ANALYSIS

World Bank Group and International Energy Development

Implications for Sustainable Development, Poverty Reduction and Climate Change

by Heike Mainhardt-Gibbs

Brot für die Welt
www.brot-fuer-die-welt.de

eed Evangelischer Entwicklungsdienst

Imprint

Publishers:
Evangelischer Entwicklungsdienst e.V.
Ulrich-von-Hassell-Str. 76
D-53123 Bonn
Telefon: +49 (0)228 8101-0
E-Mail: eed@eed.de
www.eed.de

and

Brot für die Welt
Stafflenbergstr. 76
D-70184 Stuttgart
Telefon: 0711 – 2159 - 568
www.brot-fuer-die-welt.de

Author: Heike Mainhardt-Gibbs, USA
Editor: Richard Brand, Thomas Hirsch
Layout: Monika Brinkmöller
Photo credits: Crux CC-BY-SA 2.5 (Cover)

Printed on recycled paper

Bonn, February 2011

EMAS
Geprüftes Umweltmanagement
REG.NO. DE-110-00028

Content

Executive Summary

Worldwide, it is critical for some 1.5 billion poor people to receive access to energy services in order to help pull themselves out of poverty and obtain the Millennium Development Goals. Stated simply, there is an urgent need to develop modern energy systems in developing countries. However, the energy sector through the burning of fossil fuels is the number one contributor to greenhouse gas emissions responsible for climate change. Moreover, climate change is anticipated to negatively affect developing countries and the poor disproportionately – threatening recent gains in poverty reduction. Therefore, it is critical to poverty reduction and combating climate change that global energy systems quickly transition to low-carbon technologies, such as renewable energy and energy efficiency.

With an overall mission to reduce poverty and given its vast array of activities in the energy sector, from project finance to policy reform, the World Bank Group (WBG) is uniquely positioned to influence the nexus between energy development, poverty reduction, and climate change. The Bank provides low-interest loans and grants to developing country governments and superior financing terms and guarantees to private-sector actors on behalf of the international community. All this Bank activity, influence, and subsidized financing can help to move forward or slowdown a low-carbon development transition as well as foster increased energy access for the poor or perpetuate energy scenarios that predominantly serve industry and the privileged.

The World Bank Group's proposed new energy sector strategy, which is currently under review, is intended to *"articulate a way forward to help developing countries achieve the twin objectives of:*

- improving access and reliability of energy supply; and
- facilitating the shift to a more environmentally sustainable energy development path."

On these twin objectives, most stakeholders agree. However, the WBG's energy sector operations are surrounded by controversy and contradictions and critics remain sceptical on whether the Bank will successfully achieve these objectives.

To begin, the WBG has a number of existing frameworks guiding its approach and priorities in the energy sector, including climate change-specific strategies and special donor funds as well as renewable energy and energy efficiency commitments. All of these existing approaches already emphasize sustainable development, such as a low-carbon transition, and access to energy services for the poor. However, none of the approaches directly consider a reduction in financing for fossil fuel development or specify strict investment guidelines for fossil fuels. The only fossil fuel guidelines are the coal investment guidelines set out in the *Strategic Framework on Development and Climate Change (2008),* which are sufficiently weak and vague that they do not represent a true obstacle to coal or any assurance towards low-carbon development.

As evidence to the weaknesses and gaps of the Bank's energy-related frameworks and special climate change funds & commitments, in FY2010 funding for coal hit a record high for the institution of $4.4 billion. Overall, total fossil fuel funding also hit a record high of $6.6 billion, a 116% increase over the previous year. Even though the Bank also surpassed

commitments to increase spending for new renewable energy and energy efficiency, which hit a record of $3.4 billion combined, the Bank's support for coal alone still far surpasses this low-carbon energy benchmark.

Furthermore, in considering the assessment of WBG energy spending on fossil fuels versus RE and EE, it is important to note that the total funding going to fossil fuels is likely significantly under-reported due to problems with the Bank's classification of energy projects and lack of transparency. The report points out several sources of Bank financing that are often missed contributions towards fossil fuel development, but in contrast are typically captured in RE and EE Bank figures. These include financial intermediaries, infrastructure, and development policy lending. Moreover, research indicates that some years the amount of funding that should be counted towards fossil fuels from these unreported sources is over a billion dollars.

Most importantly, according to an external assessment, no fossil fuel project in FY2009 and FY2010, representing $9.6 billion or 45 percent of all WBG energy sector financing, targeted energy access for the poor. According to the Bank's own assessment of "access-oriented" energy projects, over the past eight years (FY2003 to FY2010), only 22% of WBG energy sector finance was aimed at access for the poor. For the most recent year (FY2010), access only accounted for 8% or $1 billion out of a total $13 billion. However, the Bank's accounting of "access-oriented" energy projects is questionable because in all IDA countries the Bank assumes that any increase in electricity generation or transmission translates into access for the poor. Such an approach is highly vulnerable to perpetuating an energy scenario that provides access only for industry and the well off and not for the poor.

In conclusion, simply providing more scope to expand renewable energy and energy efficiency and accomplishing significant gains on this front, does not prevent the Bank from increasing investments in coal plants, offshore deep water oil drilling, or any other fossil fuel project. If the Bank's appetite for lending to fossil fuels does not sharply change, the Bank's contribution on balance to a low-carbon growth path of the energy sector will be questionable. Each fiscal year the Bank supports coal, oil, or gas development represents a commitment to carbon-intensive energy sources for the next 20 to 50 years.

Given that climate change stands to harm poor populations the most – threatening gains on poverty reduction – and the Bank's fossil fuel projects have not proven to increase energy access for the poor, there does not seem to be much justification for the Bank's continued subsidized financing of fossil fuels. At least this appears to be the case for middle income countries – which make up the overwhelming majority of WBG coal projects – with mature financial markets and the capacity to finance fossil fuel projects on their own.

Recommendations

In order to address some of the concerns brought out in the document, a set of energy poverty and climate change criteria, against which all WBG energy sector projects should be assessed, are described in the report. Furthermore, the report ends by providing a list of overall recommendations, which encompass many of the concepts contained in the energy project-level criteria. The overall recommendations include, *inter alia*:

Energy Access for the Poor – By and large, WBG energy sector operations need to more directly address poor people's energy needs and not simply assume that increasing electricity translates into benefits for the poor. Towards this end, the WBG should:

- Provide an analysis of costs and benefits to the poor for all energy sector projects.

- Revise the WBG's definition of "access-oriented" energy projects to only include those that demonstrate direct energy access for the poor based on the criteria set out in this report.

- Require all energy projects to track and publicly report on energy access for the poor against project-level specified access indicators.

- Promote innovative energy access policies that ensure affordability for the poor and provisions of direct energy services for the poor.

- Commit to aggressive lending targets for energy access for the poor both in the WBG's overall energy portfolio and by country.

- Develop and fully implement WBG staff incentives towards achieving established energy access portfolio and country-specific targets.

Climate Change and Low-carbon Development – The WBG must lead the way in funding low-carbon energy even in cases where it is costlier than conventional options. Towards this end, the WBG should:

- Calculate and disclose project GHG emissions for all energy sector projects.

- Require full cost accounting for energy sector project evaluations, including, *inter alia*: risks to fuel supply, infrastructure costs, life-cycle costs, subsidies, and costs of social and environmental externalities (e.g., carbon valuation).

- Comprehensively assess and disclose alternative energy options.

- Lend to coal and oil development solely to provide access to the poor and only as a last resort.

- Hire more staff (especially within the IFC) with renewable energy expertise.

- Promote innovative new renewable energy and energy efficiency policies that provide the right incentives and priorities in the areas of tax incentives, transmission, investment, feed-in tariffs, and land-use policies. Policy design must incorporate the needs of and protections for the poor.

- Commit to aggressive lending targets for new renewable energy and energy efficiency both in the WBG's overall energy portfolio and by country.

- Develop and fully implement WBG staff incentives towards achieving the stated climate change/low-carbon development goals.

World Bank Group Public Accountability and Accurate Accounting – The WBG needs to better assess and fully account for its role in the energy sector as it relates to global climate change, both positive and negative, and how this translates into the overall well being of the impoverished. Towards this end, the WBG should:

- For all power generation projects, clearly identify the targeted or likely consumers, including disclosure of any project associated Power Purchase Agreements.

- Publicly report aggregate funding for the overall development of fossil fuels annually and always include it in comparison when reporting of Bank annual support for new renewable energy and energy efficiency.

- Accurately account and publicly report the amount of WBG funding going to the overall development of fossil fuels, large hydropower, new renewable energy, and energy efficiency taking place through infrastructure projects, development policy loans, technical assistance, financial intermediaries, syndicated B loans, and other Bank projects that involve services to the energy industry.

- Disclose a project-by-project breakdown associated with the WBG's aggregate annual energy sector funding figures according to support for oil, gas, coal, large hydropower, new renewable energy and energy efficiency.

1. Introduction

Worldwide, some 1.5 billion people, or 22% of the world's population, still have no access to electricity and approximately 2.5 billion rely on traditional biomass as their primary source of energy (IEA, 2009). Around 85% of the electricity-deprived people live in rural areas of the developing world, mainly in Sub-Saharan Africa and South Asia (IEA, 2009). The United Nations states that access to affordable, modern energy services is essential for the achievement of sustainable development and the Millennium Development Goals (MDGs).[1]

> *Importance to MDGs: Poor people require affordable, accessible and reliable energy services to support their household, economic and social welfare activities. Fuels used traditionally by the poor[2] provide few and low quality energy services – such as basic heating for cooking and limited quality lighting. By contrast good quality heating and lighting, modern fuels and electricity provide mechanical power for agro-processing, refrigeration for clinics, motive power for transport and telecommunications for education and public awareness. – UN Energy, 2005*

As indicated, there is an urgent and critical need for the development of energy services for the poor. However, the sources of energy utilized and the manner in which energy services are produced and consumed are of crucial importance to sustainable development and, in particular, to the poor. Between 1970 and 2004, annual emissions of carbon dioxide (CO_2), the main heat-trapping greenhouse gas (GHG), have grown by about 80% (IPCC, 2007). Fossil fuel (oil, gas, & coal) combustion is responsible for more than 75% of the human-caused increase in CO_2 emissions with land-use change (primarily deforestation) responsible for the remainder (IPCC, 2007). Poor countries are particularly affected by climate change as they rely heavily on climate-sensitive sectors, such as agriculture and forestry, and their lack of resources, infrastructure, and health systems leaves them at greater risk to adverse impacts.

Already by the end of this decade, poor countries will be suffering the consequences of climate change. According to the Inter-governmental Panel on Climate Change (IPCC, 2007), by 2020 in some African countries, yields from rain-fed agriculture could be reduced by up to 50% due to climate change. Agricultural production, including access to food, in many African countries is projected to be severely compromised.[3] This would adversely affect food security and exacerbate malnutrition. In addition, the World Bank (2005) indicates that if atmospheric CO_2 concentrations were to double from pre-industrial levels, "developing countries would suffer economic costs of 5 to 9 percent of GDP, several times higher than industrialized countries, and the poor in the Bank's borrowing countries would be at the greatest

[1] The UN Millennium Development Goals adopted in 2000, include: 1. Eradicate extreme hunger and poverty, 2. Achieve universal primary education, 3. Promote gender equality and empower women, 4. Reduce child mortality, 5.Improve maternal health, 6. Combat HIV/AIDS, malaria and other diseases, 7. Ensure environmental sustainability, and 8. Develop a global partnership for development. Specific targets were set for 2015.

[2] Fuels used traditionally by the poor are fuelwood, charcoal, local coal and kerosene in urban areas, and fuelwood, crop residues and dung in rural areas.

[3] In addition, by 2020 between 75 and 250 million people in Africa are projected to be exposed to increased water stress due to climate change. The magnitude and timing of impacts that will ultimately be realised will vary with the amount and rate of climate change, emissions scenarios, development pathways and adaptation. For more projected climate change impacts on developing countries, see IPCC, 2007.

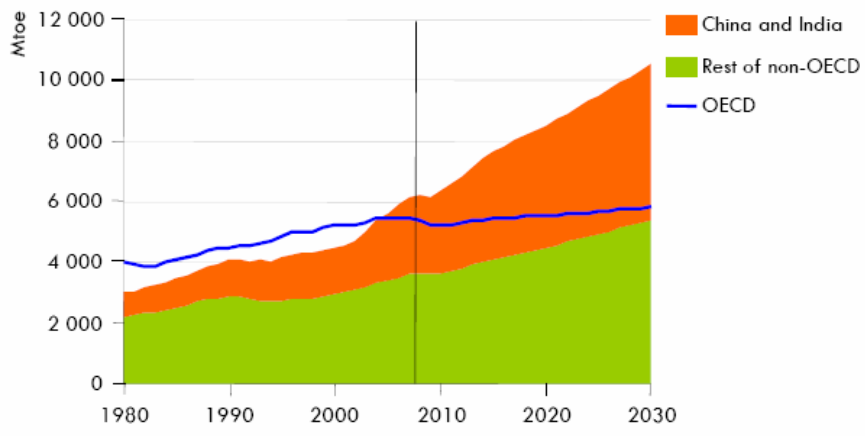
disadvantage." The IPCC further states that, "[o]ver the next half-century, climate change could impede achievement of the Millennium Development Goals."

Although, the industrialized nations' historical and continued burning of fossil fuels is to blame for the current damaging GHG atmospheric concentrations, large developing and transition countries are also challenged to mitigate GHGs, to deviate from business-as-usual politics, and to implement low-carbon development strategies in order to respond to the climate problem. Figure 1 indicates that between 2007-2030, under current government policies (e.g., fossil fuel subsidies) and patterns of development, non-OECD countries will account for 93% of the increase in global energy demand, largely driven by China and India (IEA, 2009). China has already overtaken the US to become the world's largest producer of GHGs. Indonesia and Brazil are the third and fourth largest emitters, mainly as a result of deforestation and peat fires (Stern, 2009).

However, it is only fair and based on the principle of common but differentiated responsibilities adopted in the UN Framework Convention on Climate Change (UNFCCC) that the rich countries responsible for climate change provide the necessary funding to developing countries for mitigation, i.e. transition to low-carbon development, and adaptation. As such, the Bali Action Plan (BAP), agreed to by all parties of the UNFCCC in December 2007, calls for the creation of a framework of measurement, reporting, and verification (MRV) to track the transfer of the financial commitments to developing countries.

Whereas the developing countries are demanding MRV standards for finance, the developed countries are demanding MRV standards for emissions reduction pledges. At COP-15 in December 2009, the U.S. would not sign any agreement that did not include stringent MRV to monitor China's emission reductions. China has announced a target of reducing energy intensity per unit of economic output by 40-45% by 2020 from the 2005 level. Even though the Copenhagen Accord includes specific language for both developed and developing countries concerning MRV of financial and emissions reduction pledges, the Accord only represents a political agreement not a legally binding treaty and was not endorsed by all UNFCCC parties.

Figure 1. World Primary Energy Demand



Source: International Energy agency (IEA), 2009

According to the International Energy Agency (2009), "tackling climate change and enhancing energy security require a massive decarbonization of the [global] energy system. If the world does not substantially change its energy development path, we are on course for a 6°C temperature rise and rising energy costs" (IEA, 2009). Limiting temperature rise to 2°C or an atmospheric CO2 concentration of 450 parts per million (ppm), as the latest IPCC report and the Copenhagen Accord have indicated, will require big GHG emissions reductions in all regions. In fact, during UNFCCC negotiations many developing countries (G77), including the Association of Small Island States (AOSIS) and the Africa Group, have proposed a more responsible stabilization of 350 ppm or 1.5°C rise – requiring even further reductions in GHGs.

Given climate change threatens to reverse progress made on sustainable development and poverty reduction, efforts to combat climate change and reduce poverty need to reinforce one another. Energy development is key to both of these processes. Everything possible must be done to transition away from the current carbon-intensive energy systems to a low- and no-carbon development path.

The World Bank Group

While national governments and the private sector are key actors that affect energy developments, the World Bank Group occupies a unique position to influence the nexus between energy development, poverty reduction, and climate change. The World Bank Group (WBG) is made up of five institutions: International Development Association (IDA), International Bank for Reconstruction and Development (IBRD) (the first two are collectively referred to as the World Bank), International Finance Corporation (IFC), Multilateral Investment Guarantee Agency (MIGA), and the International Center for the Settlement of Investment Disputes (ICSID). The overall mission of the WBG is to fight poverty. The Bank further states that its vision is to support inclusive and sustainable development.

Towards this end, the Bank provides low-interest loans and grants to developing country governments and attractive finance (debt, equity and guarantees) to private-sector actors on behalf of the international community. Their core work includes financing and policy advice related to agriculture, transport, energy, social services, and infrastructure, which are all important to economic development yet also can have substantial implications for climate change and the poor.

Specificly regarding the energy sector, the WBG supports the development of projects involving oil, gas, coal, large hydro-power, new renewable energy[4], and energy efficiency – from upstream exploration and production processes to downstream electricity generation and distribution. In addition to direct energy project financing, the Bank influences policies, regulations, and institutions that govern the power sector through analytic and lending support for policy and institutional reform covering such activities as sector governance, budgets, tariffs, subsidies, and social and environmental regulations. The WBG is also significantly involved in many developing countries' economic and social development strategies at the sectoral (e.g., energy sector), country, and regional (e.g., power trading between countries) levels.

[4] The World Bank defines ***new* renewable energy** as energy from solar, wind, biomass, geothermal energy, and hydropower facilities with capacities up to 10 MW per facility.

In FY2009, the WBG provided a total of $72 billion in loans, grants, and investments. Out of this overall total, energy operations constituted $8.2 billion or 11 percent. However, energy's share is likely significantly higher as the Bank does not account for energy investments taking place through financial intermediaries, such as private equity funds and government infrastructure funds. Furthermore, the WBG is currently in charge of administering more than $6 billion in special environmental funds aimed at combating climate change that are made up of donor money. The energy operations receiving finance from these special donor funds are included in the Bank's total annual lending figures.

The decision-making process involved in Bank support for energy operations, be it high- or low-carbon, is a complicated process. The WBG is owned by over 180 member governments. Each member government is a shareholder of the Bank with the number of shares a country holds based roughly on the size of its economy. The WBG's day-to-day operations are governed by a board of 25 Executive Directors[5]. The Executive Directors decide on general operations of the Bank such as proposed project finance, policy, and bugetary issues that guide the institution.

Five Executive Directors are appointed by the country members with the five largest number of shares - currently the United States, Japan, Germany, France and the United Kingdom. In addition, China, the Russian Federation, and Saudi Arabia each elects its own Executive Director. The remaining 17 Executive Directors are elected by the other members to represent groups of countries. This shareholder/Executive Director arrangement has historically resulted in the G8 having considerable sway in establishing Bank policies and general lending trends. However, the big developing countries (e.g., China, India, South Africa and Brazil), hence typically big Bank borrowers, have considerable influence as well.

The WBG's decision-making process is widely seen as too exclusive, offering many member countries too little voice and too few opportunities for participation (High-level Commission on Modernization of World Bank Group Governance, 2009). It is also important to note that the Board largely represents the voices of finance ministries – not a given country's parliament or other government agencies in charge of social and environmental issues.

Developing countries are understandably reluctant to constrain their energy options when rich countries have burned fossil fuels in an unrestrained manner since the industrial revolution. Such issues have created complicated political and economic obstacles to low-carbon energy development paths. As would be expected, these political and economic climate change dynamics are at play within the World Bank. As some donor country governments advocate for the transition to low-carbon development, other executive directors representing developing country nations insist that loans for energy projects – including oil and coal -- are essential to their economic development. At the same time, about 80 percent of [borrowing] countries are now telling the World Bank they want a blueprint for addressing climate change as they develop lending strategies (Friedman, 2010c).

