

OTHER CLIMATE-RELATED ACTIVITIES include IFC's Carbon Finance transactions; investments in sustainable forestry, and any other activity that results in carbon reduction or provides other "green" benefits.²¹ IFC has detailed guidelines that describe the sorts of activities that can be considered climate-related or "green" to inform its tracking.

In the period under review, only one project was undertaken that could be classified as "**ADAPTATION**". This is largely due to the fact that there are few commercial opportunities in adaptation at the present time. With regard to climate-proofing, in many cases, the incremental costs associated with building climate resiliency into a project are simply internalized by the project and not accounted for separately. IFC is in the early stages of looking to mainstream identification and mitigation of climate risks across its investments. IFC announced its first adaptation commitment in FY13 and expects adaptation to be a growing area of business.²²

²¹ These would now be classified as mitigation or "Special Climate".

²² See www.ifc.org/climaterisks

OVERALL CLIMATE-RELATED INVESTMENT

The sections below provide data and details on IFC's climate-related investment activities, reported as amounts committed. These numbers are own-account only (i.e., investments that IFC will carry on its balance sheet) and do not include monies that may have been mobilized alongside IFC from other co-financiers, although those numbers will be picked up in total project cost. Throughout this report, investment numbers are reported at the

commitment stage (i.e., when the investment agreement has been signed). Disbursements may differ from the committed number if some portion of the committed amount is not disbursed on account of cancellations, changes in project scope, or droppage. However, for the purposes of this paper, the investment commitment number remains the best ex ante measure of project intentions and scope.

HISTORICAL EVOLUTION: Figure 1 situates IFC's climate-related commitments against total IFC activity in a given year for the period under review. Starting from a modest 4% of total own-account commitments in 2005, when IFC began tracking its climate-related portfolio, climate-related activity has grown consistently alongside, and in most years, faster than, IFC's overall investment portfolio.

Figure 1: IFC's Climate and Total Investment Commitments (Own Account) FY05-13

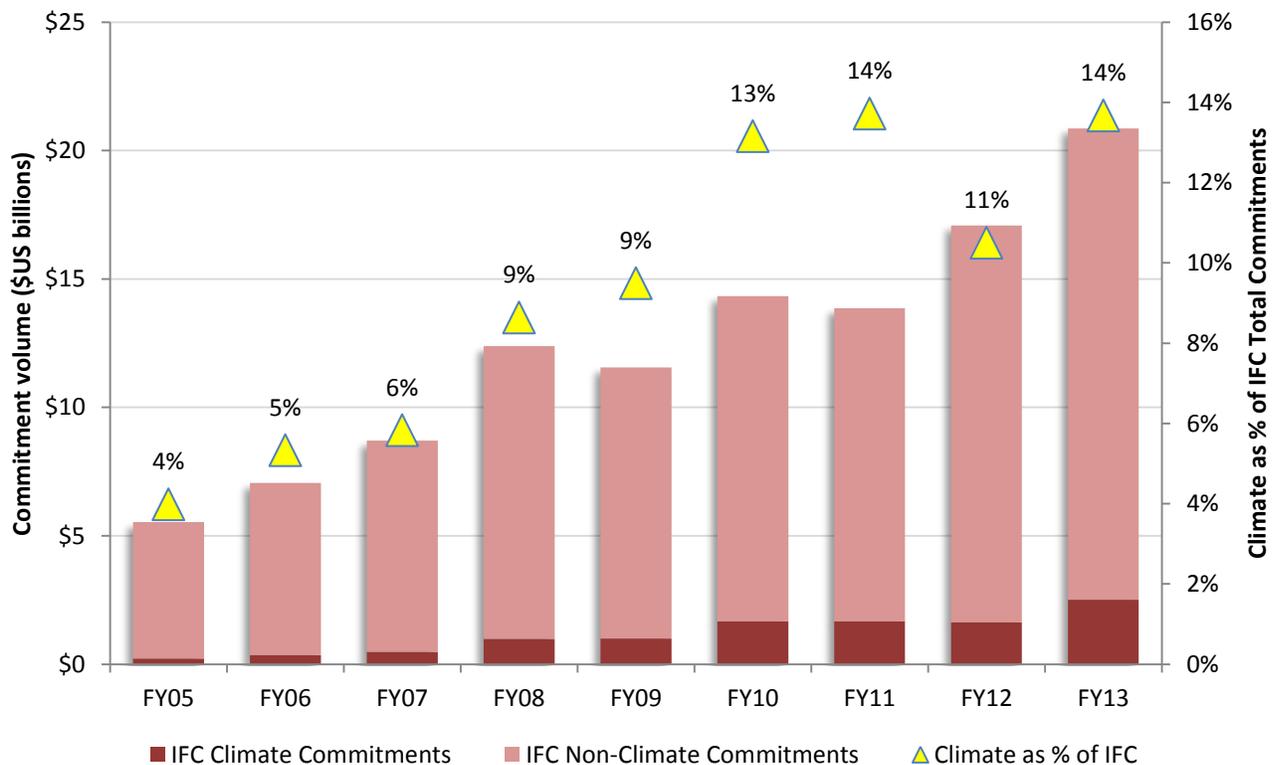
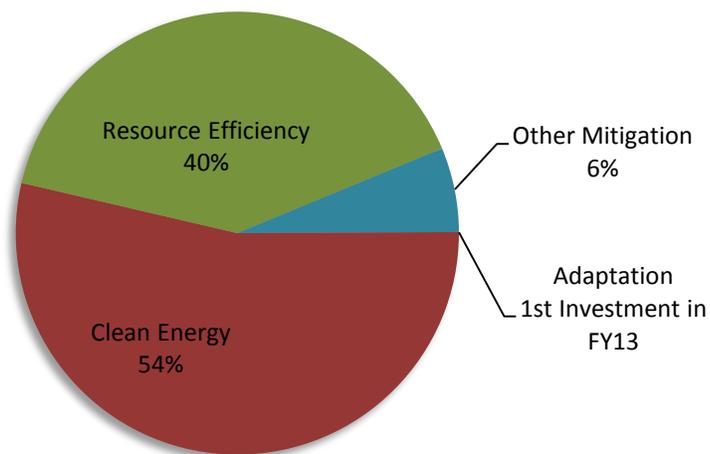
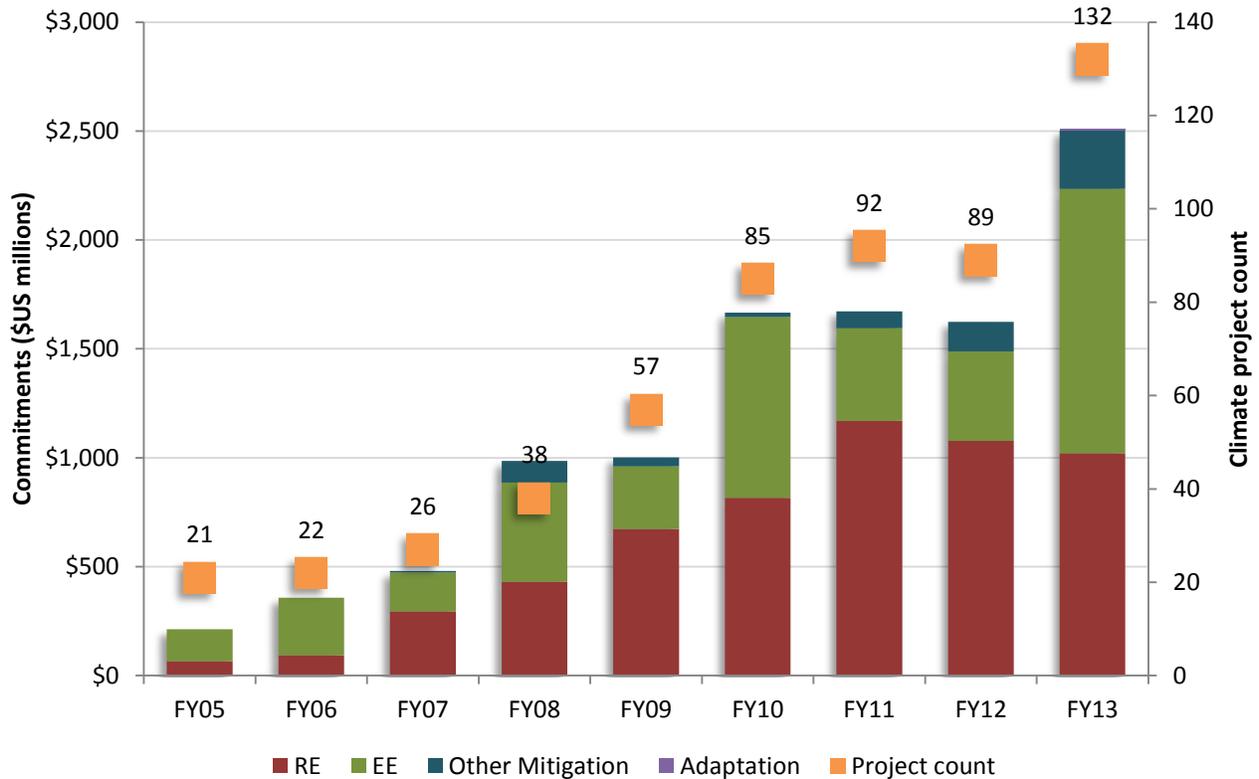


Figure 2 shows the evolution of IFC's climate-related investment activities over the 2005-2013 period, as well as period aggregates, broken down by major category of investment. Resource Efficiency encompasses investments

in EE across the portfolio (both direct support and via FIs), while Clean Energy comprises RE. The Annex contains aggregate data over the same time period, broken down by major category.

