

The Clean Technology Fund: Insights for Development and Climate Finance

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This working paper summarizes key innovations and challenges of the Clean Technology Fund. It analyzes the investment plans that the Fund has endorsed to date, and makes the case for greater emphasis on institutional capacity and governance in program design.

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INTRODUCTION

The \$6.3 billion Climate Investment Funds (CIFs) were established in January 2008 to operate until 2012, and are administered by the World Bank Group. They include a Clean Technology Fund (CTF) and a Strategic Climate Fund (SCF) that supports several lines of programming including a Pilot Program on Climate Resilience (PPCR), a Forest Investment Program (FIP), and a Scaling Up Renewable Energy Program (SREP). Regional Development Banks including the Inter-American Development Bank (IDB), Asian Development Bank (ADB), African Development Bank (AfDB) and the European Bank for Reconstruction and Development (EBRD) are partners in the CIFs.

The CIFs were prompted by a joint commitment from the governments of the United Kingdom, the United States and Japan to pool their efforts to “help developing countries bridge the gap between dirty and clean technology... and boost the World Bank’s ability to help developing countries tackle climate change.”¹ As of January 2010, thirteen donor governments have also pledged funds to the CIF. The bulk of these funds (\$4.76 billion) are dedicated to the CTF (see Table 1), to support the deployment of clean energy technologies and make transformative reductions in greenhouse gas (GHG) emission trajectories in developing countries.

The role of the World Bank in general and the CIFs in particular in administering financing for climate change has been controversial within the UN Framework Convention on Climate Change (UNFCCC) negotiations.² Nevertheless, the CIFs are likely to be a significant a channel

¹ Henry Paulson, Alistair Darling & Fukushima Nukaga, “Financial bridge from dirty to clean” *Financial Times*, 7 Feb. 2008 <http://search.ft.com/ftArticle?queryText=paulson+darling+climate+change&aje=true&id=080207000559&ct=0>;

² Athena Ballesteros, Smita Nakhooda and Jacob Werksman “Power, Responsibility and Accountability: Re-Thinking the Legitimacy of Institutions for Climate Finance” WRI Working Paper December 2009. <http://www.wri.org/iffc>

for at least some of the \$30 billion in “fast start” financing between 2010 and 2012 promised in the most recent effort to conclude a global deal on climate -- the Copenhagen Accord. In the longer-term, the relationship between the CIFs and the Green Climate Fund envisaged in the Copenhagen Accord remains uncertain.

transparent governance will enhance the long term impact of CTF programs and the effectiveness of the projects it supports. Its findings are also relevant to the design of new institutions that may arise from the ongoing efforts to close a global deal on climate finance, technology transfer and low carbon development.

Financing Terms

Contributions to the CIFs represent more public financing for climate change than developed countries have ever mobilized before. Countries can contribute grants, concessional loans, and capital to the CTF; while most countries have made grants available, Germany and France have made loans; the UK and Spain have committed capital.

Indeed, the CTF represents an important new line of business for the MDBs. Its funds are primarily disbursed in the form of concessional loans. Harder loans with a smaller grant component, and a shorter payback period are extended to programs that earn market threshold returns, but may face opportunity costs of risk premiums. Softer loans are available for programs that may have negative rates of return. The MDBs charge an administrative fee in either case (see Table 2). The level of concessionality can be adjusted to meet country needs. Grants of up to \$1 million are available to support the development of investment plans and projects, including research, convening, and the costs of consultants as needed. Grant funding will also be used for knowledge and learning activities. The MDBs can charge a management fee of 5% on project preparation (though the grant cannot cover the costs of their staff time or travel).³ In addition, CTF resources can be used to guarantee investments that will incur technical and economic performance risks, or commercial and financial risks, but not political risks which should be addressed through institutional and policy reform.