In the end, as populations and economies grow, pressure mounts for more rapid development of energy resources. In the absence of a global agreement on climate change, the World Bank has to respond to today's urgent energy development needs, which can be a very complicated political and economic task.

[5] Only recently was a 25th director added representing African countries, bringing the current total to 3 directors representing Africa.

Overview of Paper

The World Bank Group's involvement in such a vast array of development activities illustrates the important economic and political influence the Bank has in developing countries – although the relative influence varies by borrowing country depending on economic size and financial health. All this Bank activity and influence can help to move forward or slowdown a low-carbon development transition.

This document discusses the role of the World Bank Group in international energy development and examines the implications for energy poverty and climate change. The paper's emphasis is on fossil fuel operations and to a lesser extent assesses new renewable energy and energy efficiency activities. Although, the study includes basic figures and information on large hydropower projects, the document does not provide a specific review of these operations.

The paper is organized as follows: Section 3 describes the WBG's general approach to energy sector development as set out in several strategies/frameworks and specific commitments/targets. Section 4 explains the WBG's wide-ranging energy sector operations, the different Bank institutions involved, and the types of funding utilized, i.e, core WBG money and donor-based climate change funds. Section 5 provides an assessment of the WBG's lending trends in the energy sector by fuel source for multiple years with an emphasis on climate change and poverty implications. Section 6 presents various data on energy access for the poor. Section 7 suggests criteria on energy access for the poor and climate change/low-carbon development for WBG energy projects. The section then evaluates several recent WBG energy projects against the suggested criteria. Section 8 provides a list of advocacy opportunities for civil society intervention to bring about reform in the WBG's energy policies and operations. Lastly, Section 9 offers concluding remarks and policy recommendations. Attached to the end of the paper are several Annexes of additional useful information.

Methodology

Overall, this evaluation of the World Bank Group's role in international energy development is based on: review of existing literature/assessments, participation at and review of minutes from relevant meetings/consultations with the World Bank Group, inputs from civil society organizations (including from developing countries), government agencies, and country executive directors, review of developing country and civil society inputs to the World Bank's Energy Strategy, review of World Bank strategies and policies, review of Bank operations and publicly available project documents, and collection & analysis of WBG project and policy lending data. Further details of the paper's approach to assessing particular elements are provided in the individual sections of the paper.

2. World Bank Group Approach to the Energy Sector

The World Bank Group has several frameworks guiding the WBG's approach and priorities for development of the energy sector. These include energy sector strategies, climate change strategies, and specific commitments. All of the approaches emphasize sustainable development, such as a low-carbon transition, and access to energy services for the poor. However, none of the approaches directly consider a reduction in financing for fossil fuel development, specify strict investment guidelines for fossil fuels, require consideration of GHG emission costs in project appraisals, or require the disclosure of expected GHG emissions from energy projects. This section provides a brief description of the main frameworks guiding energy development at the Bank, including:

- World Bank Group Energy Sector Strategy (2001)
- Bonn Commitment to Renewable Energy and Energy Efficiency (2004)
- Clean Energy Investment Framework (2006)
- Strategic Framework on Development and Climate Change (October 2008)

WBG Energy Sector Strategy (2001)

The WBG's Energy Sector Strategy articulates the Bank's overall approach to the energy sector, including the institution's role, priorities, and targets for energy development in developing and transition countries. The 2001 Energy Strategy, titled The World Bank Group's Energy Program - Poverty Reduction, Sustainability and Selectivity, defined four WBG priorities for energy development: 1. helping the poor directly; 2. improving macroeconomic and fiscal balances; 3. promoting good governance and private sector development; and 4. protecting the environment. The Strategy stipulated that WBG financing for energy had to meet at least one of these priorities. Given the vagueness and wide range of priorities, such as "promoting private sector development", the actual types of projects that could receive financing were not very restricted. In addition to the general priorities, some specific quantitative targets to be met by 2010 were set for developing and transition countries as a general group, including *inter alia*:

Access: increasing the share of households with access to electricity from 65 percent to 75 percent.

Access policy measures: supporting energy needed for social services (health, education, communication), and support for community-based approaches and gender issues relating to access to energy.

Greenhouse gas (GHG) emissions: reducing the average intensity of carbon dioxide emissions from energy production from 2.90 tons per ton of oil equivalent to 2.75.

GHG policy measures: reducing gas flaring and facilitating carbon trading and joint investments to reduce greenhouse gas emissions.

Energy efficiency: reducing the average energy consumption per unit of GDP from 0.27 ton of oil equivalent per thousand dollars of output to 0.24.

Energy efficiency policy measures: 1. removing market and regulatory barriers to renewable energy and energy efficiency investments for power and biomass; and 2. promoting energy-efficient and less polluting end-use technologies for traditional fuels.

Fossil fuel policy measures: 1. switching from coal to gas; 2. facilitating environmentally sustainable extraction, production, processing, transport, and distribution of oil, gas, and coal; and 3. closing loss-making coal mines and oil refineries and financing restructuring costs that fall on government budgets.

Please note, no quantitative targets were set for fossil fuels.

Currently, a new WBG Energy Sector Strategy is under development for the period 2011 to 2020. There have been public consultations based on an Approach Paper, but a new draft Strategy is yet to be released. As far as the 2010 targets set by the 2001 Energy Sector Strategy, the Bank's Approach Paper (WBG, 2009) claims that the 2010 developing and transition countries' group "targets for increasing access to electricity, reducing CO2 emissions intensity, and reducing energy intensity have all been met." However, the Bank does not provide any evidence to substantiate this claim or data on how the balance of Bank energy sector operations have or have not contributed to these targets. Obtainment of the target on reducing CO2 emissions intensity of energy production is somewhat hard to believe given that research shows that the trend in developing countries has been an increase in the intensity of CO2 per unit of energy, with a sharp increase in China and India (Stern, 2009).

Bonn Commitment to Renewable Energy and Energy Efficiency (2004)

At the International Renewable Energies Conference in Bonn, June 2004, the World Bank Group announced a commitment to scaling up lending for new renewable energy[6] and energy efficiency by at least 20% annually over five years (FY05-FY09), and leading a Renewable Energy and Energy Efficiency Financing and Policy Network for developing countries. The Bonn RE and EE commitment of the Bank was a result of intense pressure from civil society organizations and a recommendation put forward in the WBG's Extractive Industries Review.[7]

According to the Independent Evaluations Group (IEG, 2010), the Bank exceeded its Bonn commitments to new RE and EE with financing growing from a base of $209 million (which critics argued was too low for a baseline) to $2.06 billion in FY2008 and $3.1 billion in FY2009. This compares to a four-fold increase in annual global clean energy investment—from $36 billion since 2004 to $145 billion in 2009 (UN Energy, 2010).

[6] All sources of renewable energy excluding large hydropower, defined as larger than 10 MW.

[7] The Extractive Industries Review (EIR) was a three-year, independent evaluation of World Bank Group support for the oil, gas, and mining sectors. The final EIR report presented a series of recommendations, including: 1) WBG should increase investments in renewables by 20% annually, and 2) WBG should establish a specialized team for promoting renewables and energy conservation. "Striking a Better Balance – The World Bank Group and the Extractive Industries: The Final Report of the Extractive Industries Review" (December 2003).

Clean Energy Investment Framework (2006)

In 2006, responding to a request from the G8, the Bank developed the Clean Energy Investment Framework (CEIF) intended to help scale up investments in clean energy and integrate climate change into development assistance. The CEIF set out four primary World Bank strategic activities:

1. Promoting transition to a low-carbon economy – especially in Brazil, China, India, Mexico, and South Africa – by increasing analytical, knowledge, and investment support;
2. Accelerating investments that help increase supplies of clean energy;
3. Improving access to affordable energy for the poor, particularly in Africa; and
4. Assisting developing countries with adaptation to the impacts of climate change through analytical work and development of risk-management tools.

There have not been any evaluations yet of how Bank operations have addressed these four strategic activities. It would be particularly interesting to see how the Bank evaluates its activities to promote a low-carbon economy in the target countries of India and South Africa where the WBG has financed two of the world's biggest sources of CO_2 – Tata Ultra Mega supercritical coal plant in India (2008) and the Medupi supercritical coal plant in South Africa (2010) (please see Annex 2).

Strategic Framework on Development and Climate Change (October 2008)

At the October 2008 annual meetings, the Bank's Development Committee approved the successor to the CEIF, the *Strategic Framework on Development and Climate Change* (SFDCC), which spells out a much broader role for the Bank in climate change issues. The SFDCC provides the IFC, MIGA, IDA, IBRD, and other entities of the Bank Group objectives, guiding principles, areas of focus, and major initiatives to guide the operational response for 2009 to 2011.

The SFDCC lays particular emphasis on no-regrets actions which promote both sustainable development and climate change mitigation, and to the use of concessional funds (in addition to development finance) that promote GHG reduction in a development context. The framework sets out six action areas:

1. Support climate actions in country-led development processes;
2. Mobilize additional concessional and innovative finance;
3. Facilitate the development of market-based financing mechanisms;
4. Leverage private sector resources;
5. Support accelerated development and deployment of new technologies;
6. Step up policy research, knowledge, and capacity building.

In partnership with others, major initiatives of the Bank will include:

- Help some of the most vulnerable countries increase resilience to climate risks, with new adaptation financing.

- Support carbon market development through investments in longer-term assets and currently by-passed reduction potentials, financial and quality enhancements of carbon assets, methodology development, and sharing lessons of experience.

- Screen operations for: (i) climate risk in hydropower and major water investments with long life spans, and (ii) energy efficiency opportunities starting with energy projects.

- Operationalize, execute, and share lessons from the Climate Investment Funds, Carbon Partnership Facility, and Forest Carbon Partnership Facility, and work with partners to improve monitoring of climate-related finance and its "additionality".

- Facilitate customized applications of climate risk insurance products, such as a Carbon Delivery Guarantee product in which IFC assures delivery of carbon credits from companies in developing countries to buyers in developed countries.

- Promote packaging of its development finance instruments with instruments provided by Carbon Finance, the Global Environment Facility, and the Climate Investment Funds.

- Pilot new initiatives to support development and dissemination of new energy technologies.

- Scale up support to Reduced Emissions from Deforestation and Degradation (REDD), while improving the livelihoods of forest-dependent local and indigenous communities.

- Facilitate global dialogue by launching the World Development Report on climate change.

- Enhance the knowledge and capacity of clients and staff to analyze and manage development-climate linkages at the global, regional, country, sector, and project levels.

Out of the above major initiatives, the Bank has signalled emphasis on the first two - adaptation/resilience and carbon finance (carbon finance is explained in the next section).

Specific Outcomes and Targets

The SFDCC offers an initial Results Framework in its Annex III, which includes:

- Increase WBG financing for energy efficiency and new renewable energy by an average 30 percent a year, from a baseline of US$600 million in average annual commitments during FY05-07.

- Increase the overall share of "low-carbon projects" rising from 40 percent of total energy lending in fiscal years 2006–08 to 50 percent in fiscal year 2011 (this includes the already stated increases in RE and EE and expanding lending to hydropower).

- IFC adds in a separate Issues Brief (September 2008) that it aims to support low-carbon growth in developing countries and is committed to increasing its investments in renewable energy and energy efficiency from $1.1 billion in fiscal years 2005-07 to over $3 billion in fiscal years 2009-11.

- Increased demand for and lending in support of modal shifts in freight and public transport (as compared to FY06-08).

- MIGA guarantee instruments increasingly used for low carbon (RE/EE) investments - at least 10 guarantees provided over FY09-11.

- Innovative financing packages combining CF, GEF and/or CIF to leverage private investments structured and applied by IFC - at least 10 during FY09-11.

- IFC leverage of low carbon private investment is at least 4 to 1 in dollar values.

- Sub-national level application of financial tools is tested for projects with climate co-benefits – at least 3 in a pilot phase.

- GHG analysis is developed and applied in IFC real investment portfolio and select WB energy, transport, and forestry sector projects (FY09-FY11). [See paragraph below]

- GHG emissions for all WBG offices enrolled in the carbon-neutral program reduced by 7 % by 2011 & remaining emissions offset by purchase of carbon credits (FY11).

Greenhouse Gas Accounting and Reporting

Valuing GHG emissions is already done in GEF and carbon finance projects. The SFDCC application extends, for learning and information purposes only, to a larger pool of projects. The Bank will select pilot projects on a demand basis. The IFC will progressively apply these tools to inform the dialogue with its private sector clients on climate related business opportunities and risks. This is an analytical exercise. It is neither a business requirement, nor will it be used for decision-making about projects using traditional WBG financing instruments. By the end of the piloting period, a proposal will be prepared for Board consideration on the future applications of the tools for GHG analysis appropriate for Bank and IFC business models, client needs, and available climate financing instruments.

Guidelines on Coal Development

The WBG, through its traditional financing instruments, could support client countries to develop new coal power projects, by considering the following:

a) there is a demonstrated developmental impact of the project including improving overall energy security, reducing power shortage, or increasing access for the poor;

b) assistance is being provided to identify and prepare low-carbon projects;

c) energy sources are optimized, looking at the possibility of meeting the country's needs through energy efficiency (both supply and demand) and conservation;

d) after full consideration of viable alternatives to the least-cost (including environmental externalities) options and when the additional financing from donors for their incremental cost is not available;

e) coal projects will be designed to use the best appropriate available technology to allow for high efficiency and, therefore, lower GHG emissions intensity; and

f) an approach to incorporate environmental externalities in project analysis will be developed.

Box 1. U.S. Treasury Coal Development Guidelines

On December 14, 2009, the U.S. *Treasury* released "Guidance to MDBs for Engaging with Developing Countries on Coal-Fired Power Generation[8]." It sets out how U.S. representatives to the multi-lateral development banks (MDBs) should evaluate proposed coal projects. The US guidelines enhance the World Bank's ambiguous coal guidelines in four important areas. First, they provide a more detailed, step-by-step approach to the analysis of low-carbon alternatives before making a deal on coal. Second, they differentiate the requirements attached to assistance for coal between middle-income and low-income countries, with more requirements expected from the former. Third, the US guidelines require more transparency, e.g., public disclosure of the alternatives analysis and of GHG emissions estimates, including the coal project vs. Bank assistance for low-carbon development. Lastly, they require MDBs to make substantial efforts to assist borrowers in seeking external financial resources to cover the incremental costs, should an alternative option to coal turn out to be more expensive. Although the US guidelines are aimed at pushing the MDBs to finance more low-carbon options over coal, the guidelines leave plenty of openings for coal-powered generation to receive MDB funding.

It is worth noting that this unilateral move by the US was not appreciated by several Bank executive directors (EDs) representing a number of middle- and low-income countries, including China, India, and Saudi Arabia. As such, these EDs fired back with a letter to the World Bank President protesting the US – the Bank's biggest shareholder – attempt to directly influence Bank operations. Moreover, the EDs expressed their objection to developing countries having to take out loans to finance more expensive renewable energy, while climate finance from developed countries has not been forthcoming and the US has not addressed its GHG emissions domestically.

[8] For the Treasury's Guidance Note go to: http://www.bicusa.org/en/Article.11715.aspx

3. World Bank Group Operations and Funds

The World Bank Group has three arms relevant to projects in the energy sector:

- the World Bank
- the International Finance Corporation (IFC)
- the Multilateral Investment Guarantee Agency (MIGA)

In addition to the operations financed by the WBG's own money, the WBG also manages/administers over $6 billion of donor money committed to special environmental funds, including:

- Global Environment Facility (GEF)
- Carbon Finance Unit – Prototype Carbon Fund
- Climate Investment Funds: Clean Technology Fund and Strategic Climate Fund
- Energy Sector Management Assistance Program (ESMAP)
- Asia Sustainable and Alternative Energy Program (ASTAE)

The World Bank and IFC can use both traditional, core funding and special environmental/climate change funds consisting of donor money. The following section describes the vast array of WBG activities in the energy sector. The three WBG arms use of traditional finance instruments, i.e., using WBG money, is explained first followed by the donor-based climate change funds.

3.1. World Bank – assistance to governments

The World Bank arm of the WBG consists of two institutions, the International Development Association (IDA) and the International Bank for Reconstruction and Development (IBRD). IDA provides assistance to low-income country governments (i.e., low per capita income or high incidence of poverty) and IBRD lends to middle-income and creditworthy low-income country governments.

Superior financing terms - The World Bank offers more attractive and, in many cases, cheaper financing than commercial lenders. IDA provides funding on a highly concessional basis, effectively 70-80% grant (Stern, 2009). Typically, an IDA loan has a ten-year grace period followed by very low interest rates and long periods before principal repayments begin. The IBRD can also offer both lower interest rates and longer tenors (i.e., repayment periods) than commercial lenders. Lower interest and longer tenor make projects more economical (affordable), and with it the ability to secure further finance.

Thus, the Bank's involvement in any energy sector project secures better, "cheaper" financing terms for the project than would otherwise be possible. This is true for renewable energy projects, but also especially true for large-scale fossil fuel development, e.g, thermal plants and pipelines. For example, "low-cost capital with long tenor" was one of the World Bank benefits listed in the South African Eskom coal plant Project Appraisal Document. Furthermore, South Africa's Minister of Energy and Public Enterprises Minister were often quoted in the news[9] stating that "failure to secure the [World Bank] loan would push up the cost of the Medupi project, as Eskom would have to resort to further fundraising on commercial terms." The World Bank loan, by contrast, was said to contain very favorable terms for Eskom, such as lower interest rates and more flexibility. Therefore, Bank finance for fossil fuels is a form of subsidy for carbon-intensive energy development.

Energy sector operations – IDA and IBRD provide direct funding for projects involving the development of oil, gas, coal, large hydro-power, new renewable energy[10], and energy efficiency, including: exploration, extraction, production, pipelines, ports, off-shore oil drilling, power generation, power transmission/distribution systems (e.g., electrical grids and metering), fuel switching (coal to gas), and rehabilitation/upgrading of thermal and hydro power units. Projects range from small-scale ($5 million for efficient lightbulbs in Ethiopia) to the very large-scale (e.g., $3.05 billion for Eskom 4,800 MW coal-fired super critical thermal generation plant in South Africa). In addition to direct project financing, the World Bank influences policies, regulations, and institutions that govern the power sector through technical assistance, analysis/research[11], and development policy lending (or DPL). These activities typcially focus on policy and institutional reforms, including: sector governance, budgets, energy pricing/tariffs/taxes, subsidies, model contracts, licensing, cadastre systems, and social and environmental policies.

Like direct project lending, DPLs are used to promote both low-carbon and carbon-intensive energy. For example, the Bank's $77 million DPL to Côte d'Ivoire for the Governance and Institutional Development project includes the goal of increasing the country's "ability to attract new investment into the petroleum sector." In addition, DPLs and technical assistance are key to promoting privatization of energy assets, often involving the largest and most valuable oil and gas resources, and overall electricity market development.

Lastly, the World Bank is significantly involved in many developing countries' energy development strategies at the sectoral, country, and regional levels. For example, since 2000 the World Bank has been actively involved in assisting and encouraging the development of

[9] *Business Day* (2010). Hogan confident of UK vote for Eskom plant loan. March 15, 2010; and *Reuters* (2010). US won't vote against Eskom loan – Hogan. March 12, 2010.