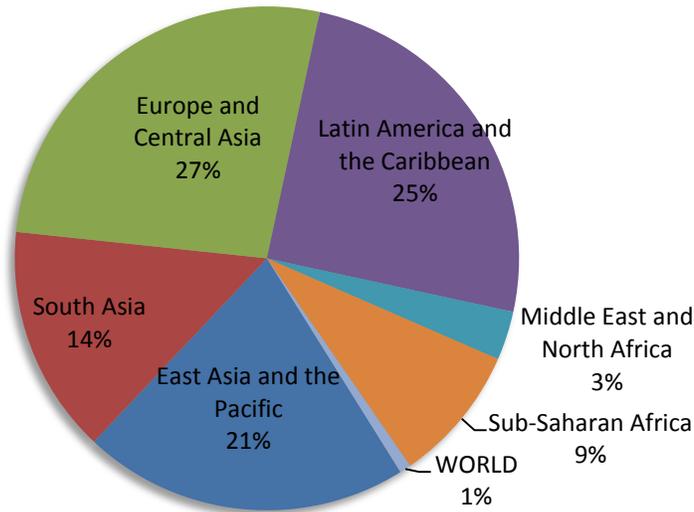
Figure 2: IFC Climate Business Commitments (Own Account) FY05-13 by Category



GEOGRAPHICAL DISTRIBUTION: IFC's climate business spans all 6 of IFC's regions – though volumes are different depending on the maturity of the markets, as can be seen in the graph below. Latin America and Eastern Europe hold the highest shares of climate

business, followed by East Asia. These regions are home to the larger emerging market economies, which have the market size and industrial development necessary to support domestic RE and EE activity.

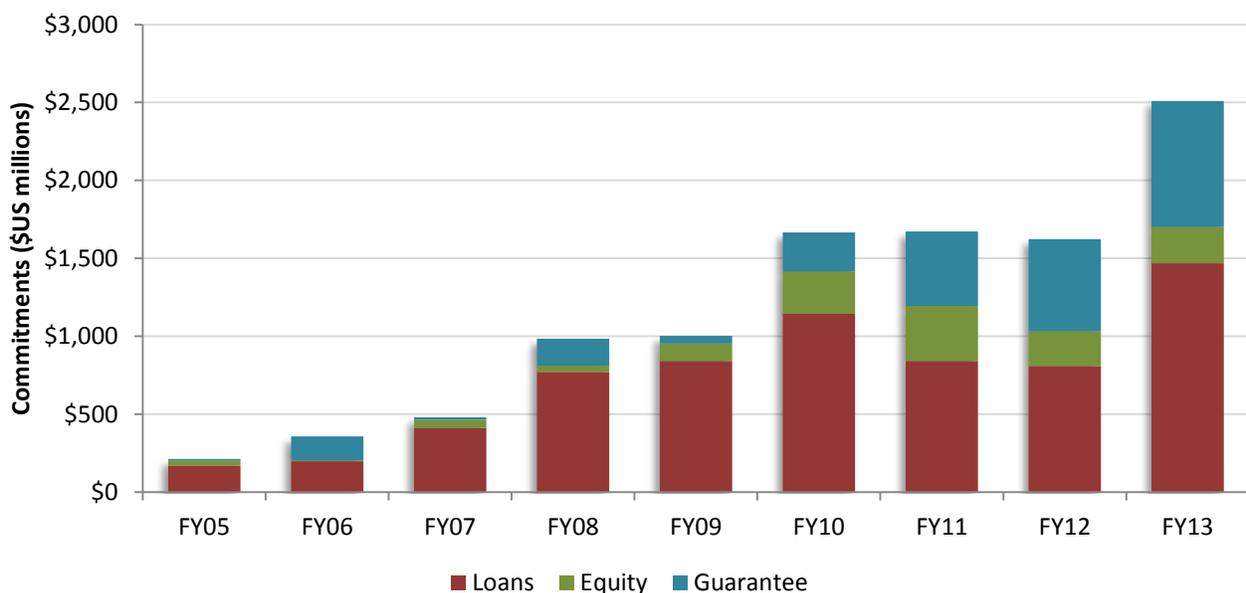
Figure 3: IFC Climate Business Commitments (Own Account) FY05-13 by Geography



TYPE OF INSTRUMENT: Figure 4 shows the evolution as well as the aggregate volume of IFC's climate-related investment activities broken down by debt, equity and guarantee instruments. Both in volume and project count

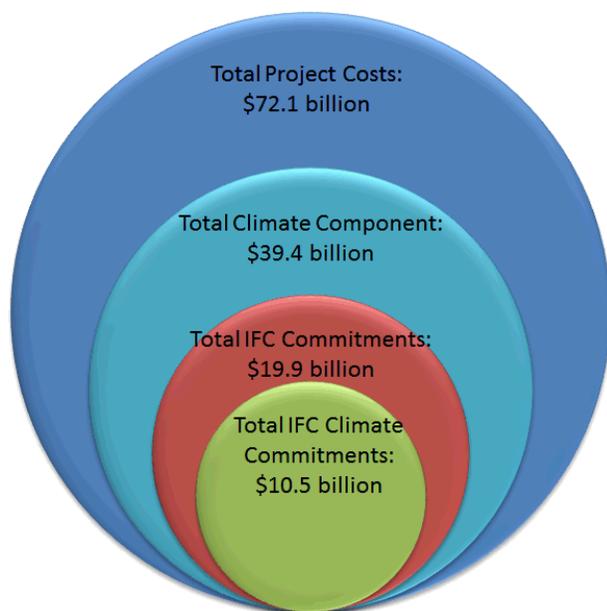
terms, IFC provides more financing through debt instruments that it does through equity or guarantees, although guarantees are a rapidly growing part of IFC's business.

Figure 4: IFC Climate Business Commitments (Own Account) FY05-13 by Type of Instrument



LEVERAGE: Figure 5 provides a picture of IFC's investments in climate-related activities and situates the IFC climate claim within the total IFC commitment, the total climate component of the underlying projects, and the total project costs associated with the investments.

Figure 5: Climate-Related Projects and IFC's Own-Account Commitments 2005-2013 (Totals)



Out of a total project cost of \$72.1 billion for climate-related investment over 2005-2013, climate components accounted for around 55%; IFC's financing towards these projects amounted to \$19.9 billion, and the "climate claim" reported was \$10.5 billion (calculated as a simple pro-rata share of the overall IFC financing). As the graph above suggests, leverage could be calculated along several dimensions. One is to look at total project cost, divided by total IFC commitment; in the case of the climate portfolio, this yields a weighted²³ average of 3.6, implying that one dollar of IFC financing mobilized close to 3 additional dollars of financing from other sources (essentially private). However, since IFC tracks the climate component of its financing separately, leverage

²³ The average obtained by using totals across the relevant projects. This means that one or two large projects can unduly influence the result obtained.

could also be calculated as the climate component of the project cost as a multiple of the IFC climate claim. On a simple²⁴ average basis, which is more representative of individual project experience, the project leverage was 4.1. Given that IFC will not, in most cases, finance more than 25% of project cost for greenfield projects²⁵, this means that leverage ratios achieved overall in the climate-related portfolio are very close to statutory requirements.

However, there is an additional aspect of leverage that must be pointed out here. IFC raises financing in capital markets on the strength of its balance sheet, which is itself derived from shareholders' contributions and retained earnings. IFC's balance sheet for 2013 reports a debt/equity²⁶ ratio of 2.6:1 – implying that IFC borrowed 2.6 dollars for every dollar of capital. In that same year, IFC reported total capital of \$22.3 billion, including \$2.4 billion of capital stock (the rest being retained earnings and other accumulated income), and total assets of \$77.5 billion, including investments of \$34.7 billion. One dollar of shareholder paid-in capital could thus be considered to have leveraged 14 dollars of IFC investment. This is a simplistic calculation, to be sure – one could argue that retained earnings represent foregone shareholder returns and should therefore be considered as shareholder contribution, or that the appropriate numerator should be total assets, for example – but it does demonstrate the very high leveraging potential that one dollar of public contribution, judiciously managed and deployed, can have on private sector financing.