The MDBs administrative and overhead charges have been a cause of concern for some governments. Some developing country governments have made the case for these to be covered on the basis of actual costs incurred. Furthermore, the CIF also covers the costs of administration and management, including the costs of developing country civil society participation in trust fund committee meetings, outreach and communications, as well as the Partnership Forum which brings together contributors and recipients on an annual basis. Concerns have been raised

³ The Climate Investment Funds, “Clean Technology Fund Financing Products, Terms, and Review Procedures For Public Sector Operations”, 28 May 2009. http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF_Financing_Products_and_Terms_FINAL.pdf

Country	Pledge (US\$ million)
Australia	89
France	283
Germany	698
Japan	1000
Spain	112
Sweden	82
UK	621
US	1875
Total	4,761

Source: Climate Investment Funds
http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CIF%20Pledging%20table%20as%20of%201-31-10_revised.pdf

This working paper reviews experiences to date of the CTF, the largest of the CIFs, in order to inform evolving thinking on the role multilateral financial institutions can and should play in development finance in a warming world. It presents an overview of the terms on which CTF financing is made available, and the governance structure through which it makes financing decisions. It then considers the experience of the CTF to date, including the Clean Technology Investment plans that it has developed with recipient countries, and the application of its investment criteria at the program level. It concludes that while much attention has understandably focused on what the CTF finances, less attention has been paid to how investments are identified, and address issues of governance and institutional capacity within recipient countries through the programs it supports. It concludes that addressing policy and regulatory barriers to clean technology deployment through open, inclusive and

about efficiency and value for money in spending these resources.⁴

	Harder Concessional	Softer Concessional
Maturity	20	40
Grace Period	10	10
Principal Repayments Year 11 – 20	10%	2%
Principal Repayment Year 20 – 40	N/A	4%
MDB Fee FY 09 – 10	0.10%	0.10%
Service Charge FY 09 – 10	0.75%	0.25%
Grant Element	45%	75%

Source: The Climate Investment Funds, “Clean Technology Fund Financing Products, Terms, and Review Procedures For Public Sector Operations”, 28 May 2009.

The CTF determines a project’s eligibility and the level of financing on the basis of whether it will have a “transformative” effect by supporting programs that would not have been viable without concessional finance. One component of this approach assesses the potential impact of CTF financing on the risks and costs of deploying clean technologies. CTF programs are intended to “stimulate lasting changes in the structure or function of a sub-sector, sector or market” and “demonstrate how CTF co-financing could be used, possibly in combination with revenues from emissions reductions, to make low GHG emissions investments financially attractive by improving the internal rates of return on such investments.”⁵

⁴ For example, members of the CIF joint governing committee requested that the administrative unit reduce the budget for the Partnership Forum (which was originally \$1.4 million); the final budget is \$1.13 million. See Climate Investment Funds Partnership Forum http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/ctf_scf_tfc_partnership_forum_2010_final_100909.pdf

⁵ The World Bank. February 2009. “Clean Technology Fund Investment Criteria for Public Sector Operations.” Online at: http://siteresources.worldbank.org/INTCC/Resources/CTF_Investment_Criteria_Public_sECTOR_revisedFeb9.pdf.

To date, \$3.25 billion of the \$4.76 billion in the CTF have been committed to support investments in clean technology in Egypt, Mexico, Turkey, Morocco, South Africa, Vietnam, the Philippines, Thailand, and a regional concentrating solar thermal program in North Africa. An investment plan for the Ukraine was proposed in October 2009, and was not approved; a revised plan was resubmitted to the committee at the end of February. Investment plans for Indonesia, Colombia and Kazakhstan will be considered were considered at the March 2010 meeting of the CTF committee.

Implications for the UNFCCC Negotiations

Several governments have expressed concerns that the establishment of the CIFs and the programs it supports may prejudice the outcomes of negotiations on how to finance climate change within the UNFCCC. As a result, the CIFs are now framed as an “interim measure to scale up assistance [for climate change] to developing countries and strengthen the knowledge base in the development community.” Members of the G77 and China for their part have expressly stated that they do not consider funds contributed to the CIFs to meet Annex I obligations to support developing countries to address climate change under the UNFCCC. Developing country members of the CTF committee have also, however, asked the World Bank to develop draft guidance on how to monitor and report contributions to the CTF as new and additional to development assistance.

The design of the CTF also includes a “sunset clause” stating that “the CTF will take necessary steps to conclude its operations once a new [UNFCCC] financial architecture is effective.”⁶ Any funds remaining in the CTF once this new architecture has been established may be transferred to “another fund that has a similar objective”. If the UNFCCC negotiations result in a renewed mandate for the CTF, operations may continue with appropriate adjustments in priorities or programs.