[10] The World Bank defines ***new* renewable energy** as energy from solar, wind, biomass, geothermal energy, and hydropower facilities with capacities up to 10 MW per facility.

[11] Often referred to as Economic and Sector Work (ESW).

regional power transmission and trade networks. Regional power integration initiatives that the Bank is involved in at various stages – from concept to construction to management – are located mainly in Sub-Saharan Africa, northern Africa, Central Asia and South Asia.[12] These regional power trade networks are mainly dependent on large-scale infrastructure and mega power generation projects, chiefly fossil fuel-based power or large hydropower. It is unclear how or if these large-scale, grid-based power trade networks will provide services to the poor, when the bulk of poor people are located in off-grid rural areas.

For example, Mozambique has identified five new large-scale electricity projects for the Southern Africa Power Pool (SAPP), including: 500 MW combined gas, 1,200 MW and 1,000 MW coal generation plants, and 1,500 MW and 1,000 MW hydropower plants (World Bank, 2008). These identified large power generation projects will mainly export their produced electricity to countries like South Africa where industrial demand is high (World Bank, 2008). While in Mozambique only 8% of the population has access to electricity (World Bank, 2008).

3.2 IFC and MIGA – lending to the private sector

The other two arms of the WBG relevant to the energy sector are the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA). Instead of assistance provided to governments, which the World Bank conducts, these two institutions only provide financing and investment guarantees to the private sector for projects in developing and transition countries.

Attractive financing terms - While the IFC does not compete with commercial lenders on interest rates, it does offer longer tenors, often around 10 years as opposed to 5 years for commercial loans (IEG, 2010a). Financial models suggest that a change from a 5-year to a 10-year tenor could boost the debt service ratio from 1 to 1.4, which is substantial enough to turn a project from unfeasible to bankable (IEG, 2010a).[13]

For some energy sector projects, the IFC package involves “B loans.” B loans are considered a means of mitigating sovereign risk. Under B loan structures, the IFC makes a loan to a private-sector borrower, thereby becoming the "lender of record," i.e., the sole contractual lender on the books of the borrower. However, instead of maintaining the entire loan on its own books, the IFC maintains only a portion-the "A" loan - and participates the remainder -the "B" loan- to commercial banks and/or institutional lenders. The IFC loan agreement ensures that both "A" and "B" loans receive identical treatment under the IFC loan package. In syndicated B loans, IFC flexible lending terms are typically matched by the other lenders.

Furthermore, much in the same way, that political risk insurance (PRI) can play an important financial catalyzing role – both MIGA and the World Bank can provide PRI at a lower cost than private agencies because the WBG’s special relationship with client governments lowers its risk. MIGA’s risk insurance covers the risks of currency transfer restrictions, expropriation,

[12] Regional power trading pools include: Southern Africa Power Pool (SAPP), West Africa Power Pool, East Africa Power Pool, Nile Basin, and Central Asia South Asia (CASA).

[13] The debt service ration (or interest coverage ratio) is very important from the lender's point of view. It indicates the number of times interest is covered by the profits available to pay interest charges. Thus, it is an index of the financial strength of an enterprise or project. The higher the debt service ratio the stronger the financial strength and the easier it is for a project to get finance.

war and civil disturbance, and breach of contract, typically for 15 – 20 years. In addition to lowering the cost of PRI and overall risk of an investment, MIGA and World Bank risk guarantees play an important role in a projects' ability to mobilize long-term commercial bank funding (i.e., longer loan tenors).

Energy sector operations – The IFC and MIGA provide direct funding/guarantees to the private sector for energy projects involving the development of oil, gas, coal, large hydro-power, new renewable energy, and energy efficiency, which include the same type of direct projects as the World Bank (please see list in World Bank section above). According to the Bank's Independent Evaluations Group (2010a), IFC direct loans to industry for energy efficiency mainly involve a program of screening IFC clients for EE opportunities consisting mostly of small loans with low GHG impacts (see Box 2 for further details). The IFC does not provide development policy loans. However, the IFC does provide technical assistance and advisory services, some of which is directed towards governments, such as advice on utility contracting and privatization.

In addition, the IFC and to a lesser extent the World Bank make investments, including in energy, through financial intermediaries (FIs). According to its own account, the portion of WBG funding going through FI operations has been growing substantially in recent years and already represents a formidable amount by overall size and portion of the WBG's portfolio. In FY2010, the World Bank provided an estimated $3.3 billion through FIs[14] and for several years running, FI operations have represented over 40% of IFC total investments. In an FI arrangement, the IFC provides loans or equity financing to an entity such as a local commercial bank, a private equity fund, or a special government-managed fund (in the case of the World Bank), such as an infrastructure development fund. The FI disburses the World Bank's and IFC's funds to various private companies and investment projects. Each FI has a portfolio of projects that are considered World Bank/IFC-supported sub-projects. However, unlike direct Bank project investments, there is no information publicly available on these individual sub-project investments, making it difficult to track what ultimately happens to FI funding.

A review of project documents from January 2007 to the present reveals that over $4 billion in investments taking place through FIs had portfolios targeting energy development (Mainhardt-Gibbs, 2010a) . Some FIs had portfolios consisting of between 10% and over 50% of investments in the energy sector.[15] Other FIs specified potential investments in oil and gas pipelines[16] as well as other fossil fuel-based projects. Although it is not known how much of the $4 billion relates directly to fossil fuel development, it is clear that FIs represent a substantial pathway for fossil fuel investment that is not being accounted for by the Bank in its annual energy sector figures.

In contrast, the World Bank's annual energy figures specifically capture FIs that are targeted at new renewable energy and energy efficiency – ensuring the Bank gets credit for climate-progressive activities without equal reporting of climate-destructive activities. A review of Bank investments revealed that in FY08 and FY09 approximately 20% of reported new renewable energy and energy efficiency funding went through FIs (Mainhardt-Gibbs, 2010a).

[14] Estimate is based on data provided in the World Bank's FY2010 Annual Report.

[15] An example is IFC's Capital Alliance Private Equity Fund III Ltd. Project in the West Africa Region. Up to 40 percent of the $500 million Fund is expected to be invested in energy projects principally in Nigeria.

[16] An example is IFC's India Infrastructure Fund project. The Fund specifies targeted investments in energy and utilities including oil and gas pipelines and import terminals.

However, without detailed reporting, it is unclear what type of projects were ultimately financed through the FIs.

Box 2. The Range of Energy Efficiency Activities

Energy efficiency covers both demand-side efficiency and supply-side efficiency components.

Demand-side efficiency includes improvements in efficiency resulting from load management, demand response programs, and direct load control; improvements in end-use energy efficiency in the residential, commercial, industrial, public-municipal, agricultural, and transport sectors; and energy conservation. Also included are energy efficiency improvements through institutional development, regulatory reforms, and improvements in utility management performance; introduction of improved building codes, appliance energy efficiency standards, and labeling systems; retrofits to meet new standards; energy audits; waste heat recovery; improved fuel-efficiency standards for automobiles; use of drip irrigation or irrigation pumping in agricultural systems; municipal water pumping; energy efficiency financing through financial intermediaries; and implementation of consumer awareness programs.

Supply-side energy efficiency encompasses transport systems (including modal shifts from cars to mass transit systems); district heating enhancements; improved power transmission and distribution, including enhanced metering systems, capacitors, and substation rehabilitation; power system optimization; plant rehabilitation (including plants that offset conventional fuels and the installation of supercritical boilers); improved operation and maintenance; and combined heat and power plants.

Source: World Bank Group, 2009. Beyond Bonn: World Bank Group Progress on Renewable Energy and Energy Efficiency in Fiscal 2005 – 2009.

3.3 Donor Funds Managed by the World Bank Group

In addition to the operations financed by the WBG's own money, considered its "core business", the WBG also manages/administers over $6 billion of donor money committed to special environmental funds with mandates to combat climate change. The following section provides a brief description of such donor funds.

Global Environment Facility (GEF)

A resolution by the World Bank's Board of Executive Directors in 1991 led to the establishment of the pilot Global Environment Facility (GEF), which was later designated as the financial mechanism for the U.N. Framework Convention on Climate Change in 1992. Since then, the WBG has administered the GEF donor trust fund and has been the GEF's primary implementing agency for investment projects meant to address climate change (note the GEF was set up to also specifically address biodiversity and desertification).

With respect to World Bank engagement on GEF funding for climate change projects, cumulative GEF resources committed to mitigation projects reached US$ 1.64 billion at mid-FY08, with a leverage on IBRD/IDA resources of roughly 2.2 billion (World Bank, SFDCC 2008).

Carbon Finance Unit – Prototype Carbon Fund

The World Bank Carbon Finance Unit uses finance contributed by governments and companies in OECD countries to purchase project-based GHG emission reductions in developing countries and countries with economies in transition. This is done through the two international offsetting mechanisms of the UN Kyoto Protocol – the Clean Development Mechanism (CDM) for developing countries and Joint Implementation for economies in transition.

International offsetting is a mechanism through which entities in developed countries, rather than reducing their own GHG emissions, pay for projects in developing countries or economies in transition for project-based emissions reductions. Each metric ton of carbon dioxide that is supposedly not emitted represents a certified emission reduction (CER) credit that can be traded and sold on carbon markets, and used by industrialized countries to meet part of their emission reduction targets under the Kyoto Protocol.

In April 2000, the World Bank made an early entry into the arena of carbon markets with the world's first carbon fund, the Prototype Carbon Fund (PCF). The PCF was intended to pilot the concept of carbon offsets/credits and pioneer the carbon market. As of October 2010, the PCF is a partnership between seventeen oil, energy, and finance/trade companies and six OECD governments and is managed by the World Bank (see Annex for list of PCF participants). The PCF has a total capital of $180 million.[17] The WBG's overall involvement in the carbon market has grown from the single PFC to 12 carbon funds currently housed within the Bank's Carbon Finance Unit. The most recent addition, the Carbon Partnership Facility, launched in December 2009 in Copenhagen, is supposed to facilitate programmatic, rather than project-based, offsetting beyond 2012.[18]

The promotion and use of carbon finance by the Bank is controversial. Many social and environmental organisations from various countries criticize that the carbon market approach is ineffective in reducing GHGs and simply passes the burden of emissions reduction from developed to developing countries. Moreover, critics charge that it stops the developed countries from genuinely planning a rapid transition from fossil fuels to more sustainable energy sources.

In addition, carbon credits are supposed to reward a project for directly reducing GHG emissions. Under the CDM framework, the carbon credit is supposed to tip a prospective project from infeasible to feasible. However, there are many Bank projects that have used carbon finance when without carbon finance the project already was at or above a 15% return on equity (ROE) (IEG, 2010a) – making the requirement of additionality, in this case the need for carbon finance, questionable.

[17] World Bank Carbon Finance Unit website on October 25, 2010. htpp://carbonfinance.org/

[18] Non-energy carbon finance includes the Forest Carbon Partnership Facility (FCPF) created in June 2008 with an ultimate aim of facilitating forest offsets. The FCPF was intended to build support for country readiness for "reducing greenhouse gas emissions from deforestation and forest degradation" (REDD), a topic currently under negotiation at the UNFCCC. The FCPF consists of two funds, the Readiness Fund and the Carbon Fund. For discussion on these funds see: Friends of the Earth: Capitalizing on Climate, 2010.

According to the Bank's Independent Evaluations Group (IEG, 2010b), as a vehicle for catalytic finance and technology transfer, the CFU's record is mixed. It has contributed to the diffusion of some technologies, such as landfill gas. On the other hand, much of the CFU's support for energy technologies has gone to projects where its financial leverage, and hence catalytic impact, was relatively small including wind and hydropower. The IEG concluded that carbon finance needs to be redirected away from hydropower, where it has minimal impact on project bankability, to applications where it can have more impact.

Climate Investment Funds: Clean Technology Fund and Strategic Climate Fund

In 2008, the Climate Investment Funds (CIFs) were created as part of the SFCCD to support the Bank's increased engagement in initiatives to address climate change. The total amount pledged by 13 countries to the CIF Turst Funds stands at US$6.1 billion as of March 31, 2010 with the majority coming from the US ($2 billion), the UK ($1.5 billion) and Japan (up to $1.2 billion). The funds are disbursed as grants, highly concessional loans, and/or risk mitigation instruments.

The CIFs include two funds, the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF). On its website, the Bank states that these financing instruments are designed to support low-carbon and climate-resilient development through scaled-up financing channeled through the Multilateral Development Banks (MDBs).[19] The CIFs are designed as an interim measure to give the MDBs the opportunity to demonstrate what can be achieved through scaled-up financing blended with traditional development finance. As such the funds include specific sunset clauses linked to future agreement on the UN climate change regime.

The Clean Technology Fund (CTF) has over 80 percent or currently $5.1 billion of the CIF-committed funds and is intended to provide finance for low-carbon energy projects or energy technologies that reduce emissions. It is aimed mainly at middle-income countries. In order for projects to be elegible for CTF funds in a given country, a country first needs to develop and get CTF Trust Fund Committee approval of a country-based CTF Investment Plan. These Investment Plans are supposed to build on existing country-owned strategies and illustrate how CTF resources will be used in major sectors of the economy, through a joint MDB program. The investment plan should prioritize projects according to: GHG emissions savings potential, demonstration potential, development impact, and implementation potential. As of September 12, 2010, thirteen countries had endorsed CTF Investment Plans: Colombia, Egypt, Indonesia, Kazakhstan, Mexico, Morocco, The Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam and the regional Middle East and North Africa concentrated solar power plan covering Algeria, Egypt, Jordan, Morocco and Tunisia.

The Strategic Climate Fund (SCF) is broader than the CTF and includes three programs:

1. Pilot Program for Climate Resilience (PPCR, replaces the previously proposed Adaptation Pilot Fund),

2. Forest Investment Program (FIP)[20], and

[19] African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank and World Bank Group.

[20] The Forest Investment Program is in its early stages, but it is supposed to help "build institutional capacity, forest governance and information;…forest mitigation efforts, including forest ecosystem services; and [support] [i]nvestments

3. Scaling-up Renewable Energy Program in Low-income Countries (SREP).

Only the SREP is discussed here because of its direct relevance to the energy sector. The SREP was approved by the SCF Trust Fund Committee in May 2009 to demonstrate the economic, social and environmental viability of low-carbon development pathways in the energy sector in low-income countries, mainly through renewable energy use. On June 22, 2010, the SREP Sub-Committee approved the first six pilots: Ethiopia, Honduras, Kenya, Maldives, Mali, and Nepal.

As the administrator, the CIF Trust Fund Trustee, and, most likely, the primary implementing agency, the World Bank Group would like to see the CIF become the permanent primary global climate fund. Towards this end, the Bank has framed its role not as a donor recipient, but as a source of climate finance through its ability to leverage additional funding. Recently, the WBG has advertised that they have mobilized an additional $4.3 billion in CTF co-financing. In addition, they estimate a further $36 billion will be leveraged in the coming years.[21] The certainty of this estimate is unknown.

Like other Bank climate initiatives, the CIFs are not without controversy. To begin, the CTF does not limit the types of technologies eligible for financing to new renewables (like solar, wind, small hydro power), but instead also supports "clean coal" and large hydroelectric dams. According to the Bank, "clean coal" represents "highly cost effective opportunities for significant GHG emissions reductions and/or there is potential for developing readiness for carbon capture and storage." Thus, the CTF supports technologies that reduce the carbon intensity of development, but not necessarily an overall reduction in GHG emissions. Critics argue that the CTF supports a "business-as-usual" approach by the Bank, rather than an actual low-carbon transition.

On the grounds that the CIF's support coal and that the Bank continues core finance for fossil fuel development, critics are advocating that donor governments should not be giving their climate funds to the WBG. Several groups push for the funds to be allocated to the UNFCCC. In addition to the argument that the WBG follows an ineffective approach to combating climate change, critics prefer the governance structure of the UNFCCC. Under the Bank[22], each CIF has its own Trust Fund Committee, and the SCF designates Sub-Committees to govern each of its programs. As a result of external pressure, each Trust Fund Committee and Sub-Committee is composed of equal representation by contributor countries and recipient countries. Even with this committee structure, critics say that at the UNFCCC provides a better practice for every country to have an equal voice. In contrast, they argue the World Bank is still a donor-controlled institution and establishing the CIFs at the World Bank has allowed developed countries to maintain control (Orenstein, 2010).

---

outside the forest sector necessary to reduce the pressure on forests such as alternative livelihood and poverty reduction opportunities." (World Bank website)

[21] World Bank, 2010. Climate Investment Funds set to mobilize US$40 billion for country-led low carbon growth; http://www.climateinvestmentfunds.org/cif/pf_2010_pressrelease_03_19

[22] The governance and organizational structure of CIF's two Trust Funds, the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF), include a Trust Fund Committee, a Partnership Forum, an MDB Committee, an Administrative Unit, and a Trustee. The Administrative Unit, MDB committee and Trustee are shared by both Trust Funds. CIF Administrative Unit is housed at the World Bank Group. The World Bank's IBRD serves as the Trustee for the Climate Investment Fund (CIF). It holds in trust, as a legal owner and administrator, the funds, assets and receipts that constitute the Trust Fund, pursuant to the terms entered into with the contributors. Each MDB is responsible for the use of funds transferred by the Trustee in accordance with its own policies, guidelines and procedures and the decisions of the Trust Fund Committees. The CIF Trust Fund Committees are currently working on a CIF Results Framework that will be used to evaluate the CIF supported projects and programs. The Results Framework is currently going through external consultation.

Many developing countries have also voiced opposition to the WBG climate fund role. For example, several developing countries have made clear that funds contributed to the CIFs will not count as meeting developed countries' obligations under the UNFCCC (Orenstein, 2010). Furthermore, it is believed that the CIFs represent a detriment to financing through the UNFCCC. One of the CIFs, the World Bank's Pilot Program on Climate Resilience, directly competes with two UNFCCC funds – the Adaptation Fund under the Kyoto Protocol and the Least Developed Countries Fund. While developed countries pledged $945 million in less than 2 years for the Bank's Pilot Program on Climate Resilience, the UNFCCC's Least Developed Countries Fund – established 9 years ago to address the urgent adaptation needs of the least developed countries - had only $223 million in pledges at the end of April 2010 (Orenstein, 2010).

Energy Sector Management Assistance Program (ESMAP) and the Asia Sustainable and Alternative Energy Program (ASTAE)

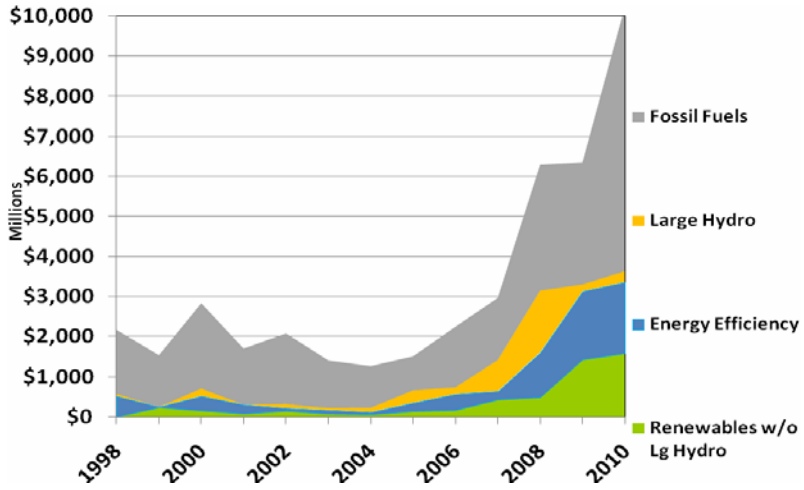
As previously mentioned, the WBG provides analytic and advisory assistance (AAA), which can provide important inputs to development policy lending operations and country development strategies. Many of these activities in the energy sector have been funded by two donor-supported programs housed in the World Bank, the Energy Sector Management Assistance Program (ESMAP) and the Asia Sustainable and Alternative Energy Program (ASTAE). ESMAP supports analyses to inform energy policies, focusing particularly on social and environmental issues. Since 1994, ESMAP has executed 421 AAA projects totalling $89 million, including *inter alia* $9.2 million for renewable energy, $3.2 million for district heating, and $3.8 million allocated to cross-cutting climate change themes (IEG, 2010a).