The summary data presented above do not tell the full story on leverage. Different leverage

²⁴ The average of the individual leverage ratios of the underlying projects

²⁵ In some cases, and notably for brownfield (expansion) projects, IFC is able to finance up to 50% of project costs.

²⁶ Defined as the number of times outstanding borrowings plus outstanding guarantees cover paid-in capital and accumulated earnings (net of retained earnings designations and certain unrealized gains/losses); see http://www.ifc.org/wps/wcm/connect/92f23b804112384a89a1fffe5679ec46/AR2013_Results_Financial_Summary.pdf?MOD=AJPERES&Sections%206:%20Financial%20Summary

ratios were obtained for the different categories of activities, and understanding these differences could provide insights into market characteristics, investor behavior and the structural issues underlying different asset types.

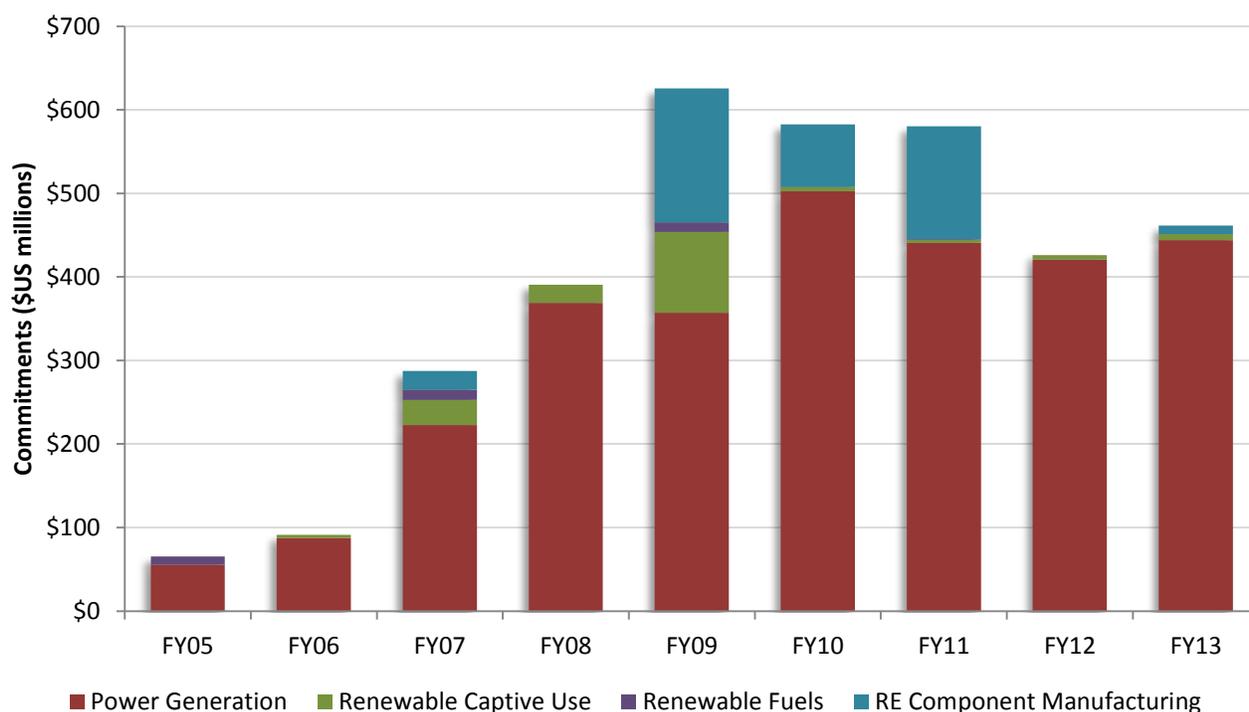
The sections below differentiate between IFC's direct investment activities – loans and equity provided to the project (often referred to as real sector) – and those where IFC's finance is provided via a financial intermediary such as a bank or private equity fund. A separate section presents IFC's blended finance activities, where additional calculations are provided to assess leverage per donor-funded dollar.

RENEWABLE ENERGY

Figure 6 breaks down IFC's real sector RE activities into broad constituent parts: power generation, generation for captive use, renewable fuels, and component manufacture.²⁷ Overall, IFC has financed 177 distinct projects that have included RE over 2005-2013. Please note that the data include only the climate claim of IFC's own-account commitments (i.e., financing that IFC carries on its balance sheet, as opposed to financing it arranges via syndications and other mobilization activity).

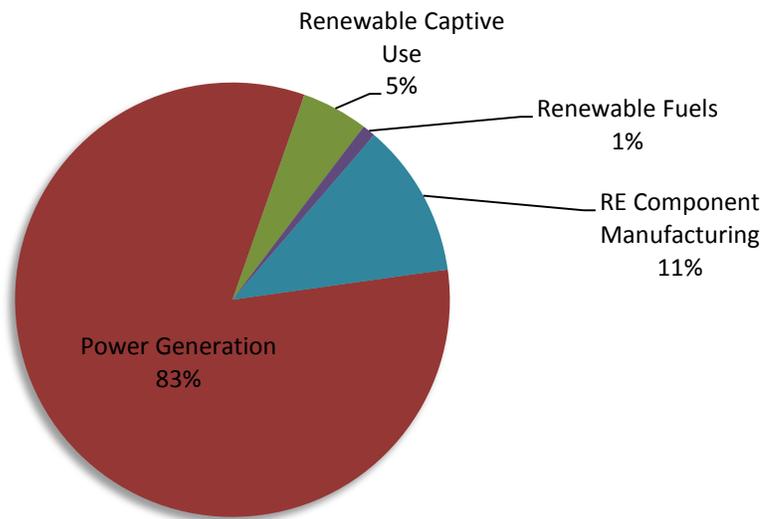
The largest single category of commitments was in power generation – both in terms of project counts as well as investment volume.

Figure 6: IFC Commitments in Renewable Energy (Real Sector - Own Account)



²⁷ Financing via intermediaries is not included here, but reported separately following this section. Component manufacturing is also discussed separately following the RE and EE discussion.

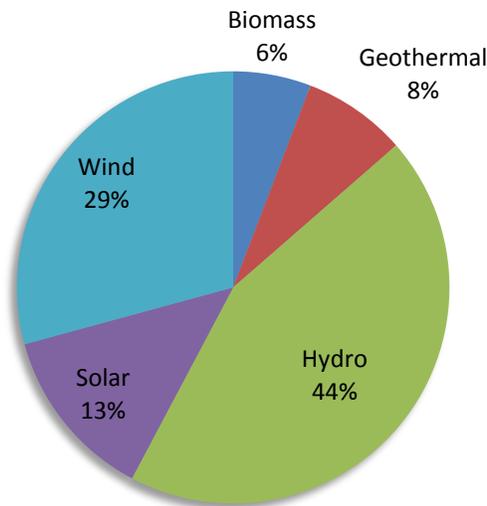
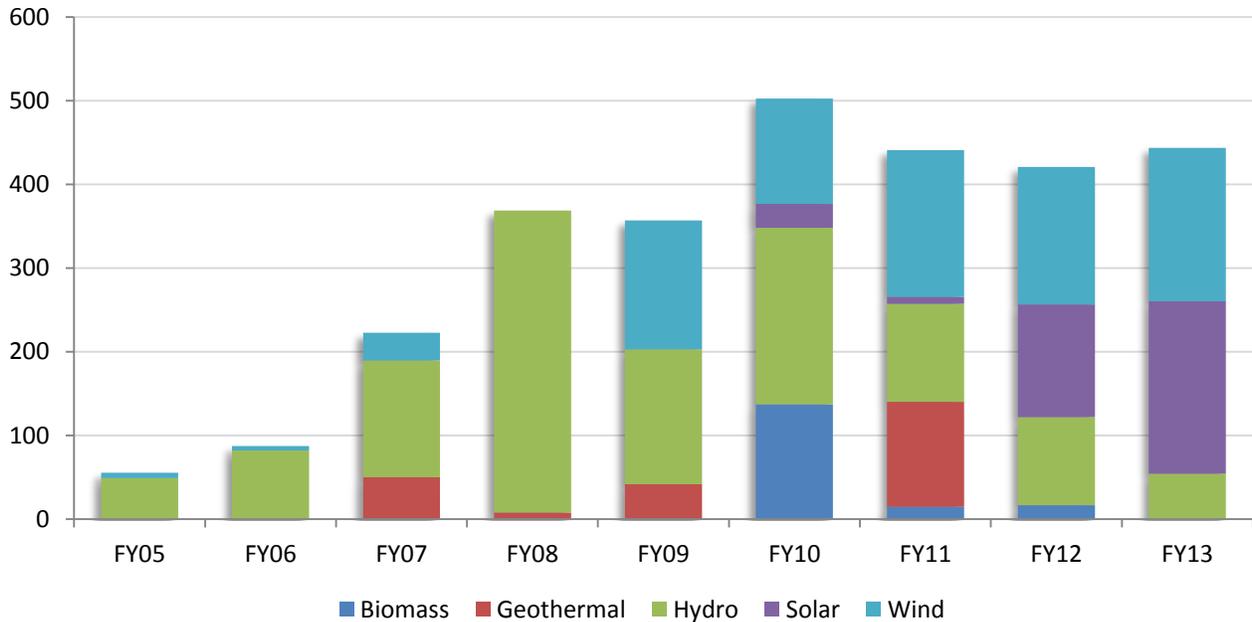
Figure 6 Continued - IFC Commitments in Renewable Energy (Real Sector - Own Account)



POWER GENERATION: This category comprises projects where energy is generated through renewable resources and sold to the grid or micro-grid. IFC has made 122 direct investments in renewable power generation in the period 2005-2013, with hydro being the largest single group. Not surprisingly, this is the category where the project's climate component comes closest to total project size, because projects are focused on the generation activity and rarely contain other, broader components.

The graphs below show the evolution of IFC's activities in power generation by major technology. Hydro holds the single largest share both in terms of project count and dollars invested. Hydro is a well-established technology, can be used for base load, and presents the best fit with energy systems based on traditional fuel sources. Furthermore, it is capital intensive, with relatively large project size and financing needs. Perhaps most importantly, it is often competitive in levelized cost and tariff terms to thermal generation, and so does not typically need specific regulatory support.

Figure 7: IFC Direct Commitments in Renewable Power Generation FY05-13



Solar energy consists mostly of solar PV (photovoltaic) technology, with two CSP (concentrated solar power) projects financed in 2012 in South Africa using CTF concessional funding support, and a couple of small solar thermal transactions. The biomass category comprises the use of wood waste, agricultural residues (such as bagasse) and plantation

wood. As can be seen in figure 7 above, there is increasing diversification in RE technology as non-hydro RE becomes more competitively priced and increasingly supported by regulation. Overall, IFC activity follows underlying market trends: there has been significant growth in RE capacity in developing countries in the period under review, with wind

and solar PV increasing their market shares in recent years.

Leverage ratios vary across the categories, with the highest leverage achieved in geothermal projects (8.7), followed by hydro (average 6.1). This could be a reflection of the perceived commercial attractiveness of the project: where the technology is well established and can cater to base load requirements, it is easier to mobilize other sources of finance alongside IFC. Conversely, where the technology is less well established, or faces technical issues that present challenges to the grid, perceived risk is higher and other sources of finance less readily available, resulting in lower leverage ratios. Wind and solar achieved leverage ratios of 3.5; biomass came in at 3.1. This could also simply be a matter of project cost and capital intensity. Larger projects are likely to need more

financiers as individual lenders run up against exposure limits. Smaller projects may not face this constraint, and IFC may be prepared to provide the totality of the financing required. Also, larger projects can tolerate the larger transaction costs associated with multiple lenders and complex project finance structures.

With a few recent exceptions, none of these projects have been undertaken with any concessional support. Their financial viability has therefore been based on technology cost reductions that have enabled competitive tariffs, or conducive policy regimes, feed-in tariff support and other regulatory measures. But for some projects, such as the concentrated solar plants in South Africa described in Box 1, concessional support was critical to the project.

Box 1: South Africa Concentrated Solar Plants

IFC invested \$145 million in two concentrated solar power plants in South Africa, representing IFC's first large scale investments in this technology and first for the region. The Abengoa Ka Xu project, worth a total \$934 million, included \$26.5 million in concessional funds, while another \$15 million in concessional funds supported the \$489 million Abengoa Khi plant. The two projects will provide 150 MW of power. The plants are using innovative proprietary technology to specifically address South Africa's needs, such as dry cooling technology that will reduce water consumption by two thirds. Alongside the investment, IFC is also providing technical and structuring expertise to address the challenges of financing the plants. The deals have won numerous project finance awards. The solar power plants will help diversify South Africa's electricity away from coal-fired power, which contributes heavily to greenhouse gases.

Interestingly, there has been a significant shift in IFC's power generation business from conventional fuel sources (fossil fuels) to renewable energy. As a comparison, over the same period IFC's conventional thermal power generation business accounted for \$2 billion of IFC financing – against \$2.9 billion of RE financing. In addition, out of the \$2 billion in conventional power, \$350 million was for EE improvements in the power sector. This was a significant area for climate business in FY13. Leverage ratios for conventional power generation have averaged around 8 - similar to the higher end of the RE power portfolio.

RENEWABLE CAPTIVE USE: this is RE generation for internal use within complexes, with limited (if any) external sales. The types of activities that would be classified thus would be bagasse use, captive hydro or wind; clients tend to be big energy users seeking to replace conventional energy sources such as fuel oil or diesel with solar, wind, biomass (historically considered to be waste) or hydro technologies. Many of these large corporates have introduced targets for RE within their own operations and supply chains, ahead of national regulations or requirements. Often, such activities will form part of a larger

rehabilitation or other investment project. The leverage ratios observed in this category bear this out: the climate component was around 18% of total project cost on average. While overall IFC leverage at the project level was 5.4 (on a weighted basis); the climate leverage ratios were around 4.3 (simple average) or 3.8 (weighted). This suggests that while IFC financing was a small part of the overall project, the climate component formed a large part of it. This could reflect greater perceived risk on the part of other financiers; this could also reflect active IFC “selling” of the climate-related technology as part of the overall project investment.

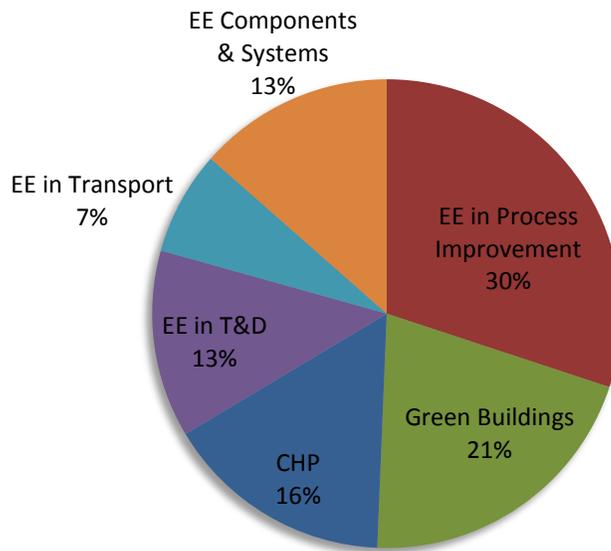
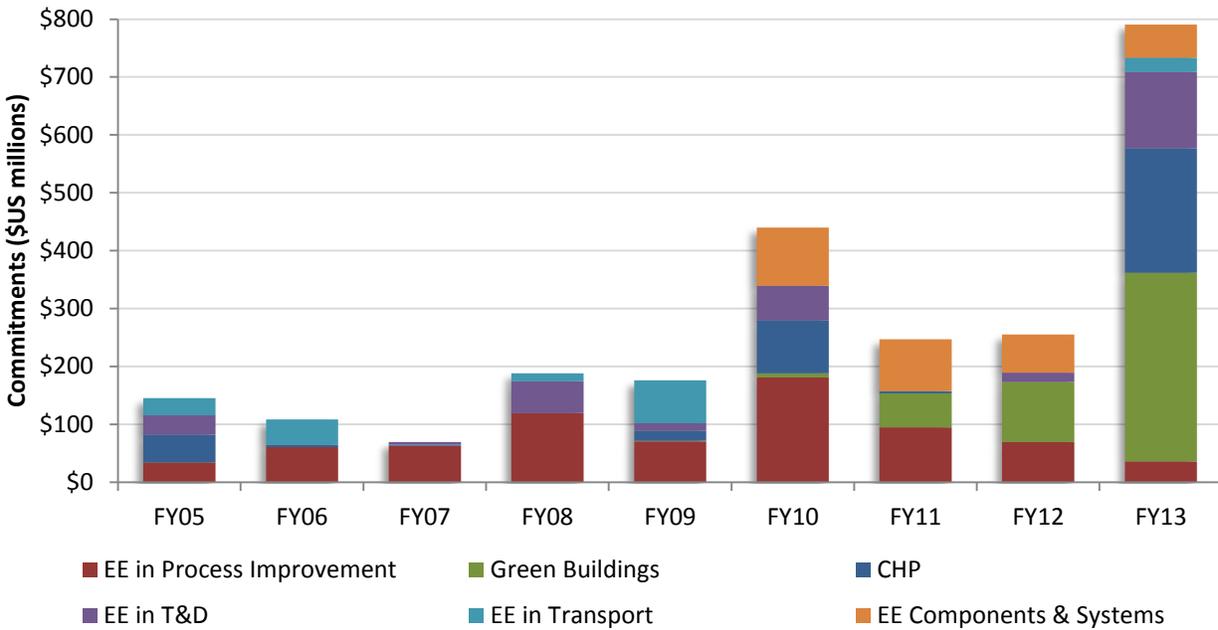
RENEWABLE FUELS: these are projects where biofuels are produced; to date there have been only 13 such projects in the portfolio, mostly concerning the manufacture of ethanol from sugar. The biofuel component is a very small part of the overall project – in this sample, around 11%. Surprisingly, leverage ratios for the climate component, at 7 (simple average), or 5.7 (weighted), were higher than overall IFC leverage at the project level (weighted average 4.7) – suggesting that the biofuel component was not a key driver in the project’s financing. IFC’s limited commitment to this sector does not reflect the underlying market opportunity, but rather some reluctance on the part of the institution to finance biofuels – either because other liquid fuel opportunities have been pursued instead or because of lingering sustainability concerns.