As far as results, ESMAP projects have not been evaluated as a group. Most importantly, there is no indication how often the WBG or the host government has followed up on any climate or poverty progressive recommendations stemming from ESMAP work. In contrast, ASTAE tracks its projects according to specific impact-based indicators: FY07-FY09 $6.2 million supported 1,030 MW direct new RE and 12.4 GW indirect from regulation and investment mechanisms; 1.6 direct terraWatt-hours EE savings and 26.2 terraWatt-hours indirect; 611,000 direct new households with access; and 99 $MtCO_2$ directly avoided emissions (IEG, 2010a.) The ASTAE specific outcomes tracking and public reporting process is a good example for the Bank's other energy sector operations to follow.

4. In Practice: World Bank Group Energy Sector Funding Trends

In order to guage how the WBG implements its stated approach to the energy sector, it is important to review the institution's funding trends. Figure 2 illustrates the findings of recent assessments (Mainhardt-Gibbs, 2009 & 2010b) of the WBG's lending to the energy sector by fuel source. In climate change terms and the implications this has for the poor, the trends are worrisome. As Figure 2 shows, if recent trends in the Bank's lending for the development of fossil fuels do not sharply change, the Bank's contribution on balance to a low-carbon growth path of the energy sector will be questionable.

Figure 2. World Bank Group Energy Sector Financing by Fuel Source[23]



Sources: Mainhardt-Gibbs, 2009[24] & 2010b

The Bank's total lending to the energy sector, including assistance for policy and institutional reforms not tied to a specific fuel, has substantially increased from 1998 to 2010. Starting from $4 billion in 1998, dipping to only $1.7 billion in 2004, and reaching over $13 billion in total energy sector finance in FY2010.[25] With this increase, the Bank has made important and impressive gains in renewable energy and energy efficiency. However, Bank lending to fossil fuels continues to increase at an alarming rate. Moreover, Table 1 indicates that much of the WBG's recent spikes in fossil fuels are specifically in the dirtiest of the fossil fuels - coal.

[23] Figure 2 and Table 1 only represent WBG financing associated with specific fuel sources. Total WBG contributions to the energy sector also include financing for policy and institutional reforms as well as transmission systems that are not tied to a specific fuel.

[24] Download the report from the Bank Information Center's website at http://webmail.bicusa.org/exchweb/bin/redir.asp?URL=http://www.bicusa.org/admin/Document.100733.aspx

[25] World Bank website as viewed on September 16, 2010 at http://go.worldbank.org/ERF9QNT660.

For the most recent year, FY2010, World Bank funding for coal hit a record high for the institution of $4.4 billion, including $3.05 billion to the Eskom 4800 MW Medupi supercritical coal plant in South Africa. Overall, total fossil fuel funding also hit a record high of $6.6 billion, a 116% increase over the previous year (see Table 1). The Bank's total lending for new renewable energy and energy efficiency combined also hit a record of $3.4 billion. However, the Bank's support for coal alone still far surpasses this low-carbon benchmark. In addition, it is important to note that the Bank's new RE and EE figures are not based only on the Bank's own money, but also include between $500 to $870 million in donor climate fund money (also note that unlike Bank reporting the energy figures in this report include syndicated B loans[26]).

Table 1. World Bank Group Energy Sector Financing FY2006 to FY2010[27]

	FY2006		FY2007		FY2008		FY2009		FY2010	
	mill. $	annual percent change	mill. $	annual percent change	mill. $	annual percent change	mill. $	annual percent change	mill. $	annual percent change
Fossil Fuels	**1,505**	**78%**	**1,551**	**3%**	**3,137**	**102%**	**3,042**	**-16%**	**6,577**	**116%**
Coal	119	1283%	140	18%	1,041	642%	966	-7%	4,400	356%
Large Hydro Power	**180**	**-46%**	**777**	**333%**	**1,529**	**97%**	**177**	**-88%**	**284**	**60%**
New RE & EE	**576**	**59%**	**641**	**11%**	**1,593**	**148%**	**3,128**	**96%**	**3,355**	**7%**
New RE	176	15%	435	147%	485	11%	1,427	194%	1,584	11%
Energy Efficiency	399	91%	206	-48%	1,108	438%	1,701	54%	1,771	4%

Source: Mainhardt-Gibbs, 2009 & 2010b

With regards to other fossil fuels in FY2010, the WBG provided over $1 billion for oil and gas exploration and production, including two offshore oil drilling operations totaling $729 million and a heavy fuel oil thermal plant for $31 million. In addition, the Bank provided $740 million to support the development of gas markets and gas power generation.

According to the WBG, for 2007-2009 it achieved a 40% share of its total energy lending for renewable energy and energy efficiency (please note it includes large hydropower and in addition to core Bank budget, the RE and EE figures include donor funds from CIFs, GEF, and

[26] For an explanation of B loans, please see Section 4 World Bank Group Operations and Funds: IFC and MIGA.

[27] FY2010 and FY2009 new RE, EE, and large hydropower are taken directly from the World Bank and have not been independently verified. FY2006 and FY2008 are adjusted for inflation to 2007$ because these figures were obtained from a study that covered 11 years of lending. For the methodology on how these figures were computed, please see report: Mainhardt-Gibbs, Heike, 2009. World Bank Energy Sector Lending: Encouraging the world's addiction to fossil fuels. Bank Information Center, February 2009. http://www.bicusa.org/en/Article.11033.aspx

carbon finance). This relates to an impressive FY2009 amount of $3.1 billion for new RE and EE. This compares to a global clean energy investment of $145 billion in 2009 (UN Energy, 2010). There is no doubt that FY2009 was a good year for the Bank's assistance to RE and EE. It is the first time the WBG spent more, although only slightly more, on new RE and EE than on fossil fuels[28] ($3.10 billion to $3.04 billion, respectively). The WBG is reflective of global energy trends. As in 2008, more investments were made in renewable than in conventional power capacity globally with 46 percent of total global renewable capacity located in developing countries (REN21, 2009). However, comparing the latest three-year time periods, instead of a single-year snapshot, illustrates a Bank approach that still favours fossil fuels (see Table 2).

Table 2.World Bank Group Energy Funding Three-year Average (million $)

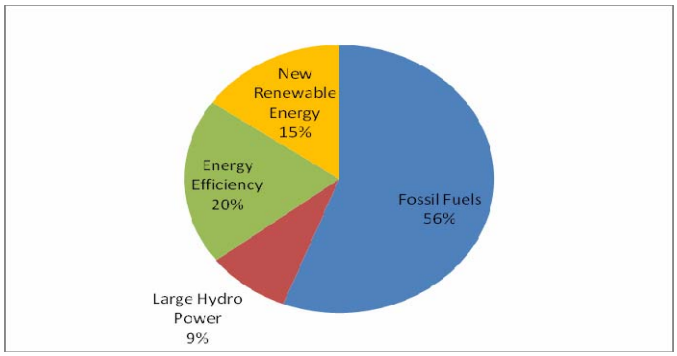
	FY05-FY07	FY08-FY10
Fossil Fuels	**1,300**	**4,252**
Coal	89	2,136
Large Hydro Power	**424**	**663**
New RE & EE	**523**	**2,692**
Energy Efficiency	271	1,527
New RE	252	1,165
Total	**2,248**	**7,607**

Source: Mainhardt-Gibbs, 2009 & 2010b

As illustrated in Table 2, considering the growth comparison of FY05-FY07 to FY08-FY10, fossil fuel spending tripled and new RE and EE saw a five-fold increase. Most worrisome, in climate change terms, spending on coal increased by 24 times the previous three-year period. However, the increases in new RE, EE, and coal all need to be weighed by the fact that these sources all started from very small baselines – so the growth rates need to be put in the correct context. The fact is that a tripling of overall fossil fuels still results in much higher absolute funding in both time periods than for new RE and EE. During the last three years, the Bank spent on average 58 per cent more on fossil fuels than on new RE and EE combined. Furthermore, the Bank spent on average $970 million or 83 per cent more on coal than on new renewable energy sources. Over the latest period, fossil fuels represented a 56 percent share of WBG funding by fuel source; coal alone made up 28 percent. New RE and EE represented 35 per cent, and large hydropower represented 9 percent (see Figure 3).

[28] It is important to keep in mind the WBG does not report fossil fuel support going through financial intermediaries as well as some infrastructure and development policy lending. In contrast, such lending vehicles are typically accounted for in the RE and EE funding figures.

Figure 3.World Bank Group Energy Funding by Fuel Source Three-year Average (FY08-FY10)



Source: Mainhardt-Gibbs, 2009 & 2010b

Measuring the Bank's contribution to the energy sector in terms of new energy generation capacity (Megawatts), the Bank's Independent Evaluations Group (IEG, 2010) reports that from FY2003 to FY2008 large hydropower dominated in IDA countries[29]. In IBRD and blend countries, coal accounted for 1/3 of new capacity, gas 28 percent, and large hydropower 18 percent. The IEG did not provide any figures on how much new renewable energy represented.

From FY2008 to FY2010, the World Bank Group has provided $6.4 billion for coal-based energy development predominantly in middle-income countries (see Table 1). It is interesting to note that the Bank's recent spending on coal exceeds the donor countries' commitments to the Bank's Climate Investment Funds (created in FY2008 with approximately $6.2 billion). The Bank defends its support for coal on the basis that the need for electricity is so great in the developing world that coal plants are going to be built with or without Bank support and without Bank support the cheaper, dirtier type of coal plants will proliferate. However, a recent IEG evaluation (2010b) of Bank coal power projects from FY2003 to FY2008 did not find any evidence to support this claim. The IEG found, with the exception of one technical assistance coal project, the Bank was not involved in ex-ante planning of the coal plant projects and the technology was largely or entirely determined by project sponsors before WBG involvement. Even in the technical assistance case, the Bank's involvement didn't impact technology choice because a definitive technology recommendation was not made.

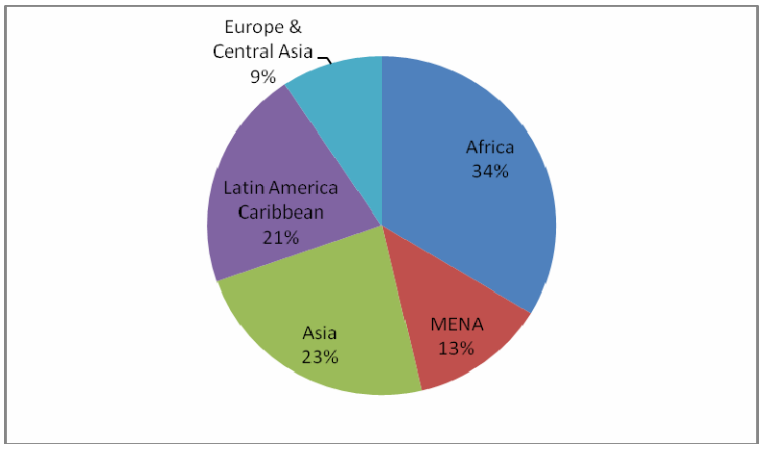
Furthermore, the IEG report recommends that decisions on coal should use system-wide analyses that consider efficiency alternatives, local pollution costs, and a range of shadow prices for CO2. For example, the IEG found that the scope for efficiency improvements in India is large and were insufficiently tapped and not fully considered in the case of the IFC supported 4,000 MW Tata Mundra supercritical coal plant in 2008.

Regarding the WBG's regional distribution of energy financing, for the energy sector as a whole the five-year distribution (FY2006 to FY2010) revealed that the Asia region received the

[29] This report does not assess the WBG's hydropower activities. It is however, important to note that hydropower comprises the largest share of the recent WBG RE portfolio as of FY2008 (IEG, 2010). During the 1990's, heavy criticism of the social and environmental impacts of large dams led to the convening of the World Commission on Dams and to a slowdown in WBG commitments to hydropower. Although, the WBG endorsed most of the Commission's recommendations, Bank large hydropower projects rebounded after 2000 (see Figure 2 and Table 1). Furthermore, the World Bank has recently announced its intention to increase investments in hydropower, especially in Africa (IEG, 2010). Even if some hydropower offer GHG advantages, it is also vulnerable to climate change risks as hydro dams depend on sustained water levels and rainfall.

most financing equal to 33 percent or just over $12 billion (according to WBG figures). Africa received 27 percent or close to $10 billion. Latin America Caribbean and the Europe & Central Asia (ECA) regions came in at 17 and 14 percent respectively and the MENA region came in last at 8 percent of spending. Figure 4 shows that the Africa region received the most for fossil fuels during this five-year time period with 34 percent or $5.6 billion. This result is chiefly due to the South African Eskom coal plant ($3.05 billion). Asia received the second largest chunk of fossil fuel spending equal to $3.9 billion (for an annual regional breakdown of energy sector funding, please see Annex 4).

Figure 4. World Bank Group Fossil Fuel Financing by Region FY2006–FY2010

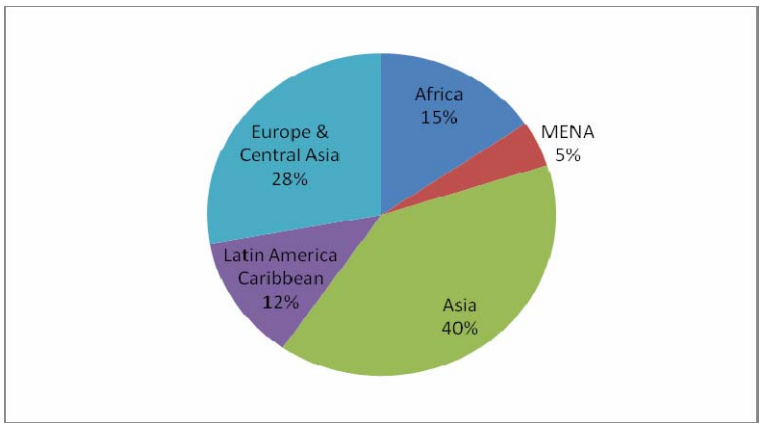


Source: Mainhardt-Gibbs, 2009 & 2010b

Figure 5 provides a five-year[30] regional breakdown of financing for new renewable energy and energy efficiency. The Asia region comes out on top with 40 percent or $2.4 billion and the ECA region comes in second with 28 percent or $1.7 billion. The majority of ECA's new RE and EE financing is due to EE.

[30] Please note unlike the total energy sector and fossil fuel financing regional comparisons which are based on five-year data from FY2006 to FY2010, the new RE and EE five-year totals are based on FY2005 to FY2009. New RE and EE data are taken from the World Bank Group directly and the regional distribution was not yet available for FY2010.

Figure 5. World Bank Group New Renewable Energy and Energy Efficiency Financing by Region FY05–FY09



Source: World Bank Group; Mainhardt-Gibbs, 2009 & 2010b

Under-reporting fossil fuels. In considering the assessment of WBG energy spending on carbon-intensive versus low-carbon energy sources, it is important to note that the total funding going to fossil fuels is likely significantly under-reported by the Bank due to problems with its classification of energy projects and lack of transparency. For example, as previously discussed in the IFC and MIGA lending section of the paper, the WBG makes investments in energy through financial intermediaries (FIs). However, unlike direct Bank project investments, there is no information publicly available on the FI individual sub-project investments, making it difficult to track what ultimately happens to FI funding. A review of project documents from January 2007 to April 2010 revealed that over $4 billion in investments taking place through FIs had portfolios targeting conventional energy development (Mainhardt-Gibbs, 2010a). Yet, no information is available or included in the Bank's energy sector funding figures. In contrast, the World Bank's annual energy figures specifically capture FIs that are targeted at new renewable energy and energy efficiency.

In addition, development policy lending operations and infrastructure operations represent two other project categories that sometimes should be counted towards fossil fuel development, instead of being considered in the generic ″other energy″ category by the Bank. For example, infrastructure involving energy sector elements, such as transmission networks and ports are often categorized by the Bank as "other" energy sector, general power transmission & distribution, or are simply lumped in with general infrastructure projects outside of the energy sector altogether. However, many of these Bank-categorized "other" infrastructure projects are still often targeted at the development of specific energy sources, to date mainly at conventional fossil fuel-based energy.

For example, in FY2010 IBRD provided $1 billion to the Fifth Power System Development Project in India. The Bank's project documents state that the primary activity is to strengthen the transmission network for large bulk power transfers from two newly commissioned thermal coal plants, the Sasan Ultra Mega Power Project and Tata Mundra Ultra Mega Power Project (note: IFC provided a FY2008 $450 million loan for theTata UMPP). Also, in FY2010, the IBRD provided $330 million to the Haryana Power System Improvement Project in India. Again, Bank project documents state that the project's main activity is to improve the availability and efficiency of electricity supply through strengthening the transmission and

distribution systems – "partially to provide infrastructure needed for new thermal power plants."

Both of these projects involve construction of transmission infrastructure necessary to utilize newly built fossil fuel-based thermal plants, mainly coal. Thus, the infrastructure is specifically to support the development of fossil -based energy and should be accounted for by the Bank accordingly. However, the Bank does not count either one of these projects towards its thermal power generation annual figures in FY2010. Further supporting this line of argument is the fact that many Bank power generation projects, both fossil fuel-based and renewable energy-based, often include financing for associated power lines.[31]

GHG emissions. A recent Bank Information Center study (Mainhardt-Gibbs, 2009) also determined that Bank fossil fuel projects matter to global CO_2 emissions. When the fossil fuels involved in the WBG lending projects for the 2008 fiscal year are combusted, the project lifetime CO_2 emissions from this one-year of financing will amount to approximately 2,072 $MMTCO_2$ or 7% of the world's total annual CO_2 emissions from the energy sector, or more than twice as much as all of Africa's annual energy sector emissions.[32] The WBG does not typically disclose GHG emission estimates for its fossil fuel projects (see Section 3 on SFDCC).

Renewable energy and energy efficiency. In addition to its fossil fuel lending, the Bank's assistance to renewable energy (RE) and energy efficiency (EE) also comes under scrutiny. Critics, including the Netherlands Ministry of Foreign Affairs (2010), claim that taking a closer look at the underlying figures reported by the WBG leads to a more modest result with regard to the RE portfolio. For example, in FY2009: 1) more than half the RE and EE joint total relates to energy efficiency of fossil energy (US$ 1.7 billion); and 2) the greater part of the World Bank's renewable energy programs (US$ 1.4 billion or 17% of its total energy lending portfolio) are funded by specific donor funds aimed at clean energy and are not a structural part of WB core energy lending.

This is in no small part due to the WBG's incentive system. Even though some RE and EE projects have high returns, they often are not attractive to Bank staff and management in an institution that measures results by volume of disbursements. The IEG (2010b) states that the Bank staff incentive system "explains why much of the RE and EE work is done under donor funds and not the core Bank budget".