ENERGY EFFICIENCY

Figure 8 breaks down IFC’s EE activities into broad constituent parts: process improvements, Combined Heat and Power (CHP), buildings, T&D, transport, and component manufacture.²⁸ Overall, IFC has financed 169 distinct real sector projects that have included EE over 2005-2013, for a total climate claim of \$2.4 billion. As with the other data presented in this report, only the climate claim of IFC’s own-account commitments (i.e., financing that IFC carries on its balance sheet, as opposed to financing it arranges via syndications and other mobilization activity) is included. EE is one area where IFC’s in-house technical expertise plays a critical role: often, EE opportunities will be identified as part of project preparation for a broader investment project.

²⁸ Financing via intermediaries is not included here, but reported separately following this section. Component manufacturing is also discussed separately following the RE and EE discussion.

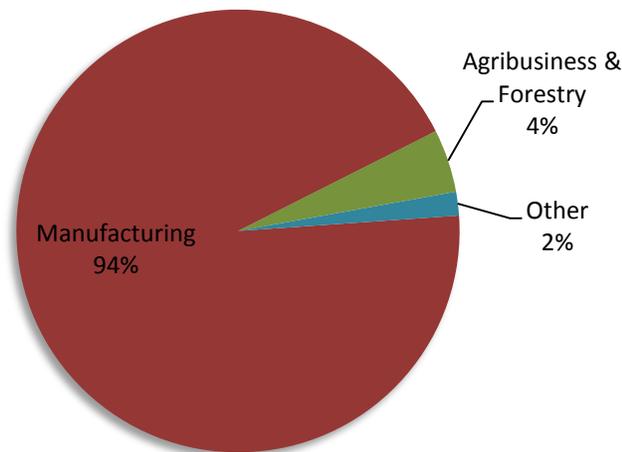
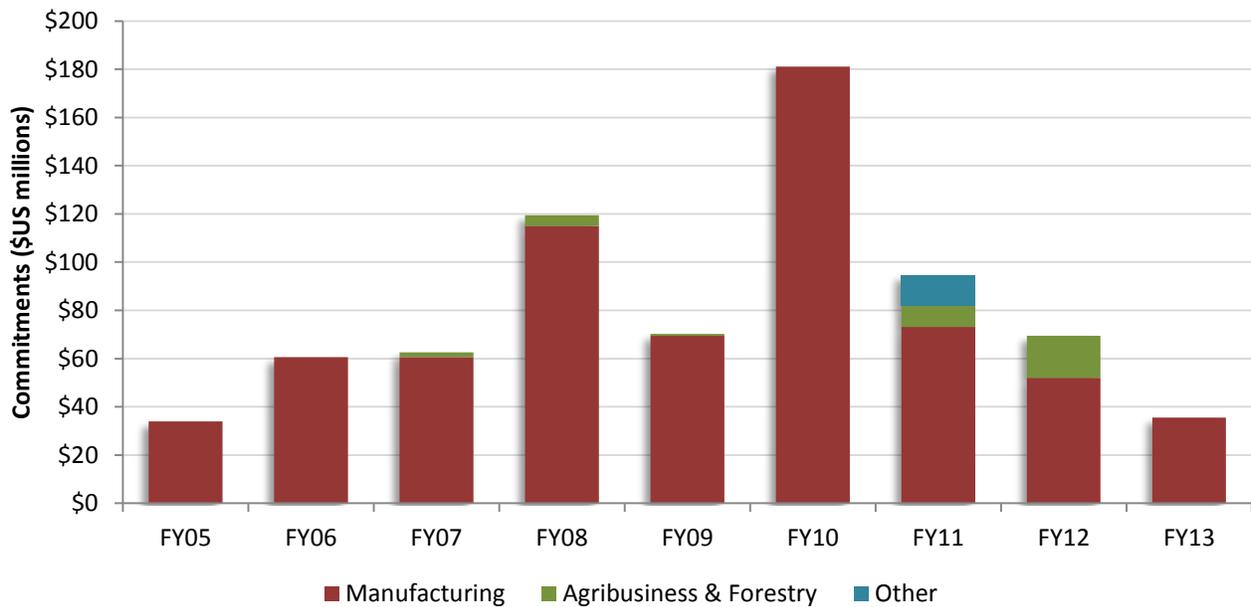
Figure 8: IFC Commitments in Energy Efficiency (Real Sector - Own Account)



PROCESS IMPROVEMENT: Figure 9 shows IFC’s EE process improvement investments, further broken down by sector. In general, process improvements consist of activities that increase output per unit of energy consumed. In manufacturing, such efficiency improvements could consist of utility system

improvements (replacing motors and boilers with higher-efficiency models) and process changes and modernization; production changes and changes in operational procedures could also contribute to efficiency gains, as is typically encountered in agribusiness.

Figure 9: IFC Commitments in EE Process Improvement (Real Sector - Own Account)



As shown above, manufacturing process improvement holds the largest share of investment, with over 84% of projects and 94% of investment volume. The climate-related component of process improvement investments averaged around 31% of total project cost, implying that the EE component was a small part of the overall investment. Rarely will a client undertake an EE investment as a stand-alone activity; for the most part, the EE improvements form part of a broader investment plan. Interestingly, the more established the technology, the more likely that

EE will be included as an add-on, rather than as the primary purpose of the transaction.

However, the averages hide significant variation by sector. Manufacturing shows the highest leverage (6.3), while leverage in the agribusiness sector was considerably lower (3.7). This is most likely a reflection of the difficulty in identifying and implementing EE improvements in the sector. Manufacturing processes likely represent “lower-hanging fruit” on the EE opportunity scale, and other financiers may be more familiar with such

investments and therefore participate in the financing.

An interesting use of AS to support climate-related investment activities is illustrated by the example below (Box 2). This program involves the provision of energy and cleaner production auditing services to the client through an IFC-

led advisory engagement (Resource Efficiency Program), followed by the necessary financing to implement audit findings through an IFC investment. IFC has approved a \$125 million financing facility (Cleaner Production Lending Program) to provide such financing, and to date, 14 transactions have been undertaken.

Box 2: Ukraine – Mriya: Cleaner Production Program

Mriya Agroholding produces and processes into sugar 1.5 million tons of sugar beets per year. Energy and water account for up to 25% of the processing cost of sugar. IFC's \$5 million loan was made following an audit financed and provided through IFC's Advisory Services. The \$12.5 million project involves repairing a water treatment station, installing a new press for beet pulp, and adding new press filters at four of the firm's six sugar refineries. Through these steps, improved production efficiency at Mriya's affiliated refineries is increasing capacity utilization by about 8.5%, while production costs are being reduced by up to 6.8% at the various refineries, generating the equivalent of about \$3 million in annual savings. Avoidance of penalties by the local regulator and utilities for high water use and wastewater treatment add to the company's savings.