In addition, the IEG (2010b) found that "[i]n many cases, it is unclear if IFC direct investments have resulted in energy efficiency gains". On the other hand, the IEG report has found energy efficiency can offer countries direct economic returns that dwarf those of most other development projects, while also reducing greenhouse gas emissions. In Ethiopia, for instance, a $5 million investment in efficient light bulbs prevented the need to spend more than US $100 million on polluting diesel generators. The report calls for a re-targeting of industrial energy efficiency finance for greater effectiveness.

However, even with more emphasis and greater effectiveness of RE and EE operations, continued Bank lending to fossil fuels will make a low-carbon transition very difficult. Each

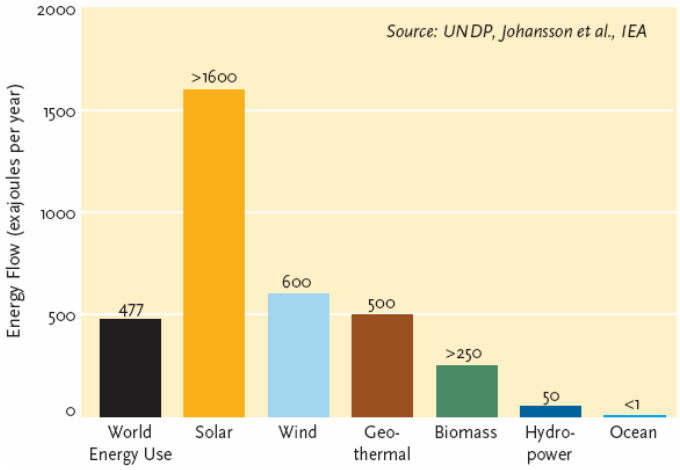
[31] This is the case for two FY2010 IBRD coal-fired power plant projects - Morupule B Generation and Transmission Project in Botswana ($379 million) and Eskom Power Investment Support Project in South Africa ($3.02 billion). Both of these project financing amounts, which include funding for associated power lines, are counted in the Bank's thermal power generation annual figures.

[32] The CO_2 emissions estimates do not account for related policy lending, technical assistance, financial intermediaries or several fossil fuel project investments in FY2008 for which there was not enough information to base an estimate, such as exploration projects.

fiscal year the Bank supports a coal, oil, or gas project represents a commitment to carbon-intensive energy sources for the next 20 to 50 years. High efficiency coal plants (e.g., supercritical) still emit more than twice as much CO_2 per MWh than combined cycle natural gas plants. Moreover, many of the World Bank's largest oil and gas extraction and pipeline projects have been and continue to be aimed at exports to developed countries, which further feed the developed countries' appetite for fossil fuels. As a result, the Bank is not adequately encouraging the UNFCCC Annex I countries to reduce their GHG emissions from fossil fuels.

Thus far, the Bank's assistance to the energy sector appears to be following a business-as-usual development path. Along this path, the WBG seems to think it is a forgone conclusion that coal must continue to dominate as an energy source for developing countries. But, research points in a different direction. A recent Worldwatch Institute report (Flavin, 2008) advocates a no-carbon energy roadmap and demonstrates that developing countries are well positioned to leapfrog the carbon-intensive development path of the 20th century and go straight to the advanced energy systems that are now possible. Figure 6 from the Worldwatch Institute report illustrates that there exists ample low-carbon alternatives to fossil fuels. However, to reach the economic tipping point in favor of low-carbon development, Worldwatch Institute states it will "require innovative public policy and strong political leadership." Some of the policies highlighted in the report include efficiency standards, zero-carbon building codes, and reduced energy subsidies.

Figure 6. Estimate of Available Energy Resources Using Today's Technology



Source: Flavin, 2008

Furthermore, the IPCC (2007) points out:

> "There is *high agreement* and *much evidence* that mitigation actions can result in near-term co-benefits (e.g. improved health due to reduced air pollution) that may offset a substantial fraction of mitigation costs. Initial estimates show that returning global energy-related CO_2 emissions to 2005 levels by 2030 would require a large shift in investment patterns, although the net additional investment required ranges from negligible to 5 to 10%."

Perhaps the International Energy Agency (IEA, 2009) provides the best argument for a halt to fossil fuel development:

> "A 450 path towards Green Growth, instead of the reference case, would bring substantial benefits – avoid the worst effects and costs of climate change, energy security benefits – lower oil and gas imports, and reduced energy bills, much less air pollution and huge health benefits. The challenge is enormous, but it must be met. Improved energy efficiency and deployment of [low-carbon] technology are critical. Each year of delay adds $500 billion to mitigation costs between today and 2030."

A path towards 350ppm, as many stakeholders and developing countries support, would achieve even more benefits and avoid more damaging effects.

5. Access to Energy for the Poor

One important largely unanswered question remains – who ultimately benefits from the energy projects supported by the Bank? How many of the 1.5 billion energy-impoverished are receiving energy services as a result of Bank projects?

The World Bank defines energy access specificly as ″projects aimed at increasing access to electricity services.″ As suggested by this definition, the Bank's overwhelming focus is on electricity generation. Other energy requirements of the poor – such as for heating, cooking, and mechanical power – receive much less attention, with the possible exception of district heating investments. The Bank further elaborates that for IDA countries, ″access includes all generation, transmission and distribution projects, as they are all needed for increased electrification.″ However, for IBRD countries, ″only projects specifically aimed at increasing electricity access (e.g., rural electrification projects) [are] included."[33]

According to the Bank's own assessment (SEGEN, 2010) of financing for ″access-oriented″ energy projects, the majority of WBG energy sector finance does not target the poor. The Bank assessment reveals that over the past eight years (FY2003 to FY2010), only 22% of WBG energy sector finance was aimed at access for the poor or $9.7 billion went to access out of a total $44 billion for the energy sector. For the most recent year (FY2010), access only accounted for 8% or $1 billion out of a total $13 billion. However, given the Bank's loose definition for energy access and overall lack of monitoring, even some of the 22% is questionable as described below.

With regards to WBG fossil fuel investments, critics argue that it is too often large multi-national industries and the well off and not the poor who are receiving energy services. A recent Oil Change International report (Mainhardt-Gibbs and Bast, 2010) evaluated WBG financing for fossil fuel projects in FY2009 and FY2010 to determine whether or not projects directly targeted energy access. The study also reviewed the WBG's own assessment (SEGEN, 2010) on energy access for the same time period. Although the Bank does not point this out, the Bank's own assessment reveals that none of the coal plants or oil projects financed during FY2009 and FY2010 qualified as promoting energy access, even though the rhetoric of energy access was used in urging some of the projects' approvals (e.g., South African Eskom coal power project). WBG spending on coal-based generation during these two years alone dwarfed the Bank's spending on projects aimed at access by 66 percent or $5.4 billion compared to $3.2 billion respectively.

In addition, the Oil Change International study highlighted the following specific findings:

- None of the 26 fossil fuel projects reviewed in FY2009 or FY2010 [representing $9.6 billion or 45 percent of all energy sector financing] targeted energy access for the poor or electricity for services important to the poor, such as health clinics, schools, or telecommunications.

- The Bank's own assessment did not classify any coal or oil projects as access. They identified only two gas projects as access, but the rationale was found to be highly questionable.

[33] The World Bank's energy access definition is taken from the WBG's 2007 Clean Energy Investment Framework.

- Most often, the World Bank's project documentation does not identify the intended consumer of the energy services.

- At least six fossil fuel projects identified industrial demand as a direct target of the project.

- Overwhelmingly, energy projects do not plan to monitor the number of poor receiving energy services from the project.

There were only two fossil fuel projects classified by the World Bank Group's analysis as "access" projects – both of them for natural gas – one in Nigeria and one in Bangladesh. However, the independent evaluation found the Bank's access classification for both projects questionable. These projects planned to supply gas power to existing urban-based electricity systems and there were no measures to ensure or track that the additional gas generation would reach any poor. The Bank's approach to energy in IDA countries makes it a foregone conclusion that any electricity generation or transmission project translates into access for the poor. Such an approach is highly vulnerable to perpetuating an energy scenario providing access only for industry and the well off – potentially leaving the poor yet again in the dark.

In contrast to a lack of evidence for fossil fuel projects' contribution to energy access for the poor – many of the Bank's new renewable energy projects provide direct energy benefits to the poor. For example, according to Bank project documents, the 2009 IDA-financed Yemen Rural Energy Access project extended the grid to serve 174,000 homes as the first phase of a three-part project that will connect 529,000 homes to the grid for the first time. The project also financed 18,000 new solar home systems for rural households that were unable to be connected to the grid. The Lighting Africa Program is catalyzing the large-scale adoption of LED and other high-efficiency lighting technologies aimed at benefiting 500 million Africans who are dependent on kerosene and candle lighting. In addition, there are some data establishing a direct link between increased income and poverty reduction from the implementation of solar home system (SHS) projects. In India, income of some rural households increased by 15 to 30 percent – due to increased home industry output (IEG, 2010a). In China, a 2007 study in 6 villages found that 95 percent of SHS users claimed increased incomes, 15 percent claimed significant increases (IEG, 2010a).

However, it is important to note that just because a project is new renewable energy does not mean that it benefits the poor or that is does not pose negative impacts. A shift to clean energy may still leave out the same groups, i.e. poor, that were left out of large-scale fossil fuel projects. This may be due to high-costs – leading to only the priviledged receiving services. For example, some new RE projects are simply connected to the existing national grid system with no assurance that any poor people will gain access, such as the IFC financed AES Karvana wind project in Bulgaria. In addition, some new RE projects are targeted at services for industry, such as the IFC financed Auro Mira Bio Systems Kanyakumari biomass project in India. Although these projects may not be specifically targeted at the poor, they still may be meeting priorities for low-carbon energy development, and, thus, may be good energy project candidates for Bank support. Lastly, even when new renewable energy projects appear to be more targeted at access for the poor, the Bank still is not consistently monitoring project results to ensure the poor are benefitting.

6. Poverty and Climate Change Criteria for Energy Operations

According to the World Bank Group (2009), the Bank's proposed new energy sector strategy, which is currently under review, "*will articulate a way forward to help developing countries achieve the twin objectives of:*

- improving access and reliability of energy supply; and
- facilitating the shift to a more environmentally sustainable energy development path."

On these twin objectives, most stakeholders agree. However, critics remain skeptical on whether the Bank will truly change its approach in the energy sector in order to successfully achieve these objectives. As this document has demonstrated, the Bank needs to change its current approach of high and increasing lending to fossil fuels and the pervasive reliance on trickle down energy benefits to the poor, which are typically uncertain and ill-defined. The Bank needs to strictly follow robust project criteria for both energy access for the poor and low-carbon development.

In addition, the WBG's Independent Evaluations Group (2010b) concluded that in order "[t]o meet power demands, the World Bank Group's scarce human and financial resources are best spent in helping clients find domestically preferable alternatives to coal power, such as through increased energy efficiency. Coal support should be a last resort when lower cost and concessionally-financed alternatives have been exhausted and when there is a compelling case WBG support would reduce poverty or emissions."

With the aim of obtaining direct energy benefits for the poor and a quick transition to low-carbon energy development, this section puts forward a list of criteria on poverty and climate change against which to screen all WBG energy sector projects. As such, the following indicators were developed by compiling definitions and important uses of energy by the poor from reviewing literature and programs of organizations related to energy, development, poverty and climate change.[34]

The set of criteria are largely envisioned for project investments in the energy sector. In addition, Box 3 contains a second set of criteria to address WBG development policy and technical assistance energy operations that were developed by the World Resources Institute (Ballesteros and Nakhooda, 2010). Please note the criteria are intended to be applied in addition to the World Bank's existing Social and Environmental Safeguards and the IFC's Performance Standards. The criteria focus on energy access and climate change and are not meant to address other weaknesses and gaps of the existing WBG safeguards and standards

[34] Sources: Civil society submissions from Indonesia and India to the WBG's Energy Sector Strategy Review; Bank Information Center, 2010. Sustainable Energy for Equitable Development: Contribution to the World Bank's Energy Sector Strategy Review. April 2010; Ballesteros, Athena and Nakhooda, Smita (2010); HIVOS, 2010. Sustainable Energy: A Driving Force for Development; and Zarsky, Lyuba and Wilson, Emma. 2009. Power to the Poor: Sustainable energy at the base of the pyramid, IIED Briefing Papers; and UN-Energy (2005).

(e.g., governance, gender, and free prior informed consent). The energy poverty and climate change criteria include:

a) Energy access and energy poverty - The link between increasing energy supply and how that translates into increasing the poor's access to energy is quite uncertain and debatable. The following criteria strive to address gaps in access and affordability for the poor and to capture the various energy requirements important for the poor. WBG energy operations must directly target the poor and ensure that energy benefits are reaching the poor. Energy must be understood not only as grid electrification but also as delivery of the energy requirements of individuals and communities, including heating, cooking, and mechanical power. As such, WBG energy sector projects should meet at least one of the first six requirements in conjunction with criteria seven and eight below.

1) The project focuses on a targeted number of new electricity connections or energy services aimed at low-income households or businesses owned by low-income individuals (e.g., market kiosks).
2) The project focuses on the delivery of energy requirements for the poor, such as heating, cooking, mechanical power for agro-processing, and motive power for transport.
3) The project focuses on sources of energy or electricity for services important to the poor, such as health clinics, schools, crop irrigation or telecommunications.
4) The project focuses on improving the reliability of electricity services in an area that largely serves low-income households and/or services important to the poor that currently has intermittent or unreliable access.
5) The project involves power grid extension to new rural or peri-urban areas (as opposed to simply feeding into the existing grid system).
6) The project involves rural, off-grid solutions for providing energy services.

In conjunction with one or more of the above criteria:

7) The project involves provisions to ensure energy is affordable for the poor – e.g., effective, transparent safety nets to ensure that poor people can afford energy for basic needs, such as subsidies targeted at access, not consumption (as opposed to only having measures aimed at cost recovery – such as tariff increases).
8) The project will monitor the number of low-income households, businesses, or social services receiving new energy services.

b) Climate change and low-carbon energy development: Currently, fossil fuel technologies are often deemed "cheaper" and more readily available than renewables because the World Bank's economic analysis surrounding these technologies does not consider the full costs of fossil fuel projects. Furthermore, consideration of renewable energy technologies and energy demand reduction investments are shortchanged due to a lack of adequate information and analysis of viable alternatives to proposed fossil fuel projects. In order to promote a credible level playing field to all low-carbon energy alternatives, energy projects must meet the following criteria:

1) Project appraisal demonstrates effectiveness of the proposed project in reducing overall GHG emissions from the energy sector – not simply GHG-intensity reduction of the proposed project.
2) Project appraisal must be based on full cost accounting, including, *inter alia*: future risks to fuel supply (e.g. price fluctuations), associated infrastructure needs, life-cycle

costs, policy risks (e.g., carbon tax or cap and trade), subsidies/tariff structure, and costs of social/environmental externalities (e.g. cost of carbon emissions and air pollution[35]). Full cost accounting should also assess the project's impact on the countries' vulnerability to external shocks, such as world oil prices – as the poor are the most vulnerable to these economic fluctuations.

3) Project appraisal includes a substantiated, comprehensive alternatives assessment[36]. The alternatives assement needs to consider not only individual energy technologies, but also scenarios involving a mix of technologies coupled with energy demand reduction and efficiency. In addition, all possible financing options to bring down the costs of low-carbon alternatives must be considered.

4) The project appraisal document discloses GHG emissions estimates, the full cost accounting, and the comprehensive alternatives assessment.

c) **Country-specific aspects**: It is important for all proposed energy operations to recognize differences among countries and ensure adequate consideration regarding country-specific priorities, available resources, appropriate technologies and vulnerabilities. Specifically within the World Bank system, it is important to differentiate between IDA low-income countries and IBRD middle-income countries. For example, IBRD countries, which have mature financial markets, are capable of financing "necessary" fossil fuel projects on their own and, thus, the Bank should only finance low-carbon energy projects. As such, WBG energy projects must meet the following criteria:

1) Project appraisal provides evidence that the proposed project is appropriate and feasible for the location.

2) Project appraisal provides evidence that country-specific climate vulnerabilities have been fully considered (e.g. potential water shortages).

3) The project substantiates its contribution to the country's specific energy development plans and priorities and, above all, to specific targets on access for the poor and low carbon development.

4) For World Bank IDA low-income countries: Support increase in affordable energy access for the poor. Decentralized renewable energy will often be the best option, but Bank support does not exclude fossil fuel projects that have met the criteria for energy access for the poor and low-carbon development/climate change.

5) For World Bank IBRD middle-income countries: Support for low-carbon transition – excludes coal and oil.

d) **WBG public accountability aspects**: In order for development of the energy sector to both increase access for the poor and transition to a low-carbon development path, the process must be transparent, accountable, and participatory. To this end, all WBG energy sector projects must:

[35] For example, according to the Project Appraisal Document for the Kosovo project, the environmental costs (mostly due to health impacts of local air pollution) was around 0.8 eurocents/kWh for a 600 MW subcritical lignite-based plant, which adds about 20% more to the levelised cost of producing electricity from the lignite plant. The environmental cost analysis was based on a dispersion model from the University of Stuttgart, Germany, along with information from epidemiological studies. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/09/25/000160016_20060925112319/Rendered/PDF/35430.pdf"

[36] The required elements of such an assessment need to be developed in a participatory manner.

1) Disclose intended consumers of the energy project, including any associated Power Purchase Agreements.
2) Have an accountable process in place for civil society and local population participation in upfront project design, evaluation of alternatives assessment, and project monitoring/evaluation.
3) Establish a framework for robust monitoring and evaluation of the above poverty and climate indicators.
4) Disclose project-level monitoring and evaluation outcomes.

7. Energy Project Evaluations using Suggested Criteria

This chapter provides an initial and preliminary evaluation of four WBG energy sector projects, two coal projects and two new renewable energy projects using the access-for-the-poor and climate change criteria. The evaluation was limited to project documents publicly available on the WBG's websites. Therefore, they should be treated as preliminary evaluations intended to provide a general idea for how the suggested criteria could be considered when reviewing energy sector projects.

Box 3. Sustainable Energy Policy Indicators

Investing in Sustainable Energy Futures: Multilateral Development Banks' Investments in Energy Policy (Ballesteros and Nakhooda, 2010) provides an 11-point framework describing the policies, regulations, and institutional capacities multilateral development bank's (MDBs) should require to support investments in sustainable energy options that provide development benefits while reducing greenhouse gas emissions. The study assessed MDB energy policy projects against the framework and found that a relatively small number of MDB projects addressed many of the elements of sustainable energy proposed in the framework.

Policies and Regulations:

- Long-term integrated energy planning.
- Policies and regulations encouraging energy efficiency.
- Policies and regulations promoting renewable energy.
- Access to electricity for the poor.
- Pricing structures encouraging efficiency and reducing consumption.
- Subsidy reforms to reveal true costs of fossil fuels and promote the viability of sustainable energy options.

Institutional Capacity and Governance:

- Executive agencies' capacity for sustainable electricity.
- Regulatory agencies' capacity to oversee implementation of sustainable electricity policy.
- Utilities' capacity to promote energy efficiency and renewables.
- Transparency of policy, planning, and regulatory processes for electricity.
- Stakeholders' engagement in policy, planning, and regulatory processes.

According to the evaluation, neither of the two coal projects met any of the access-for-the-poor criteria and only one of the new renewable energy projects met one of the initial six access criteria. None of the evaluated project met access criteria on monitoring results to ensure the poor are benefiting or provided provisions to ensure energy would be affordable to the poor. Regarding the climate change criteria, both coal projects provided GHG emissions estimates, which are not always provided by energy sector projects. However, neither project met the criteria that the project reduces overall GHG emissions from the energy sector.

Furthermore, the first coal power generation project in Chile financed by IFC did not disclose any project appraisal or indication of full cost accounting or an alternatives assessment.

The second coal power generation project was the IBRD-financed Eskom Medupi supercritical coal plant in South Africa. This project did provide an alternatives assessment based on economic cost ($/kWh & NPV), total financing requirements, and used a shadow price for carbon of $29/ton CO_2. Concentrated Solar Power, wind, and large hydropower were among the alternatives considered. However, there were several concerns with the approach. To begin, the economic costs did not reflect full cost accounting for the coal plant – such as potential future coal price fluctuations, public health impacts and potential water shortages. It appears the coal plant's total financing requirements were based already on obtaining World Bank and African Development Bank financing, which would be lower than if based on available market finance rates and terms. Furthermore, the feasibility of the new RE projects heavily relied on the availability of carbon finance and the Clean Technology Fund, which were determined not to be enough. Other potential concessional funding sources were not considered. Lastly, the alternatives assessment did not appear to consider utilizing a combination of technologies.

Two examples of Energy Sector Projects (FY09-FY10)

Note: All project information in this table was obtained from project documents available on the World Bank and IFC websites.

Institution - Funding (mil $): IFC - $740

Country -Project Name: Chile - CTA Central Termoelectrica Andino

Fuel Source –Activity: Coal: Construction and operation of circulated fluidized bed (CFB) thermal power units (300MW) using a combination of coal, petroleum coke, and biomass fuels.

Access for the Poor: Project does not meet any of the criteria. No indication that there will be additional provisions to ensure affordable energy for the poor.

1. New electricity connections or energy for the poor	No: CTA has a 21-year power purchase agreement with Codelco, a Chilean state-owned copper mining company, for 150 MW capacity sales. CTA also entered into a turn-key contract with Cobra, a company of ACS S.A. (Spain). Any additional electricity will be sold on the spot market.
2. Electricity for services important to the poor (e.g., clinics, schools):	No
3. Delivery of energy requirements for the poor:	No
4. Improved reliability of electricity services to the poor:	No
5. Power grid extension to	No

rural or peri-urban areas:	
6. Rural, off-grid energy solutions:	No
7. Provisions to ensure energy is affordable for the poor:	No

Climate Change / Low-carbon

1. Overall energy sector GHG emissions reductions	No: CO2 emission of Unit 1 are estimated at 1,217 million ton CO2 per unit per year (assuming 50% coal and 50% petcoke), although actual emissions will depend on the mix of coal, petcoke, and whether biomass is used. The use of biomass from renewable sources may reduce total emissions by up to 34,500 ton CO2 per unit per year.
2. Full cost accounting:	No indication that full cost accounting has been applied. No project appraisal has been disclosed.
3. Substantiated, comprehensive alternatives assessment:	No indication of an alternatives assessment.
4. Financing options for lower-carbon alternatives are exhausted.	No

Institution - Funding (mil $): IBRD - $3,050

Country -Project Name: South Africa Eskom Power Investment Support Project

Fuel Source –Activity: Coal: Construction of the Medupi coal-fired super critical thermal generation plant (4,800 MW). The project also involves $750 million for renewable energy and energy efficiency.

Access for the Poor: Project does not clearly meet any of the criteria. (Note: The WB itself does not consider this a access-oriented project)

1. New electricity connections or energy for the poor: No
2. Electricity for services important to the poor (e.g., clinics, schools): No
3. Improved reliability of electricity services to the poor:

Potentially for poor people already connected to the grid, but it is not possible to determined

4. Power grid extension to rural or peri-urban areas: No
5. Rural, off-grid energy solutions: No
6. Provisions to ensure energy is affordable for the poor: No – not project related

The government of SA has an existing Free Basic Electricity (FBE) policy, which supplies poor rural households with 50kWh/month/HH free of charge. This only applies to households already electrified. Thus, the WB project is not enhancing this existing program. Furthermore, the project documents state that "Typical consumption of rural households once electrified is 85kWh/HH/month."

No indication that there will be additional provisions to ensure affordable energy for the poor, which is worrisome given the tariff increases or that the number of poor households serviced would be monitored. The electricity is mainly to address electricity shortages stemming from industrial processes, including large smelters. Residential consumers will also be serviced. However, Eskom is raising electricity tariffs substantially (by 25% annually for the next 3 years), in part to help pay for Medupi. Thus, the project is not considered to directly target access for the poor.

Climate Change / Low-carbon

1. Overall energy sector GHG emissions reductions : NO	The Expert Panel Report indicated that the SFDCC coal climate criteria had not been met. Noting that Medupi will produce large quantities of carbon dioxide while CO_2 savings attributable to renewable projects that are part of the loan are "nowhere near commensurate" with the scale of Medupi's emissions.
2. Full cost accounting – not adequate	The evaluation did incorporate the social cost of CO2 emissions using a value of $29 / ton CO2. However, additional social and environmental externalities were not adequately incorporated, including: No assessment of health costs associated with Medupi or the associated coal mining. Inadequate assessment of potential water shortages associated with cooling at the plant and potentially with climate change impacts. It is indicated that an assessment on the social impacts of the tariff hikes was developed, but no such report or results were disclosed.
3. Substantiated, comprehensive alternatives assessment: Not comprehensive	Main considerations in the assessment of alternatives to Medupi included: economic cost ($/kWh or NPV of lifetime costs to supply the energy provided by Medupi); total financing requirement; and undiscounted lifetime GHG emissions, in million tons over the assumed 30-year economic life. (Note: elsewhere in the project document, Medupi is expected to have a 50 year life). Although an assessment was provided there are concerns regarding comprehensiveness: It does not appear to consider utilizing a combinaton of technologies, it does not consider varying costs of technologies and fuels over the life of the project. It

	does not exhaust concessional financing options for wind and CSP. Moreover, the full costs of Medupi are not adequately reflected, such as public health costs. The South African National Energy Regulator (Nersa) calculates that wind energy will be cheaper than coal by 2025 and concentrated solar power will be on a par with coal by 2030. Project Appraisal states that "renewable energy alternatives to Medupi score best on the GHG emission attribute, but have significantly higher financing requirements, which far exceed what can reasonably be expected from the presently available carbon financing sources. Wind and CSP would require about US$20-25 billion of additional carbon finance, 30-40 times the financing provided by CTF and IBRD for the wind and CSP components of the proposed project. This level of carbon or public finance at present is not currently available to South Africa."
4. Financing options for lower-carbon alternatives are exhausted	Appears to only consider what IBRD and CTF are willing to give and carbon finance.

8. Needs and Opportunities for Civil Society Intervention

8.1 Important advocacy targets and partnerships

WBG Executive Directors - Important targets include the large shareholders: US, Japan, UK, Germany, and France. The large developing countries, which are often large borrowing countries, have considerable influence and are extremely important in the Bank's energy debate. These include, *inter alia*: India, China, Brazil, Mexico, South Africa, and Turkey (in FY2009, India received the most World Bank finance at $9.3 billion – 15 percent of overall IBRD finance and 17.7 percent of all IDA aid). However, it is important to approach these EDs with colleagues representing the country. In addition, it is strategic to assist the EDs that already hold climate progressive positions, such as the Nordic countries.

World Bank Staff – Key targets include: Inger Anderson, World Bank Vice President for Sustainable Development – influential to the WBG's Energy Sector Strategy; Daniel Kammen[37], Chief Technical Specialist for Renewable Energy and Energy Efficiency – in a newly created position, he will play a key role in setting the Bank's overall Energy Strategy. Andrew Steer: World Bank's first-ever ambassador for climate change and low-carbon development.

Parliamentarians – Parliamentarians represent an important target on two fronts: 1. They represent democracy and a more inclusive, representative voice than the finance ministries represented at the Board, and 2. In donor countries, they vote on the General Capital Increase and IDA Replenishment (see below). It is very important to engage the developing country parliamentarians in partnership with developing country CSO representatives. One useful organization is the Global Legislators Organization for a Balanced Environment (GLOBE) with affiliates in US, EU, Europe, Japan, Russia, Southern Africa, and South Central Asia and regional networks as well.

Government Agencies – Government agencies that actively feed into the WBG process include, *inter alia*: US Treasury, UK DfID, and Germany GTZ.

Media – Media sources that tend to cover WBG issues and get the attention of the Bank include: *Financial Times*, *Wall Street Journal*, *Bloomberg News*, *Emerging Markets*, *The Economist*, *International Herald Tribune*, and any major city news paper.

Partnerships – Developing country CSOs are key, especially if they come from one of the large developing countries or one particularly threatened by climate change (e.g., small island state – note: New Zealand is the ED representing Pacific Island states). Additional strategic partnerships include, *inter alia*: social and environmental CSOs, faith-based CSOs, labor associations, renewable energy associations/companies, and academics – especially if they are well known. (For additional, CSOs working on energy, climate change, and poverty, please see Box 4)

[37] Kammen founded UC Berkeley's Renewable and Appropriate Energy Laboratory and co-directs the school's Transportation Sustainability Research Center.

8.2. Occasions and reference points for intervention

World Bank Group Energy Sector Strategy (2011 – 2020)

A window of opportunity for energy policy reform is taking place through the on-going review process of the World Bank Group's Energy Sector Strategy, which will guide their energy investments for the coming decade. In October 2009, the WBG released an Energy Strategy Approach Paper for use during the first round of consultations. Even though the Approach Paper put forward a dual objective of increasing energy access and environmental sustainability, it largely presented a business-as-usual approach for the Bank. This left CSOs fearing the new strategy will simply continue to justify fossil fuel finance, especially for coal, instead of put forward a truly innovative approach for transitioning to a low-carbon energy development path.

Box 4. List of some CSOs working on Energy, Climate Change, and Poverty
Cameroon: Centre pour l'Environnement et le Développement (CED)
Central and Eastern Europe: CEE Bankwatch Network
Columbia: Acción Ecológica, Centro de Derechos Económicos y Sociales
Georgia: Green Alternative
Germany: Bund für Umwelt und Naturschutz (BUND), Rettet den Regenwald e.V., Urgewald e.V., World Economy, Ecology & Development (WEED), Evangelischer Entwicklungsdienst (EED), Brot für die Welt
India: Vasudha Foundation, Laya Resource Centre, Centre for Science and Environment, Forum of Collective Forms of Cooperation (FCFC)
Indonesia: Institute for Essentiel Services Reform (IESR)
Italy: Campagna per la Riforma della Banca Mondial
Nigeria: Environmental Rights Action (ERA)
Norway / Sweden: Norwegian Church Aid, Church of Sweden
Papua New Guinea: Centre for Environmental Law and Community Rights (CELCOR)
Peru: Citizens Movement Against Climate Change
South Africa: Legal Resources Centre (LRC), African Network for Environmental and Economic Justice (ANEEJ), Earth Life, Economic Justice Network
United Kingdom: Bretton Woods Project, Christian Aid, Ecumenical Council for Corporate Responsibility (ECCR)
United States: Amazon Alliance, Amazon Watch, Bank Information Center, Center for International Environmental Law (CIEL), Crude Accountability, Natural Resources Defense Council, Oxfam, Oil Change International, Project Underground, Sierra Club, Sustainable Energy and Economy Network (SEEN)
International: Earth Rights International, Friends of the Earth International (FOEI), Rainforest Action Network, Third World Network (TWN), Aprodev (Europe)

The WBG is currently reviewing the feedback gathered during the first round of consultations and preparing a draft of the strategy. It is planned that a draft strategy will be posted to the Bank's Website early next year for a two-month electronic comment period, the second round of consultations. During this time the World Bank Group will elicit additional input and comments from multiple stakeholders via the Web. The Bank's goal is to have a final strategy ready for Board discussion by mid 2011.

The PDF-Version of this study includes an Annex 5 presenting a summary of government position statements on the WBG's Energy Sector Strategy Review.

Individual Country Energy Sector Strategies

As far as concrete implementation is concerned, the individual country strategies are more important than the overall WBG energy sector strategy. The country strategies are intended to be country driven and reflect individual country priorities, resources, vulnerabilities, and specific targets. The formulation of these strategies is supposed to be participatory so there should be formal and public intervention points for civil society. Each country has its own schedule for producing energy sector strategies.

General Capital Increase (GCI)

The multilateral development banks (MDBs) are currently requesting a General Capital Increase (GCI) or a request for an increase in core funds from donor country governments. For the World Bank Group, the IBRD is requesting a 30% increase or $80 billion and the IFC is requesting a 75% increase or $200 million. The proposed GCI would be the first increase for the Bank since 1988 (Friedman, 2010b). As would be expected, donors do not typically hand over additional funding without attaching conditions, such as key reforms at the institutions. Given that many donor governments have positioned climate change as one of their top international aid priorities, it makes the GCI process an important advocacy target.

It is important to find out when government/parliamentarian meetings/hearings are taking place on the GCI and feed into that process directly. In a September 15, 2010 US Senate Foreign Relations Committee hearing on the GCI, the U.S. Executive Director Ian Solomon testified, that without the GCI increase "the bank would need to sharply curtail its lending program." In addition, Senator Kerry was the lone voice calling for changes in the bank's lending strategy, saying, "as we invest limited public resources, we have to ensure that these banks support our clean energy and climate priorities." (Friedman, 2010b) Washington-based CSOs prepared talking points on the GCI and are largely to credit for Senator Kerry's statement.

Donor country decisions on the GCI are expected sometime early to mid-2011.

IDA Replenishment

Unlike the IBRD and IFC, who are loan and investment based, IDA, which is a mix of grants and highly concessional loans, needs to request money from donor governments on a regular basis. The process is referred to as IDA Replenishment and takes place typically every two to three years. Like the GCI, it is a time for governments to request institutional and policy

reforms at the WBG in exchange for funding. It is also a time when donor country parliamentarians have a stronger voice at the institutions as they are the ones ultimately deciding on how much funding to approve.

The current IDA-15 funding comes to an end this December and discussions are currently underway to mobilise resources for IDA-16.

Individual World Bank Project Advocacy

In addition to sector strategies and funding requests, individual energy sector projects that are of social and environmental concern represent good advocacy targets. Project specific advocacy can result in the project not getting approved by the Board or to improvements made to the original project design. Even when problem projects get approved, it can still be used to bring attention to important issues and concerns. For example, the recent Eskom Medupi coal plant in South Africa was approved by the World Bank, but it received a historical number of EDs abstaining from the vote (i.e., five). It served to substantially heighten the debate on the World Bank's coal lending and sent a signal to the World Bank that several important EDs do not want to see other large coal projects come before the Board anytime soon.

It is important to find out the Board Approval Date of any targeted project, which should be listed on WBG project summary documents.

Annual General Meetings and Spring Meetings

The Annual General Meetings (AGM) and the Spring Meetings always represent an important advocacy opportunity as the WBG member country finance ministers come together and the World Bank members and management discuss and make decisions on institutional and policy reform. CSOs from around the world, including developing countries, also congregate in Washington for the meetings (note: every third year the AGM takes place in a member developing country). During both meetings, there is a Civil Society Forum which has CSO requested events/meetings at the WBG with WBG staff, Executive Directors, and civil society. The AGM typically takes place in early October and the Spring Meetings typically take place in mid-April.

9. Conclusions and Recommendations

It is critical to poverty reduction and combating climate change that global energy systems quickly transition to low-carbon technologies, such as new renewable energy and energy efficiency. As such, the World Bank Group's twin objectives for energy development in developing countries include: 1. increasing access to and reliability of energy supply, and 2. facilitating the shift to a more environmentally sustainable energy development path.

However, in the course of assessing the World Bank Group's vast role in international energy development, this document has revealed a number of concerns with respect to meeting these objectives. Top among the list are the WBG's energy sector financing trends. Despite frameworks for clean energy development, special climate change funds, and exceeding commitments to increase funding for renewable energy and energy efficiency, FY2010 was still a record year for fossil fuel spending. WBG support for coal alone outstripped spending on new renewable energy and energy efficiency combined by a billion dollars. Moreover, WBG support for the development of fossil fuels is grossly under-reported due to problems with the Bank′s classification of energy projects and lack of transparency. Even more troubling is the fact that none of the fossil fuel projects in FY2009 and FY2010 targeted energy access for the poor.

Simply providing more scope to expand renewable energy and energy efficiency and accomplishing significant gains on this front, does not prevent the Bank from increasing investments in coal plants, offshore deep water oil drilling, or any other fossil fuel project. If the Bank's appetite for lending to fossil fuels does not sharply change, the Bank's contribution on balance to a low-carbon growth path of the energy sector will be questionable. Each fiscal year the Bank supports coal, oil, or gas development represents a commitment to carbon-intensive energy sources for the next 20 to 50 years.

Given that climate change stands to harm poor populations the most – threatening gains on poverty reduction – and the Bank′s fossil fuel projects have not proven to increase energy access for the poor, there does not seem to be much justification for the Bank's continued subsidized financing of fossil fuels. At least this appears to be the case for middle income countries – which make up the overwhelming majority of WBG coal projects – with mature financial markets and the capacity to finance fossil fuel projects on their own.

Recommendations:

Energy Access for the Poor – By and large, WBG energy sector operations need to more directly address poor people's energy needs and not simply assume that increasing electricity translates into benefits for the poor. Towards this end, the WBG should:

- Provide an analysis of costs and benefits to the poor for all energy sector projects, including, *inter alia*, health and livelihood costs/benefits associated with the project's contribution/mitigation of climate change.

- Revise the WBG's definition of ″access-oriented″ energy projects to only include those that demonstrate direct energy benefits to the poor based on qualified criteria.

- Expand the scope of the Bank's access operations beyond only electricity services to include other energy requirements of the poor including, *inter alia*, cooking, heating, and mechanical power.

- Require all energy projects to track and publicly report on energy access for the poor against project-level specified access indicators.

- Promote innovative energy access policies that ensure affordability for the poor and provisions of direct energy services for the poor.

- Commit to aggressive lending targets for energy access for the poor both in the WBG's overall energy portfolio and by country.

- Develop and fully implement WBG staff incentives towards achieving established energy access portfolio and country-specific targets.

Climate Change and Low-carbon Development – The WBG must lead the way in funding low-carbon energy even in cases where it is costlier than conventional options. Towards this end, the WBG should:

- Calculate and disclose project GHG emissions.

- Require full cost accounting for energy sector project evaluations[38], including, *inter alia*:

  a) future risks to fuel supply (e.g., price fluctuations)
  b) associated infrastructure needs (e.g, transmission lines, fuel transport)
  c) life-cycle costs
  d) policy risks (e.g., future carbon tax)
  e) subsidies/tariff structure
  f) costs of social and environmental externalities (e.g., carbon valuation, public health impacts)

- Comprehensively assess and disclose alternative energy options for all proposed energy projects. The alternatives assement needs to consider not only individual energy technologies, but also scenarios involving a mix of technologies coupled with energy demand reduction and efficiency. In addition, all possible financing options to bring down the costs of low-carbon alternatives must be considered.

[38] Fossil fuel technologies are often deemed "cheaper" and more readily available than renewables because the World Bank's economic analysis surrounding these technologies does not consider the full costs of fossil fuel projects.

- Lend to coal and oil development solely to provide access to the poor and only as a last resort.

- Hire more staff (especially within the IFC) with renewable energy expertise.

- Promote innovative new renewable energy and energy efficiency policies that provide the right incentives and priorities in the areas of tax incentives, transmission, investment, feed-in tariffs, and land-use policies. Policy design must incorporate the needs of and protections for the poor.

- Provide political leadership through convincing member countries that it is in their best interest to invest in low- and no-carbon energy resources.

- Commit to aggressive lending targets for new renewable energy and energy efficiency both in the WBG's overall energy portfolio and by country.