WASTE HEAT UTILIZATION AND COMBINED HEAT AND POWER: Waste heat utilization consists of adding new energy sources, derived from waste heat or materials, into the production process, and represents significant EE opportunity. CHP entails the co-generation of heat and power at the facility, which is usually less GHG-intensive than the alternative of buying grid electricity and generating heat in boilers. IFC has done 14 projects in waste heat utilization and CHP over 2005-2013; the relevant component was around 62% of total project costs. Leverage

ratios for the climate component were 4.6, slightly higher than the overall leverage obtained in the climate portfolio. As in all other cases, the averages hide variation between projects, as illustrated by the example shown in Box 3. Waste heat utilization is a well-understood technology, with proven financial attractiveness, and most large energy users will have explored such options as a matter of course. Opportunities for IFC to actively promote such components would generally arise in the context of large retrofits or alongside debottlenecking exercises.

Box 3: Jordan – JIFCO phosphoric acid plant

Jordan India Fertilizer Company (JIFCO) is a joint venture between IFFCO, India and Jordan Phosphate Mines company, to build and operate a phosphoric acid project with annual capacity 475,000 tons of phosphoric acid in Eshidiya in Jordan. JIFCO will construct a 26-MW onsite power plant based on steam generated from the manufacturing process instead of using additional fossil fuels. This will meet JIFCO's own needs and sell approximately 2 MW electricity to the grid. The climate-related portion of the total project cost of \$673 million was around 3%, and IFC provided \$125 million towards the total financing – at a leverage ratio of 5.4 times.

BUILDINGS: IFC defines green buildings as having a 20% efficiency gains in energy, water, and embedded materials as compared to the local baseline.²⁹ EE opportunities in buildings can be found in heating, ventilation and air conditioning (HVAC) systems, lighting, and insulation. Most of IFC's 31 investments in this category have been in new building construction in the commercial, hotels, and retail sectors and have taken place in the last two years. Project size tends to vary from less than \$100,000 to \$210 million. This great variability, combined with differences in the recording of total project costs in the sample, make an analysis based on averages misleading, if not meaningless. Overall, leverage ratios tend to be low, due in part to several equity investments where IFC's investment is often recorded as total project size. IFC expects to see greater activity in the green buildings sector going forward.

TRANSMISSION & DISTRIBUTION: T&D improvements consist, *inter alia*, of upgrading substations and transformers, and the reduction of technical losses in the system. Most of these projects are undertaken with municipal or subnational entities (such as utilities), and to date have been focused on electricity.³⁰ In general, these are large projects, averaging \$230 million. Even though the climate component represents around 55% of total project costs, IFC tends to provide a small part of the overall financing required; the large project size means that other financiers are often involved, and thus leverage ratios are relatively high (simple average of 4.9 for the climate claim, and weighted average of 8.6). It could also be that the commercial viability of T&D improvements is well understood by the market, which results in reduced perceived risk and attracts other sources of finance.

TRANSPORT: To date, IFC has undertaken 10 projects that can be categorized as representing EE improvements in transport. The projects are large (over \$227 million on average) and IFC's share in the overall financing small (around 17%). The climate component of such projects is also relatively small, at 21%, and leverage ratios obtained were around 4.9 for the climate financing. The projects have included airline fleet improvements, engine replacements in barges, and smart traffic controls.

EE COMPONENTS MANUFACTURE AND SMART SYSTEMS: This category consists of investments that support the manufacturing of equipment for renewable energy and energy efficiency use – in general, investment that supports the supply chain for these technologies. This is a relatively new activity for IFC and to date, a total of 36 projects have been financed; the climate claim for these projects totaled \$730 million, out of a total project cost of \$5.7 billion towards which IFC provided close to \$1.1 billion of financial support. There are some differences between component manufacture for renewable energy and energy efficiency. Average project size was \$309 million for the renewable supply chain, almost completely composed of climate-related activities; IFC financing represented just 12% of total project cost, leading to leverage ratios that averaged 6 across the portfolio (see Box 4). For energy efficiency, the average project size was considerably smaller, at \$85 million; climate-related activities represented around 30% of the average project, with IFC financing around 30% of total project cost. Climate-related leverage ratios were lower, at around 3.5 – implying that the IFC involvement was most likely structured around the climate component. IFC also invests in smart systems, or projects where smart technology is used to discover and implement efficiency gains.

²⁹ IFC has created EDGE (Excellence in Design for Greater Efficiency), a mass-market building design and certification tool for emerging markets. See www.ifc.org/edge.

³⁰ The reduction of transmission losses in gas pipelines is a growing area and there will likely be increased activity in this category in the years ahead.

Box 4: Philippines – SunPower: Solar Cell and Module Manufacturing

IFC's loan provides funding for SunPower's 108-megawatt solar cell and module manufacturing plant in Laguna and a 466-megawatt solar cell fabrication facility in Batangas. The investment will strengthen SunPower's ability to manufacture its high-efficiency solar cells. The investment is expected to spur the use of solar power globally, support local economic growth and sustain the many skilled jobs that the company has created in the Philippines. The \$525 million project was entirely focused on RE component manufacturing, and IFC's \$75 million financing leveraged 7 times other resources to complete the financing plan.

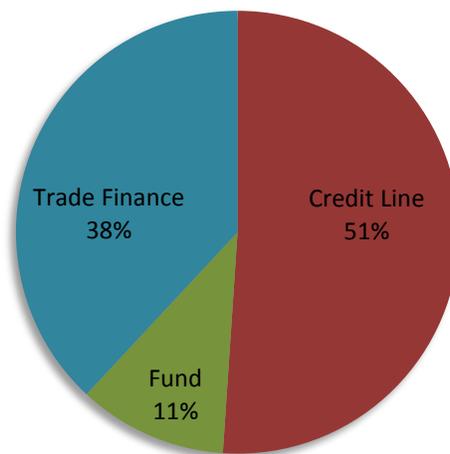
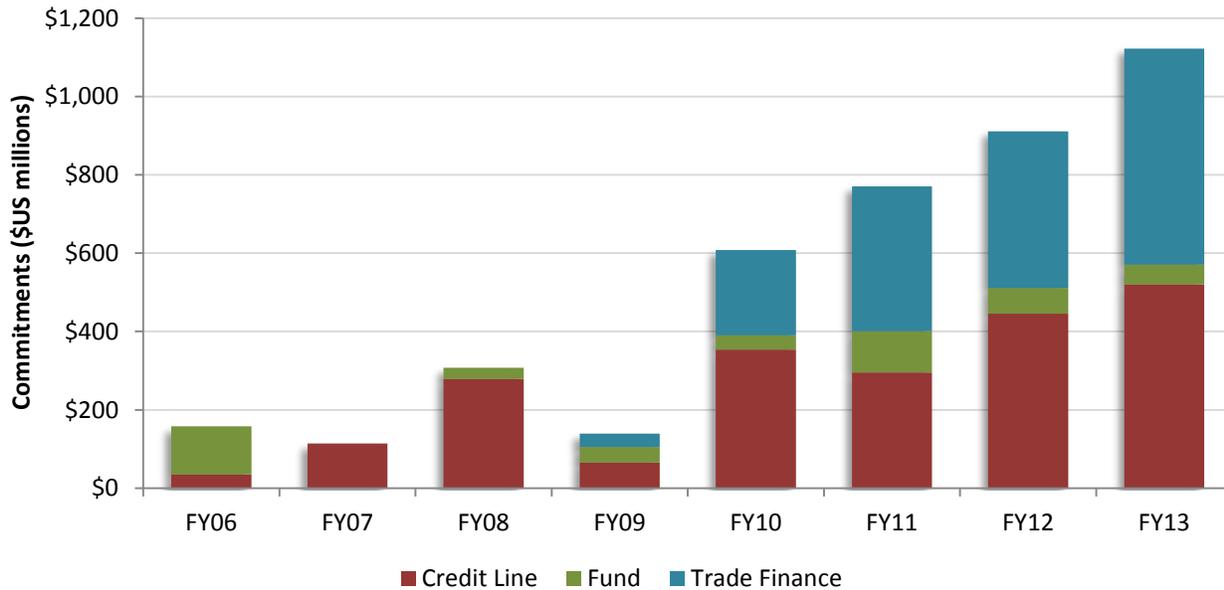
FINANCING VIA FINANCIAL INTERMEDIARIES

Financial intermediary (FI) activities are a significant part of IFC's overall business (60% in 2013) and are also a significant constituent of IFC's climate-related portfolio. IFC undertakes three broad categories of activities in this rubric. Debt finance is provided essentially through credit lines, but could also include guarantee facilities and leasing finance. The borrowing bank then on-lends the proceeds to its clients. Risk sharing and portfolio guarantees are particularly important for climate-related investment, but they are not tracked separately and are included under debt in this report. Funds investments are investments in equity made through private equity funds, where IFC, together with other financiers, will provide capital to a fund

manager who then manages the money on their behalf in exchange for a fee and participation in the upside. Trade finance is a relatively new area of activity for IFC, with the first transactions having taken place only in 2009. However, the growth in this category has been phenomenal: IFC commitments on account of trade transactions represent a third of the total FI climate-related commitments. These transactions are essentially structured as guarantees, which helps to explain the significant increase in the use of this instrument over the past years.

Figure 10 charts IFC's FI activities by the three major component categories. A discussion of these different categories follows. One point to note here is that FI transactions tend very rarely to be uniquely focused on RE or EE; in general, the investment will cover both RE and EE, albeit in varying amounts.

Figure 10: IFC Climate Commitments through Financial Intermediaries



DEBT FINANCE: This category consists essentially of credit lines and other debt facilities provided to banks. In the case of climate finance, these facilities are tied to the financing of a specific kind of activity. The bank establishes an asset pool of eligible activities; these “additional” activities are financed by the IFC credit line or other facility. Such financing can go up to 100% of requirements, and so leverage ratios can be low. This category contains 78 projects over the 2005-2013 period, and shows a large difference between weighted averages and simple averages (1.9

and 3.9, respectively), suggesting the presence of a few large transactions at the lower end of the leverage spectrum. However, these ratios are misleading. IFC financing tends to be a very small portion of the bank’s balance sheet (unlikely to exceed 5%); secondly, the bank itself will require some equity participation in the on-lending transaction (typically 20-30%), so the actual investment financed on the ground is considerably greater than would be implied by the leverage ratio obtained from analyzing the IFC portfolio.

Box 5: China – CHUEE – Financing sustainable energy via domestic banks

IFC's China Utility-Based Energy Efficiency Finance Program (CHUEE) started in 2006 with two Chinese banks and to date has grown to incorporate 6 partner banks in China for a total IFC financing of over \$300 million. IFC's program brings together, for the first time, three key players-- utility companies, suppliers of energy efficiency equipment, and commercial banks – to create a new financing model for the promotion of energy efficiency. It provides marketing, engineering, project development and financing services to commercial, industrial and multi-household residential sector energy users to support the implementation of energy efficiency and renewable energy projects.

By the end of FY 2012, banks participating in the program had provided loans worth close to \$800 million to 175 energy-efficiency and renewable-energy projects, reducing greenhouse-gas emissions. Capacity building services are provided through IFC's Advisory Services and financed by donors.

The major benefit of IFC's activities in this area is not the “bang for buck” that leverage ratios may indicate, but rather the long-term market penetration and market development that occurs. The CHUEE project (Box 5) is often cited as having been a particularly successful example of such FI lending. The critical success factor for this investment, according to IFC staff who worked on it, was the conducive environment that enabled such investments to take place. The CHUEE project tapped into this by providing regulatory and financial support and structures that allowed local banks to take advantage of the enabling environment.

FUNDS: IFC participation in a private equity fund generally does not exceed 25% of the total fund size, so one would expect to see leverage ratios around 4; leverage ratios registered for IFC's 24 funds investments were 3.9 for the climate component. However, as with debt facilities, these numbers mask the actual leveraging potential of funds investments. The funds manager will use the monies available in the fund for equity investments. Since the major objective is to

generate returns for his investors, the manager will attempt to leverage his equity investment with debt to the extent possible. Thus, individual project-level investments will be a combination of equity (say, 30%) and debt (70%); this in turn implies that one dollar of fund money is leveraged over 3 times, so the actual IFC leverage would be correspondingly higher for such investments.

TRADE: This is a relatively new area of IFC involvement, but has experienced significant growth not just in the climate portfolio but across the board in IFC. A trade transaction consists of credit enhancement of the local bank issuing a letter of credit (L/C) on account of a foreign trade transaction and typically takes the form of a guarantee confirming the issuing bank's L/C. The underlying activities could be the production, trade or use of RE and EE; the volumes so defined are included in the climate claim against this category. Project cost is taken to be the face value of the L/C, and since the credit enhancement is provided on this amount, the leverage ratio tends to hover around 1.

OTHER ACTIVITIES

This category includes activities that cannot properly be classified as RE or EE,³¹ or that represent special characteristics, such as carbon finance. Forestry activities are included here for historical reasons: through FY2012, they were classified in the “other” category, and it is only in FY2013 that they are included under the mitigation classification.

CARBON FINANCE: Between 2007 and 2009, IFC undertook 3 specific transactions related to its Carbon Delivery Guarantee (CDG) product. This instrument essentially addressed risk perceptions between the buyer of carbon credits (Carbon Emissions Reductions or CERs), generally for compliance purposes, and the seller of the CERs (an emissions reducing project in a developing country). By guaranteeing delivery of the contracted amount of CERs, IFC was able to remove project risk from the transaction and provide the buyer with an investment grade product; its guarantee fee was covered by the premium that such a product carried in the market. The collapse of secondary trading and continuing uncertainty of carbon markets has limited the uptake of this instrument. Given that the CDG contract was written for the face value of the contracted amount of CERs and guaranteed in totality, leverage ratios obtained are 1 for both the climate claim and the overall project.

FORESTRY: 8 projects that fit this classification were financed in the review period. The activities financed include carbon sequestration and sustainable plantations, both sustainable harvesting as well as new growth plantations. Project sizes are small, at an average of around \$60 million per project, and 72% of project costs are climate-related. Leverage ratios are also on the lower side, at 4.0, a reflection of both the size and nature of

³¹ As of November 2012, IFC classifies activities as mitigation if the project can show a GHG emissions reduction according to the relevant IFC GHG emissions reduction methodology. Projects which have climate-related objectives but for which GHG reductions are not easily or credibly quantifiable are classified as “Special Climate”.

the investment (expansion or rehabilitation projects rather than greenfield).

OTHERS: This category covers activities that contribute to GHG reductions but where such reductions are not credibly quantifiable, thereby precluding their inclusion on the mitigation category. Water projects, for example, would fall into this category. Given the wide range of activities covered in this category, it is not meaningful to examine project data and leverage ratios on an average basis.

BLENDED FINANCE

IFC has been involved in concessional financing³² activities since 1991, when it began to engage with the Global Environment Facility (GEF) and the Multilateral Fund for the implementation of the Montreal Protocol (Montreal Protocol). In 1996, it set up an Environmental Projects Unit to carry out such activities. The early investment activities were solely donor-funded and did not involve IFC’s financial resources. In addition to the GEF, IFC was able to mobilize other donor financing for such activities, and early investments in the clean tech space were carried out using such funds.

Subsequently, starting with the GEF-funded Earth Fund platform and later with the advent of the Climate Investment Funds, and the Clean Technology Fund in particular, IFC began to provide blended finance (a mix of donor-funded concessional finance and IFC’s own funds). In 2011, IFC also received funding from Canada for its blended finance activities in climate. All of these funds aim to address climate change by catalyzing private sector investments and advisory projects that would not otherwise happen under current market conditions. Blended finance can take the form of a variety of products and structures including risk sharing products, lower interest

³² Concessional finance involves the provision of financing at below market rates. This can be in the form of interest rate subsidies, longer tenors, structured equity products or other risk-mitigating measures. The subsidy element is covered through donor contributions.

rates, longer tenors, subordinated rank in loans, or other structures for equity investments.

IFC manages approximately \$700 million in funds from the Climate Investment Funds, the Global Environment Facility, and the Canada Climate Change Program. These funds are often matched by IFC resources and can be deployed as softer loans, guarantees, and equity for projects that would generally not be taken up by the private sector alone due to high project risks, technology costs, or technology risk. Donor funds also support standard-setting innovations and advisory services (often with a grant element) to build local capacity within firms and governments, and to develop new financial products allowing firms to identify opportunities to reduce GHG impacts and countries to adopt more favorable regulatory and business environments for renewable energy, energy efficiency, and cleaner technologies.

Since FY2006, 39 investment transactions have been committed using blended finance deploying concessional resources managed by IFC and including an IFC investment alongside. Fifteen of these transactions have used guarantee instruments, 23 have used debt products, and one project has used equity.

A majority of the projects (29) are investments made through FIs. The leverage ratio for blended finance transactions through FIs is quite high: on average one dollar of concessional finance leveraged more than 13.8 dollars of investment on the ground, including 9 dollars of IFC investment, that would not have taken place without such risk mitigation support. The point made earlier about the true leveraging potential of funds and credit lines holds here, too – actual leverage on the ground will be higher, given the deployment modalities of such instruments. In addition, the catalytic impact of the investments must be borne in mind: these projects often involve an emerging area (venture capital or early stage funding of cleantech) or activities that have not yet entered the mainstream FI environment.