- Develop and fully implement WBG staff incentives towards achieving the stated climate change/low-carbon development goals.

World Bank Group Public Accountability and Accurate Accounting – The WBG needs to better assess and fully account for its role in the energy sector as it relates to global climate change, both positive and negative, and how this translates into the overall well being of the impoverished. Towards this end, the WBG should:

- For all power generation projects, clearly identify the targeted or likely consumers, including disclosure of any project associated Power Purchase Agreements.

- Publicly report aggregate funding for the overall development of fossil fuels annually and always include it in comparison when reporting of Bank annual support for new renewable energy and energy efficiency;

- Accurately account and publicly report the amount of WBG funding going to the overall development of fossil fuels, large hydropower, new renewable energy, and energy efficiency taking place through infrastructure projects, development policy loans, technical assistance, financial intermediaries, syndicated B loans, and other Bank projects that involve services to the energy industry.

- Disclose a project-by-project breakdown associated with the WBG's annual energy sector funding figures according to support for oil, gas, coal, large hydropower, new renewable energy and energy efficiency.

- Disclose a project-by-project breakdown associated with the WBG's annual energy sector funding figures for access for the poor.

10. Literature Cited

Ballesteros, Athena R. and Nakhooda, Smita (2010). Investing in Sustainable Energy Futures: Multilateral Development Banks' Investments in Energy Policy. World Resources Institute (WRI) and International Institute for Sustainable Development (IISD), April 2010:
http://www.wri.org/publication/investing-in-sustainable-energy-futures

Bank Information Center (2010). Model Energy Strategy:
http://www.bicusa.org/en/Article.11859.aspx

Flavin, Christopher (2008). Low-Carbon Energy: A Roadmap. WorldWatch Report 178. WorldWatch Institute, Washington, DC. 2008.

Friedman, Lisa. (2010b) FINANCE: Administration asks Senate to contribute to major World Bank funding increase (09/16/2010), Lisa Friedman, ClimateWire, E&E reporter

Friedman, Lisa (2010a). FINANCE: Senate presses World Bank to reduce coal plant loans (08/12/2010) Lisa Friedman, ClimateWire, E&E reporter

Friedman, Lisa (2010c). FINANCE: World Bank's climate change envoy steers around hot-button issues (09/09/2010), E&E reporter ClimateWire

High-level Commission on Modernization of World Bank Group Governance (2009). Repowering the World Bank for the 21st Century, October 2009.

IEA (2009). World Energy Outlook 2009. International Energy Agency.
www.worldenergyoutlook.org/docs/weo2009/WEO2009_es_english.pdf

IEG (2010a). "Climate Change and the World Bank Group, Phase I: An Evaluation of World Bank Win-Win Energy Policy Reforms". Independent Evaluations Group , 2010.

IEG (2010b). Climate Change and the World Bank Group: Phase II The Challenge of Low-Carbon Development, Independent Evaluations Group, August 5, 2010.

IPCC (2007). Fourth Assessment Report: Climate Change 2007. Inter-governmental Panel on Climate Change.
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

Mainhardt-Gibbs, Heike. (2009). World Bank energy sector lending: encouraging the world's addiction to fossil fuels. Bank Information Center, February 2009.
http://www.bicusa.org/en/Article.11033.aspx

Mainhardt-Gibbs, Heike (2010a). Fueling Contradictions: The World Bank's energy lending and climate change. Bretton Woods Project, Campagna per la Riforma della Banca Mondial, and Urgewald, April 2010.

Mainhardt-Gibbs, Heike (2010b). World Bank Group Energy Sector Financing Update. Bank Information Center, September 2010.

Nakhooda, Smita (2010). The Clean Technology Fund: insights for development and climate finance. World Resources Institute, March 2010.

Netherlands Ministry of Foreign Affairs (2010). Position Paper: Promoting World Bank investments in renewable energy. July 2010

Orenstein, Karen (2010). Capitalizing on Climate: The World Bank's Role in Climate Change and International Climate Finance. Friends of the Earth US. June 2010.

REN21 (2009). Renewables Global Status Report: 2009 Update. REN21 Secretariat, Paris, 2009.

SEGEN (2010). Energy Access at the World Bank Group. World Bank Group, September 24, 2010. Forthcoming publication.

Stern, Nicholas (2009). The Global Deal: Climate Change and The Creation of a New Era of Progress and Prosperity. New York: Public Affairs, 2009.

UN-Energy (2005). The energy challenge for achieving the Millennium Development Goals. New York: UN-Energy.
Available at: http://esa.un.org/un-energy/pdf/UN-ENRG%20paper.pdf

UN-Energy (2010). Delivering on Energy. 2010:
http://esa.un.org/un-energy /pdf/ Delivering_on_Energy_ebook.pdf

World Bank Group (2009a). Energy Strategy Approach Paper. World Bank Group, October 2009.

World Bank Group (2009b). Beyond Bonn: World Bank Group Progress on Renewable Energy and Energy Efficiency in Fiscal 2005 – 2009.

World Bank (2008). Project Information Document: Concept Stage. Mozambique Regional ‚Transmission Development Program APL Series, Phase 1. June 10, 2008.

World Bank (2005). "World Bank. „Thematic Knowledge: Climate Change" (citing IPCC studies). As cited in Sohn, J.,

Nakhooda S., and Baumert, K. 2005. Mainstreaming climate change considerations at the multilateral development banks. World Resources Institute, Washington, DC.

World Bank Group (2010a). Classifications Used in World Bank Group Energy Lending Reporting Accessed on the Internet September 27, 2010.
http://siteresources.worldbank.org/INTENERGY2/Resources/WBGDefinitions.pdf

World Bank Group (2010b). Energy Data. Accessed on the Internet September 27, 2010.
http://go.worldbank.org/ERF9QNT660

Selected Weblinks

- www.aneej.org
African Network for Environmental and Economic Justice (ANEEJ)

- www.brettonwoodsproejct.org
Bretton Woods Project

- www.cseindia.org
Centre for Science and Environment (CSE), India

- http://priceofoil.org/
Oil Change International

- www.foei.org
Friends of the Earth international

- www.bicusa.org
Bank Information Center

- http://en.iesr-indonesia.org/program/access-to-energy/
Institute for Essentiel Services Reform (IESR), Indonesia

- www.irena.org
International Renewable Energy Agency (IRENA)

- www.laya.org.in
Laya Resource Centre, India – Decentralised Energy Options

- www.ren21.net
Renewable Energy Policy Network for 21st Century

- www.urgewald.org
Urgewald, Germany

- www.wri.org
World Resources Institute (WRI)

List of Abbreviations

AAA	Analytic and advisory assistance
AOSIS	Association of Small Island States
ASTAE	Asia Sustainable and Alternative Energy Program
BAP	Bali Action Plan
CDM	Clean Development Mechanism
CER	Certified emission reduction
CFB	Circulated fluidized bed
CIFs	Climate Investment Funds
CO_2	Carbon dioxide
CTF	Clean Technology Fund
ECA	Europe & Central Asia
EE	Energy efficiency
EIF	Clean Energy Investment Framework
ESMAP	Energy Sector Management Assistance Program ()
FBE	Free Basic Electricity
FIP	Forest Investment Program
FIs	Financial intermediaries
GEF	Global Environment Facility
GHG	Greenhouse gas
GLOBE	Global Legislators Organization for a Balanced Environment
IBRD	International Bank for Reconstruction and Development
ICSID	International Center for the Settlement of Investment Disputes
IDA	International Development Association
IEA	International Energy Agency
IEG	Independent Evaluations Group
IFC	International Finance Corporation
IPCC	Inter-governmental Panel on Climate Change
MDBs	Multilateral Development Banks
MDGs	Millennium Development Goals
MENA	Middlel East and North Africa
MIGA	Multilateral Investment Guarantee Agency

MRV	Framework of measurement, reporting, and verification
PCF	Prototype Carbon Fund
PPCR	Pilot Program for Climate Resilience (, replaces the
Ppm	Parts per million
PRI	Political risk insurance
RE	Renewable energy
REDD	Reduced Emissions from Deforestation and Degradation
ROE	Return on equity
SAPP	Southern Africa Power Pool
SCF	Strategic Climate Fund
SFDCC	Strategic Framework on Development and Climate Change
SHS	Solar home system
SREP	Scaling-up Renewable Energy Program
WBG	World Bank Group

Annex

Annex 1. Prototype Carbon Fund Participants

GOVERNMENTS

Government of Canada

Government of Finland

Government of Norway

Government of Sweden

Government of the Netherlands

Japan International Cooperation Agency

COMPANIES

Name	Sector	Country
British Petroleum - Amoco	Oil	Great Britain
Chubu Electric Power Co.	Electricity	Japan
Chugoku Electric Power Co.	Electricity	Japan
Deutsche Bank	Financial	Germany
Electrabel	Energy	Belgium
Fortum	Energy	Finland
Gaz de France	Energy	France
Kyushu Electric Power Co.	Electricity	Japan
MIT Carbon	Trade	Japan
Mitsubishi Corp.	Trade	Japan
Norsk Hydro	Oil	Norway
RaboBank	Financial	Netherlands
RWE	Electricity	Germany
Shikoku Electric Power Co.	Electricity	Japan
Statoil ASA	Oil	Norway
Tohoku Electric Power Co.	Electricity	Japan
Tokyo Electric Power Co.	Electricity	Japan

Annex 2. World Bank Group Financing for Coal FY2007 – FY2010

Institution	Country	Project	Activity	Amount (mil. $)	Production Capacity (MW)	Fiscal Year Approved
IFC	India	Lanco Amarkantak	Build coal-generated power plant.	8		2007
IFC	Indonesia	PT Makmur Sejahtera Wisesa	Construct, own and operate a mine-mouth coal-fired power plant in South Kalimantan.	121.8*	60	2007
IFC	Philippines	Masinloc Power Partners Co. Ltd	Financial assistance to privatize an existing coal-fired 600 MW power plant.	271.2		2008
IFC	Philippines	Calaca Power	Financial assistance to privatize an existing coal-fired 600 MW power plant.	300*		2008
IFC	India	Tata Mundra Ultra Mega	Build and operate supercritical coal power plant.	450	4,000	2008
GEF	India	Coal-fired generation rehabilitation	Restore original coal generation capacity, extend plant life, and modify equipment to enable higher fuel efficiency.	45.5		2009
IBRD	India	Coal-fired generation rehabilitation	Same as above.	180		2009
IFC	Chile	CTA - Central Termoelectrica Andino	Construction and operation of circulated fluidized bed (CFB) technology thermal power units in northern Chile to be fired by a combination of coal, petroleum coke, and biomass fuels.	740*	330	2008/ invested Feb 2009
IBRD	India	Fifth Power System Development Project	Coal power infrastructure – transmission network for two newly commissioned thermal coal plants, the Sasan Ultra Mega Power Project ($900 mil from US EXIM Bank) and Tata Mundra UMPP ($450 mil	1,000		2010

			from IFC).			
IBRD guaran-tee	Botswana	Morupule B Generation and Transmissio n Project	Construction of a coal-fired power station and associated power transmission lines and water supply system. Develop a "low-carbon" strategy.	242.66	600	2010
IBRD	Botswana	Morupule B Generation and Transmissio n Project	Same as above.	136.4		2010
IBRD	South Africa	Eskom Power Investment Support Project	Construction of the Medupi coal-fired super critical thermal generation plant. The project also involves $750 million for renewable energy and energy efficiency. [Note: also received $500 mill. from African Develop-ment Bank]	3,050	4,800	2010
Total				$6,546	9,790 MW	

Annex 3: World Bank Group Financing for Oil and Gas Development FY2010

Insti-tution	Country	Project	Activity	Amount (mil. $)	Date Approved
IFC	Argentina	Pan American Energy G San Jorge	Oil and gas exploration and production – increase production of Cerro Dragon, Piedra Clavada and Koluel Kaike in the Golfo San Jorge Basin	250*	28-Aug-09
IFC	Egypt, Yemen	Kuwait Energy Co.	Oil and gas - accelerate exploration	50	6-Jul-09
IFC	Chile	Tranquilo and Otway UJVs (GeoPark)	Oil and gas exploration and production	20	6-Jan-10
World Bank-	Iraq	Integrated National Energy Strategy TA	Oil and gas: Development of an Integrated National Energy Strategy encompassing the oil, gas and power sub-sectors.	5	30-Dec-09
Bank - grant	Sao Tome and Principe	Public and Natural Resource Management Development Policy	Oil: To strengthen governance in the oil sector, sustained reforms in public petroleum sector, and a PRSP document revised to incorporate the petroleum economy and a growth strategy.	.4	7-Aug-09
World Bank	Turkey	Environmenta l Sustainability and Energy Sector (ESES) Second Development Policy Loan	Gas: Energy pricing, electricity markets, renewable energy, energy efficiency, electricity distribution and generation privatization, and gas supply security and wholesale gas market development. (20% of total funding)	140	15-Jun-10
IBRD	Egypt	EG-Giza North Power Project	Gas power generation and policy. Also, $200,000 (or .2) for energy efficiency.	600	8-Jun-10
IFC	Ghana	Jubilee FPSO	Oil and Gas production and storage for the offshore oil field Jubilee.	629*	29-Apr-10
IFC	Argentina	Diadema III - Companias Asociadas Petroleras S.A.	Oil production	60*	19-May-10
IFC	Brasil	Constellation	Oil production – offshore oil drilling operation	100	25-Mar-10
IFC	Cameroon	Dibamba	Oil – thermal power plant using heavy fuel oil	31	29-Jun-10

World Bank	Rwanda	Rwanda - Support from Extractive Industries TAF	Oil and gas technical assistance (no project documents disclosed)	.33	2010
MIGA	Ghana	FPSO Kwame Nkrumah MV 21	Oil production	225	15-Apr-10
IFC	Russia	Borets	Oil production	50	21-Dec-09
IFC	Colombia	Termo Rubiales	Oil production	16.5	21-Sep-09
Total				2,177	

Notes: All project information in these tables was obtained from project documents available on the World Bank and IFC websites. The funding amounts only represent the portion going towards coal, oil or gas development. *These projects involve both IFC A and B loans. **For FY2010, B loans = $749 million**.

Annex 4. World Bank Group Energy Sector Funding by Fuel Source and Region

Region	FY2006	FY2007	FY2008	FY2009	FY2010	Total
Africa	**198**	**1,080**	**449**	**1,349**	**4,286**	**7,362**
oil and gas	73	345	55	828	886	2,187
coal					3,400	3,400
fossil fuels total	**73**	**345**	**55**	**828**	**4,286**	**5,587**
lg hydro	**70**	**676**	**150**			**895**
new renewables	**20**	**20**	**219**	**103**		**363**
energy efficiency	**35**	**40**	**25**	**418**		**517**
MENA	**326**	**515**	**199**	**698**	**655**	**2,394**
oil and gas	326	394	85	630	655	2,090
coal						0
fossil fuels total	**326**	**394**	**85**	**630**	**655**	**2,090**
lg hydro		**40**				**40**
new renewables		**65**	**106**	**11**		**182**
energy efficiency		**16**	**8**	**57**		**81**
Asia	**365**	**902**	**2,814**	**1,845**	**1,000**	**6,926**
oil and gas	230	470	399	375		1,474
coal	5	130	1,041	226	1,000	2,401
fossil fuels total	**235**	**600**	**1,440**	**601**	**1,000**	**3,875**
lg hydro	**35**	**58**	**650**	**171**		**914**
new renewables	**94**	**221**	**51**	**661**		**1,026**
energy efficiency	**2**	**23**	**674**	**412**		**1,111**
Latin America Caribbean	**385**	**282**	**2,169**	**1,048**	**447**	**4,331**
oil and gas	355	152	1,033	18	447	2,004
coal			740	740		1,480
fossil fuels total	**355**	**152**	**1,773**	**758**	**447**	**3,484**
lg hydro	**2**		**208**	**2**		**212**
new renewables	**29**	**99**	**65**	**137**		**330**
energy efficiency		**31**	**123**	**151**		**305**
Europe & Central Asia	**531**	**185**	**1,374**	**1,438**	**190**	**3,718**
oil and gas	358	50	573	255	190	1,426
coal	119	11				129
fossil fuels total	**476**	**61**	**573**	**255**	**190**	**1,555**
lg hydro	**2**	**9**	**545**	**5**		**561**
new renewables	**12**	**19**	**4**	**515**		**550**
energy efficiency	**41**	**97**	**252**	**663**		**1,052**
Total	1,806	2,964	7,005	6,378	6,577	24,730

Annex 5. Government Position Statements on the WBG Energy Sector Strategy Review

Govern-ment	Summary of Position Statements on WBG Energy Sector Strategy
Germany	• Incorporate more explicitly **poverty reduction** as **guiding principle.** • More prominently address **access to modern forms of non-electric energy and energy efficiency in rural areas.** • When the WBG is engaged in the energy sector in countries with **rural electricity access rates below 15%**, make rural electrification a priority. • The WBG should **increase the share of renewable energy** (excluding energy efficiency) **commitments to 40%** (excluding trust funds) until 2015, the share should not fall below this minimum in the years to follow. At least half of the renewable energy commitments (20% of total commitments) shall be in the area of "new renewables" (including geothermal energy), i.e. excluding hydro power above 10MW. • Energy efficiency investments on both supply and demand side (including the transport sector) should play a major role in the WBG portfolio. The **share of commitments for energy efficiency should reach 40%** (excluding trust funds) until 2015; the share shall not fall below this minimum in the years to follow. • Promote **Large Hydropower** development only in accordance with the WBG safeguard standards and in the context of Integrated Water Resource Management (IWRM). For all Large Hydropower projects, the criteria developed by the **World Commission on Dams** (WCD) need to be considered. Large HP investment has to be linked with local benefit sharing mechanisms and other development benefits for local people and **the poor** even in the context of regional and energy export projects. • The WBG should address more prominently, the institutional, policy and regulatory environment that frames long-term renewable energy investments (such as the establishment of feed-in-tariffs). • To support the achievement of these targets, an international **advisory group** could be created to support the WBG's efforts with **expertise**, serve as a **link to NGOs** in the area and provide advice on the creation of **internal incentive schemes** to support the energy transition in the World Bank portfolio. • Establish a "**Climate Check**" to ensure consideration any project's global impacts on climate change (**mitigation**) and assess the risks of climate change for the sector (**adaptation**). • Use the **six factors outlined in the Strategic Framework for Development and Climate Change (DCCSF)** as **general guideline** for future coal investments, but further specify them. • Establish **clear criteria** to ensure that necessary coal fired power generation projects are **as clean as possible**.

Nether-lands	• Increase the share of the WB's **total energy lending portfolio accounted for by RE from the current 17% to 40% by 2013**, with additional targets of **50% by 2015** and **60% by 2020**. These shares are to be composed of specific donor funding, future climate mitigation funds and lending from WB own resources. • **Report yearly**, in a transparent way, on the leverage created **on finance for RE, EE and fossil fuel power generation** relative to the previous year. • Enhance the capacity of the Bank's staff by establishing a **special unit or directorate for RE** as also suggested in the Extractive Industry Review (2003). • **Include RE in developing countries' energy sector planning**. This can be achieved by helping target developing countries draft and execute National Renewable Resource Plans and plan their national energy portfolios between now and 2050. **National Energy Resource Planning and Energy Portfolio Planning should be incorporated in a separate chapter of the WB Country Assessments**. The making of a Plan of Action for promoting further RE investments in developing countries, in particular Sub-Saharan Africa, is part of this approach. • **Include real fossil fuel costs which also reflect price uncertainty in economic analysis**. This can be achieved by instructing WB Task Team leaders to **include hedging costs associated with fossil fuels** in the financial and economic analyses of their project appraisals, and to **compare these costs with RE options**. • **Include future supply risk of fossil fuels in economic analysis**. A possible way to achieve this, for example, is to instruct WB Task Leaders to report the risk factor of rising coal prices in the financial and economic analyses of their project appraisals. • **Conduct a feasibility study on setting up a guarantee fund for private and public investments in RE**. The object of a guarantee fund is to reduce investment risks. • **Conduct a feasibility study on the introduction of a feed-in tariffs system or a green bonus system** in national energy policies in order to stimulate private sector investments in energy. • **Conduct a study on internal constraints** within the WB that are impeding the growth of RE and make recommendations to the Board of Directors on how to overcome these constraints. • **Boost cooperation with other MDBs** with a view to encouraging them to move towards greener policies.
Sweden (SIDA)	• **There are significant links between the energy strategy and other strategies**, notably the **Development and Climate Change Strategic Framework**. Coherence with other strategies, action plans and results frameworks should be ensured. **Lessons drawn under other initiatives should be taken into account** in the process of developing the energy strategy. • It is understood that the **first objective** will be the focus in low-income countries and post-conflict states, while the **second objective** will primarily be pursued in middle-income countries where access and reliability is already achieved to a large extent, and that **special attention will be given to initiatives that address both objectives simultaneously**. • The importance of **supporting environmentally sustainable energy options as a general theme** would need to be highlighted throughout the strategy document. • **All policy initiatives** to encourage greenhouse gas reduction, promotion of efficient and affordable renewable energy sources and energy efficiency technologies to mitigate climate change and environmental degradation **should be further underlined**. It is recommended that the indicators in the results framework to be developed should spell out this direction clearly. • From the **Concept Note**, Sweden has noted the inclusion of the findings of a review of energy projects made by the Inspection Panel, indicating the need to **strengthen**

	community consultation and **more careful examinations of economic alternatives at the project conception stage**, and more focus on compliance with the Bank's main environmental and social policies. **Directly linking lessons learned with policy formulation** is a positive addition. **Better coordination with other donors** is an area that according to Sida needs further attention for coherence and to minimize additional work for development partners. • Sweden would further like to emphasize the need for greater focus on **improving energy consumption efficiency where it has most impact** on a national level, such as in large, high-energy consumption industries. • It is encouraging to note that the WBG will be more **selective in the support of energy development projects in extractive industries.** • To reach the poor, Sweden believes that there needs to be a **stronger focus on other types of modern energy than just electricity**, e.g. improved cooking fuels • **Sweden does not consider the Approach Paper (in comparison with the Concept Note) to further highlight renewable energy sources and adoption of low-carbon technologies in a fully convincing way**. Although Sweden finds it positive that the proportion of WBG operations in energy efficiency and renewable energy increased in FY2008, the paper also notes that the financial crisis has resulted in a slowdown of measures to reduce energy poverty, and with proportionally falling investments in renewable technologies in the beginning of 2009. By adopting the Development and Climate Change Strategic Framework (DCCSF) in 2008, the WBG has made a commitment to increase financing of renewable energy by an average of 30% per year, with the share of low-carbon projects projected to reach 50% in 2011. However, the **scenario beyond 2011 is not clear as regards the increasing share of renewable energy investments**. • As already pointed out in the comments to the Concept Note, **Sweden objects to the financing of new coal power projects and other fossil fuel investments other than in very exceptional cases where no other economically viable options are available *and* where the development benefits substantially outweighs environmental costs and long-term climate impact**. • In these cases, the best available technology should be utilized. We welcome that the strategy will elaborate on **how to apply the various considerations regarding coal cited in DCCSF** in practice. • **A strategy that strongly addresses environmental concerns and the climate change agenda should outline a decreased percentage of financing of fossil fuelled energy supply and a corresponding increase in clean energy technology investments over time, with clear indicators in the results framework indicating this vision**. • Although Sweden believes that the omission of high-efficient coal fired thermal plants from the low-carbon project category is an important step in the right direction, a **longer term perspective for increasing the low-carbon investments is necessary**. • The Strategy Approach document acknowledges "the **potential and social and environmental risks of bio-fuels**". The need to closely monitor **such negative effects should not be underestimated**. • Sweden welcomes the efforts being made to **phase out subsidizes from the fossil fuel sector** but believes there is a need for greater focus on the issue. • Sweden also recommended **greater coordination of efforts among stakeholders**. In our view, the Bank has a key role to play in supporting effective strategies for phasing out fossil fuel subsidies, whilst protecting the poor.
India	• The Ministry of Power (MOP) in India generally accepts the WB Energy Strategy paper in that the WB recognizes the needs of developing countries to **increase energy supply** and **scale up financing for incremental costs of clean technologies**.

	• **Specific country strategy** must address tradeoffs and synergies outlined in WB energy document and **must duly consider overriding developmental objectives**, **poverty reduction** and **energy access**, **availability** and **affordability** of alternate fuels. • India does **not object to the WB's twin intervention approaches of improving operational and financial performance of the energy sector and strengthening governance** to improve the contribution of energy to equitable energy development. • However, MOP **implores the WB to consider differences in priorities for countries with low per capita CO2 emissions and those with higher emissions**. • **In countries with low per capita emissions** (say 3 tons CO2 per cap) **enhancement of energy supply is almost the overriding goal** (with the **environmental goal being subsumed** into something like, every new plant is more efficient than the last or energy and CO2 intensity keeps declining.) There should be **no ex-ante requirement of a Low Carbon Growth Strategy for such countries**. • MOP considers **WB lending not as the sole initiative for creating and sustaining new energy markets for EE and RE**, but **a combination of lending and technical assistance that will spur demand**, encourage adequate supplies, and enhance capacity for all stakeholders in order to promote public-private partnerships that ultimately provide services. • **WB Lending support alone, especially if Bank interest rates are as high or more than domestic borrowing rates, will not be the best strategy**. In addition, innovative financing instruments like the Partial Risk Guarantee Funds, Venture Capital Fund for Energy Efficiency may be supported or created as the case may be. • In furtherance of the WB strategy, the **Bank must actively consider programs that could significantly enhance energy access, reduce energy poverty as well as promote EE**. • On the supply side, **low carbon strategies** like the National Enhanced Efficiency Renovation and Modernization Program, **involving Renovation and Modernization (R&M) and Life Extension (LE)** of existing old power stations, provide an opportunity at low cost in a short period of time **need to be supported**. • As per the WB energy approach, it appears **super critical and ultra super critical projects are not considered as low carbon projects**. India has taken upon **introduction of clean coal technologies** as a major step towards low carbon growth. **As these technologies are environment friendly, it is imperative that WB continues to fund such projects as low carbon projects**. MOP views this as **contradictory to the stated objectives** as well as the **Appendix-2** where strengthening energy security is one of the key priority areas. • MOP also suggests that **promotion of hydro power development** may be done **without any conditionalities** like capacity and type of the plant. • Such policy instruments, like **energy subsidies, are needed in a country like India whose energy affordability is many times higher and consumption many times lower than that of other countries**. Carefully designed energy efficiency programs could help deployment of energy efficiency even in a subsidized regime. • It is the considered view of MOP that **if certain technologies considered necessary in the overall promotion of low carbon growth, Bank lending must not be contingent upon any international financing**. • The **need for tradeoffs** for dealing with specific issues of developing countries like availability of affordable power through coal based generation, inadequate supply of alternate fuels (like gas), etc. **is welcome**. • The consideration of all the factors, including environmental externalities, could result high cost of delivered power, which may run contrary to objectives. The strategy could **recognize that for low-carbon emitting economies with low per capita energy consumption** (say, less than 3 tons per capita); **the only requirement should be that of the high efficiency of the new plant**.

	• Undoubtedly, the **most pragmatic electricity capacity addition strategy for India would be to build gas capacity** – which would enhance efficiency and lower CO2 emissions. • The Bank's strategy **approach paper should address availability of cleaner fuels at reasonable prices as a "Proposed area of action"**, in addition to those that are already there. • The **MOP supports countries in their efforts to shift to a low-GHG-intensity path** and promote technology for global and local environmental sustainability. • The Bank should work to **target energy price subsidies** and should dovetail with the country's overall strategy for rationalization of subsidies. This would ensure transition to market-based pricing of energy with adequate safeguards for protection of the poor.
Bangladesh	• **Priority for Bangladesh is to find new sources of gas or oil and** set up, if feasible, a **nuclear Energy** Plant to supply energy at affordable price to consumers to overcome the energy crisis. • WB may **extend low cost finance** to Bangladesh on easy terms **for exploring new gas and oil fields**, inland and in the Bay of Bengal and also for setting up, if feasible, a nuclear Energy Plant for generation of electricity. • WB may help **increase capacity for generation of electricity from natural gas by extending low cost finance on easy terms in more PPP power projects**. • WBG may assist Government of Bangladesh **establish accountability, transparency and good governance and reform of pricing, billing and payment collection in the energy sector to reduce technical and non-technical (system) losses** at international tolerance level. To ensure higher efficiency of production, **energy for equitable economic development** and help procuring appropriate technology, efficient equipments and appliances for Energy Saving could be a priority. • **Our next focus is solar and other renewable energy** at affordable cost to ensure access and reliability of energy for all. • **WBG may promote and support to Private sector investors** of Bangladesh with *climate investment funds (CIF) and Carbon Finances to* set up financially viable projects for generation of renewable energy (solar, wind, waves, biogas, biomass, hydro etc.) at cost affordable to consumers and help acquiring existing and new low cost technologies for renewable energy and experiences of model business projects on renewable energy from developed countries.
United States	• If the ESS update process is to be worth its considerable time and expense, the **final document needs to have a significant tangible impact on World Bank Group operations**. • With regards to the **implications of the Copenhagen Accord (CA)**, the **ESS should emphasize the role to be played by the WBG in helping developing countries achieve their clean energy development goals** as part of broader low emission development strategies. • Treasury supports fully operationalizing the six criteria related to financing of coal projects contained in the **2008 Development and Climate Change Strategic Framework (DCCSF):** • Assistance to **identify low-carbon priority should be provided far enough upstream** to have the potential to influence whether or not a developing country subsequently requests a coal project. • The **Bank should provide technical guidance to the borrower** on the potential for energy efficiency and conservation measures. • Bank support for clients' use of analytic **tools that facilitate a full-cost economic comparison of supply and demand side resources to meet energy needs**, recognizing that growing demand for power is unlikely to be met entirely through efficiency gains. • **Consideration of viable alternatives to the least cost (including environmental**

	externalities) options and when additional financing from donors for their incremental cost is not available is **most valuable when the analysis is undertaken sufficiently far upstream so that it can potentially influence investment decisions**. This is more likely if the Bank has engaged with the borrower before host country policy makers have approved a particular resource to be added to meet projected demand, let alone before awarding procurement contracts or beginning construction. • **Coal projects will be designed to use the best appropriate available technology** and would benefit from elaborating minimum thermal efficiency and carbon intensity thresholds. **Relevant provisions in the loan contract should address both design features and plant operation** to optimize use of those features. • By **incorporating environmental externalities into project analysis** the Bank estimates the carbon value whose addition to the cost of electricity from the proposed project would result in another (lower carbon) resource becoming the least cost option is a useful approach, the **criterion needs to be strengthened** in the following ways: • First, **some value should be assigned** to domestic health and property impacts of conventional emissions from the proposed project. And second, the **Bank could adopt a value at the lower end of this range to reflect new generation technology**. The adjusted least cost comparison between the proposed project at the plant gate and an alternative resource might be supplemented by a comparison between the average "all in" cost of power from the grid with the project and that from an alternative low carbon resource portfolio. • ESS should call for the Bank to **actively explore the use of low-head hydropower technologies** and other innovations in small-scale hydro generation. • **Prepare and disclose *ex ante* estimates of annual and lifetime project emissions (without pro-rating based on WBG share of total project investment or term of loan repayment)**. • For projects above a size threshold in energy-intensive sectors, **establish GHG accounting to include all energy-related emissions** – production, transmission, and end use above the threshold for public and private sector projects and, where applicable, FI operations. • **Define project boundaries** to include direct emissions from fuel combustion, process emissions, electricity use, and where appropriate, upstream supplier activity. • Include **estimates of both gross and net emissions**, with the baseline for net emissions to be dynamic in situations in which capacity, technical or regulatory developments can be confidently **forecasted in the no-investment counterfactual scenario**. • Recognizing differences in institutional mandates, **seek uniformity** in analytic tools, reporting standards, and peer review procedures across IFIs. • If the World Bank is to play a role in a future financial framework on climate change, it is important that the limited **external climate funding available be deployed judiciously** in situations where the Bank's internal financing instruments are inadequate by themselves to induce the GHG abatement action. • The Bank **should not develop a strategy that effectively constrains the scale of clean energy investments** to the availability of leveraged finance from other instruments. • The Energy Strategy should provide **clear guidance and criteria on matching financial instruments from the Bank's core instruments** and external funding sources with the financing needs of low carbon options. • Energy efficiency projects often have attractive returns when financed using the Bank's own resources, whereas some renewable energy projects are only attractive if they receive co-financing from the GEF or CIFs. The Bank can do much to **promote low carbon options without concessional financing**. • The Bank should also **avoid mobilizing incremental cost financing for clean energy options where domestic subsidies distort energy choices**.

	• The ESS should **include provisions for greater shifting to "wholesale" approaches to energy finance**, such as by support for innovative energy policies that facilitate a large number of individually small investments otherwise not likely to receive support. • The Bank could also **provide financing for feed-in tariff policies that accelerate deployment of renewable energy technology** while diminishing country dependence on fossil fuels. • **Ambitious targets to substantially increase lending for no and low carbon energy services as a share of overall energy sector lending**. • **Ambitious targets to expand access to electricity services in poor countries**. • Adoption of uniform and transparent approaches for estimating and **incorporating climate costs and risks into standard economic analyses** of relevant operations. • The **ESS document should be a business plan** with lending and other performance goals, **staffing and training needs**, internal incentives, technical guidance documents, and budget implications. • ESS should address means to **facilitate cross-sectoral interaction** (e.g. among energy, water, and environmental specialists), **create financial platforms** to highly leverage private investment (including portfolio equity), and induce **better coordination between the public and private lending** sides of the WBG that is critical to matching policy reform with infrastructure operations. • Where project performance is constrained by lack of host country capacity, the **WBG should leverage expertise from and coordinate with other multilateral and bilateral programs**.
United Kingdom	• The Department for International Development (DFID) aka UKAID and their Ministers would like to see any additional **multilateral spend is helping to mainstream climate change into the fabric of organizations such as the World Bank Group**. • The Energy Strategy would benefit from further analysis in a number of areas, including comparative costs, the **impact of energy resource depletion and the inclusion of externalities**. • There needs to be a **clearer exposition of the WBG comparative advantage** to determine focus areas. • **UK Ministers are still considering our position on clean energy lending and fossil fuel projects.** • The **MDBs clearly have a significant role to play** in **improving access** to modern energy services to enable **poverty reduction** as well as take advantage of new **economic opportunities linked to the transition to a global low carbon economy**. • This means **assisting** client countries in their pursuit of **low carbon, climate resilient** development strategies. • DFID believes that **combating vulnerability and improving resilience should be included as a third objective in the WBG's framework** for the energy sector. • **The Approach Paper misses a crucial third component – vulnerability and resilience**. Including such an objective would help to address impacts and risks such as price volatility, resource depletion and other environmental impacts, supply disruptions and price volatility, sensitivity of assets to the impacts of climate change, civil unrest or conflict. • A number of significant **evidence gaps need to be corrected**. • **Issues that are not adequately covered** in the Approach Paper are: the links between energy investment and achievement of the MDGs via result and impact measurement; **comparative costs of different energy technologies and accounting for long-term fossil fuel prices**; **resource depletion issues effects on price volatility** and impacts on transport, mobility and trade, food production, social cohesion, and financial systems; sensitivity of energy assets to future price of carbon; **comparative costs of widening**

	access to modern energy services (grid-based vs. decentralized); and, **water stress and environmental externalities**. • It is important to develop a **risk-based analysis** that includes a wide range of short, medium and long-term factors in energy-related decision-making. • DFID calls on the WB to outline how they will incorporate the aforementioned issues into their policy analysis and project appraisal processes, with a **timeline for action where appropriate**. • The **WB should adopt an explicit goal of supporting low carbon, climate resilient development as a central feature of its energy sector work**. • DFID supports the WBG's **engagement on sector-wide planning** at the country level. • Fundamental to overall country planning should be a focus on **win-win-win outcomes that combine poverty reduction and economic growth with long-term sustainability and improved resilience**. • The **WBG needs to analyze its own comparative advantage in the energy sector**, and develop proposals for how it intends to build on this focus and focus its lending activities. • **DFID would like to see further justification for the WBG's role in decentralized energy solutions and how it would engage in this sub-sector**. • **To support programs and investments in middle-income countries, the UK will be looking for strong justification** based on the catalytic and transformative impacts that **such lending would achieve**. • **DFID is consulting with Ministers on the UK's position to MDB clean energy lending.** • DFID would like to see more emphasis by the WBG on **'results-based financing'** and other innovative ways of ensuring **value-for-money** and a focus on results. • DFID **calls on the WBG to further explore and integrate results-based financing mechanisms as a way to leverage private sector investment**. The **MDBs have a crucial role in piloting and mainstreaming such approaches. Financing mechanisms need to match the scale of the energy and climate challenge**. • There is a **lack of clarity about how the DCCSF results framework, the IDA Results Measurement System (RMS) and the results framework for the forthcoming Energy Strategy** will interface. Developing these frameworks should be done in tandem or risk undermining harmonization across programs. • **The WBG should adopt an explicit aim of supporting the adoption and dissemination of sustainable energy technologies and the creation of local manufacturing capacity**. • Along with the low capacity for electricity generation, one of the **main problems of hydropower sector in Kyrgyz Republic is the fact that much of the equipment of the stations requires urgent replacement**. This reduces the reliability and efficiency of power plants, which in turn reduces the reliability of electricity supply to households and businesses, as well as directly affects the environment. • The WBG has not yet invested in the development, reconstruction and upgrading of hydropower facilities of the Kyrgyz Republic. Although the energy strategy notes the need to update the energy infrastructure, however, the **planned areas of activity say nothing about the projects focused on reconstruction and modernization of existing hydropower facilities**. Also **we support the emphasis on reliability of energy supply for end-users of energy, energy efficiency, etc**. We propose a number of development projects and reconstruction of existing distribution networks. • In this regard, we ask to **pay more attention to the reliability and efficiency of electric power generation by investing in projects aimed at reconstruction and modernization of existing hydropower facilities of the Kyrgyz Republic**. This support will also address the shortage of generating capacity, since this will result in increase of capacity of stations, and this will have a **positive impact on the environment**.

	• JSC "Electric Power Stations" is a major producer of electrical and thermal energy in the country can propose a number of projects for reconstruction and modernization of its hydroelectric plants, including those that take into account the interests of various water users, different goals of water management and water resources. • In addition, we would like to see that in preparation of the energy strategy, the **WBG takes into account the national energy programs and the concept papers of the host countries**.

Evangelischer Entwicklungsdienst e.V. (EED)
Ulrich-von-Hassell-Str. 76
D-53123 Bonn

Telefon: +49 (0)228 8101-0
E-Mail: eed@eed.de
www.eed.de

eed Evangelischer Entwicklungsdienst

Member of actalliance