In the case of the 10 real sector transactions that have been committed, 6 are in the power generation sector. Leverage ratios for these projects, at an average of 19.4 for total project cost and 3.5 for IFC funds to donor funds, hide significant variation between technologies. The fact that a power sector project needs concessional support to begin with suggests limited commercial viability without such support, which in turn suggests a greater need for the concessional support.

The blended finance portfolio is still new and emerging, and it is difficult to draw definitive conclusions based on such limited activity. However, what is clear is that this instrument has the potential to leverage very high multiples of investment from both the IFC and other co-financiers for projects that they would not have financed in the absence of such support. In that regard, blended finance appears to come closest to the definition of climate finance embodied in the UNFCCC agreements and discussions of the Green Climate Fund.

INSIGHTS FOR CONSIDERATION

The data presented above constitute a comprehensive dataset with detailed project-level information spanning 9 years and 562 projects across a variety of sectors. The analysis points to a number of interesting observations and insights:

There is great potential in leveraging private sector climate-related investment through multilateral development banks (MDBs). As IFC's experience shows, one dollar of IFC climate-related investment brings in close to 3 additional dollars from other investors on average; and that one dollar of IFC investment has itself been leveraged on the strength of IFC's shareholder capital. All MDBs follow a similar funding model, and would likely have similar leveraging potential.

Average leverage ratios, while useful, mask significant variations across project types. A nuanced picture of leveraging potential emerges when the underlying activities are broken down into "like" categories. Even within a relatively homogeneous category, such as renewable power generation, there are variations depending on technology and market characteristics. The private sector does not behave in a homogeneous fashion.

A simple leverage ratio calculation does not always tell the full story. Because of the way IFC accounts for investments, the leverage that will actually be achieved on the ground is not always captured. This is particularly the case for indirect investments, as through financial intermediaries (FIs). Direct investment financing better captures the actual investment that takes place. Neither case captures the broader multiplier effects of investment on income and economic development.

Greater leverage is achieved with well-established technologies. Where technologies are well established and understood by the market, it is easier to attract other financiers to participate in the investment

plan. Where there are technical issues associated with a technology, as in solar thermal electric technology (concentrated solar power – CSP), or where the activities financed have not yet entered the mainstream, as in some types of energy efficiency (EE), leverage ratios are lower.

Leverage ratios are often higher for larger projects. Big, capital-intensive projects tend to attract more financiers, as individual lenders run up against exposure limits. Large projects can also absorb the higher transaction costs associated with multiple lenders and complex project finance structures.

Lower leverage activities may still fulfill important market development roles. In some cases, leverage appears to be low because of the conventions underlying project accounting for that type of activity (as in FI activity, for example). In other cases, the underlying technology may be less well understood by the market, and a critical mass of activity may not yet have been attained for market demonstration purposes, leading to limited co-financing interest on the part of other investors. IFC can play an important role in financing such activities, so as to bring them up the curve and create greater market awareness and acceptance.

Climate-related investment follows underlying market trends. The growth in IFC's climate-related business, particularly for renewable energy (RE), reflects underlying market trends in the RE business, which has seen significant growth in many of IFC's markets. IFC has been ready and able to support such growth, but the supply of capital, while undoubtedly critical, is not necessarily the defining element in the growth of such activity.

Climate-related investment needs a conducive underlying investment environment. Most of the activities that IFC has undertaken to date have not involved explicit subsidies. This means that their creditworthiness derives from the prevailing business environment, policy and regulatory regimes in the countries involved. In the

absence of such conditions, such investments will simply not take place – or will require additional risk mitigation measures.

Active “selling” of climate-related activities can help. In some cases, climate-related opportunities may not be immediately obvious to a client. This is particularly the case in some EE improvements. In such cases, the difference between their adoption or not is the advice and technical expertise that can be brought to bear in a given project. IFC’s in-house technical experts (engineers and environmental specialists) are key to such active client engagement, particularly in the context of IFC’s Performance Standards³³ which requires clients to consider resource efficiency possibilities.

Climate finance is often a portion of the overall financing. In many cases, the climate-related portion could be tangential to the main investment being pursued, yet there may well be opportunities to reduce the project’s emissions footprint through captive renewable energy (RE) or EE measures. Such components may be a small part of the project overall, but they should not be discounted for their impact or demonstration value. Here again, active client engagement by IFC’s technical staff is key.

Blended finance can nudge investment into promising, but as yet commercially unproven areas. Often, being a first-mover entails risks that make it difficult for a client to complete a financing plan on acceptable terms. The perceived risk may be too high even for a development finance institution like IFC. A small amount of concessional finance used to address such risks can act as a catalyst and mobilize the necessary financing.

What gets measured gets managed. It is only when IFC made a public commitment to grow its RE and EE activities³⁴ that a tracking system was put in place; it is only when such investments began to be tracked and targets set that staff realized that there were several climate-related opportunities in the business that could, with a little extra effort, be materialized. IFC’s commitment to grow its climate-related business has given a boost to such endeavors.

Advisory services and capacity building are essential components of some activities. This paper has not examined Advisory Services (AS) and the role that it has played in supporting IFC’s climate-related activities. The brief description of AS programs provided shows that some technical assistance and capacity building activities are essential building blocks for certain types of climate-related investment.

Leverage is an important “bang for buck” measure, but not the only one. Leverage shows how much money was mobilized on the back of a public dollar, but it does not capture the impact of that money in terms of GHG reductions, or employment creation, or any number of other co-benefits on health and local pollution or other objectives that a country may wish to pursue. These should be areas for further work for IFC and others.

³³ www.ifc.org/performancestandards

³⁴ In Bonn in 2005.

Summary Table

		Project Count	Total Project Size	Total Climate Component	Total IFC Commitment	Total IFC Climate Component	Simple Climate Leverage	Weighted Climate Leverage	Simple Total Leverage	Weighted Total Leverage
Real Sector RE	Power Generation (Projects where energy is generated and sold to grid or micro grid)	122	\$16,357	\$14,171	\$3,176	\$2,899	4.70	4.89	4.70	5.15
	Renewable Captive Use (Renewable energy generation for internal use with limited external sales)	30	\$3,788	\$668	\$701	\$174	6.08	3.85	6.08	5.40
	Renewable Fuels (Projects where biofuels are produced and used)	13	\$1,718	\$197	\$368	\$34	4.28	5.73	4.43	4.67
	RE Component Manufacturing and Smart Systems	12	\$3,707	\$3,603	\$445	\$403	7.08	8.94	7.08	8.32
	Total Real Sector RE	177	\$25,570	\$18,639	\$4,690	\$3,510	4.90	5.31	4.92	5.45
Real Sector EE	EE Improvement in Processes (Investment in improving the efficiency of the process or process peripherals)	69	\$18,313	\$5,680	\$2,440	\$728	5.97	7.81	5.86	7.50
	Combined Heat and Power (CHP) (investment in utilizing waste heat or combining heat and power at the facility)	14	\$3,134	\$1,933	\$662	\$382	4.57	5.07	4.57	4.74
	Green Buildings (Investment in improving building efficiency)	31	\$2,303	\$1,333	\$677	\$498	4.29	2.68	4.28	3.40
	EE in Transmission and Distribution (T&D) (Investment in reducing T&D losses)	21	\$4,849	\$2,687	\$751	\$313	4.91	8.60	4.91	6.46
	EE in Transport (Investment in improving efficiency of transport)	10	\$2,271	\$476	\$382	\$173	4.88	2.75	5.38	5.95
	EE Components and Systems (Investment in projects which manufacture EE equipment or produce smart systems)	24	\$2,032	\$1,024	\$626	\$327	3.47	3.13	3.47	3.25
	Total Real Sector EE	169	\$32,901	\$13,133	\$5,538	\$2,419	4.67	5.43	4.66	5.94
Financial Intermediaries	Financing (Financing provided for Fis to invest in RE and EE deals)	189	\$12,176	\$6,462	\$9,108	\$4,132	2.66	1.56	2.66	1.34
	Total Financial Intermediaries	189	\$12,176	\$6,462	\$9,108	\$4,132	2.66	1.56	2.66	1.34
Other	Carbon Finance (carbon delivery guarantee)	3	\$100	\$100	\$100	\$100	1.00	1.00	1.00	1.00
	Forestry (Investment in sustainable forests)	8	\$481	\$348	\$159	\$117	4.02	2.97	4.02	3.03
	Others (investment in carbon reduction and other green projects)	16	\$937	\$706	\$297	\$217	8.39	3.26	8.39	3.16
	Total Other	27	\$1,517	\$1,153	\$555	\$433	6.08	2.66	6.08	2.73
Grand Total		562	\$72,165	\$39,387	\$19,891	\$10,495	4.14	3.75	4.14	3.63

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