Governance Innovations

The governance of the various CIFs is noteworthy, because there are an equal number of representatives of donor governments and developing country governments on the governing committees for each trust fund. Decisions are taken by consensus. All 8 of the governments contributing

⁶ Governance Framework for the Clean Technology Fund, p 12. http://siteresources.worldbank.org/INTCC/Resources/CTF_Governance_Framework_jan.pdf

funds to the CTF are represented on its governing trust fund committee⁷; developing countries selected the governments of India, China, Brazil, South Africa, Mexico, Turkey, Egypt and Morocco to represent them on the committee. Representatives of the World Bank, and each of the regional development banks (ADB, AfDB, EBRD, and IDB) are also represented on the committee, though they do not vote on decisions. Potential recipient countries are similarly barred from taking part in decisions when their requests for funding are being considered.

A number of stakeholders are observers to the deliberations of the CTF committee, including the secretariat of the UN Framework Convention on Climate Change (UNFCCC) and the Global Environment Facility (GEF). Two representatives of the private sector or business associations (one from a recipient country and one from a contributor country) and four representatives of civil society are also included as observers. These observers have been appointed through a processes of “self selection” coordinated by the World Business Council for Sustainable Development for the private sector, and by the Washington, DC based NGO Resolve for civil society in 2009.⁸ All observer roles are “active”, which allows them to request the floor to make interventions, propose agenda items, and recommend experts. The World Bank and its partners periodically host a “Partnership Forum” to share lessons learned from the CIF with a range of stakeholders, and to seek expert input Programs. The first forum was held in October 2008, and the second will be hosted by the Asian Development Bank in

⁷ At present, there are only 8 countries contributing to the CTF; if more join, then contributor countries will also need to go through a process of self-selection to decide on representation on the Trust Fund Committee

⁸ RESOLVE for its part is a relative newcomer to issues of climate finance; it did, however, appoint an advisory panel of experts within the NGO community engaged on climate change to help it design the selection process. Given the strong rejection of some factions of G77 governments of the CIFs, it is possible that some civil society groups felt that engagement with the CIFs would compromise perceptions of their credibility and legitimacy within domestic policy processes.

Manila in March 2010. A paper on “lessons learned” from the CIFs was commissioned to frame the upcoming Partnership Forum.

Constraints on Transparency and Participation

Not all sessions of the CTF committee meetings are open to observers, however. Deliberations over investment plans are at present closed “executive sessions”. As administrator of the fund, the World Bank has sought to ensure that CTF disclosure practice is consistent with its disclosure policy, and hesitated to exceed those standards. In May 2009, the Trust Fund Committee agreed to publicly disclose Clean Technology Plans prior to their meetings. Previously these plans were not disclosed until after they had been approved in principle by the committee. In October 2009, the decision was made to allow observers to attend country and MDB presentations of the investment plans, and provide brief comments. The actual discussion of the plan continues to exclude observers. In November 2009, the civil society and private sector observers made a formal request to the chairs of the CTF trust fund committee to include observers in all sessions of the meetings. A formal response to that request had not been made as of the March CTF meeting.

In turn, some participants in the fund have raised concerns about the value that observers add to the decision-making space. The author acknowledges that as an acting observer to the CTF, her views on this count may not be objective. The participation of observers does vary. To date, the private sector has not been active given the limits on their participation (which comes at their own cost); selected observers have experience and networks that could support CTF objectives, particularly regarding mobilizing private sector participation. Greater effort may be required to draw in CSOs with technical expertise and relevant networks in the specific issues on each governing committee agenda. For developing country based civil society groups that engage actively within their domestic context on climate change and technology issues, the CTF meetings can seem very far away from their day to day priorities. Those groups and individuals that have significant expertise and experience to contribute to the decision-making of the CTF are unlikely to prioritize participation in the limited space that exists, given that the most important parts of the CTF decision-making process are closed to observers.

Technologies Supported by the CTF

Under existing guidelines, the CTF can support limited fossil fuel electricity technologies, permitted they meet the criteria for assessing the transformative impact of investments, and a set of emission standards (see Box 1). This has raised important questions about the terms on which scarce public resources should be spent. For example, funds can be used to

support ultra-supercritical coal fired power plants. These plants may be more efficient, and therefore have cheaper life time operating costs than conventional pulverized coal. A new supercritical coal plant will still emit millions of tons of carbon in each year of its 30 year life. In addition, CTF funding can support countries to substitute new coal plants with highly efficient natural gas plants, if the new facility will emit no more than half the carbon as a coal powered business as usual alternative.

Box 1: Criteria for CTF Investments

Assessment of Transformative Impact of Investments

- (a) Potential for GHG Emissions Savings
- (b) Cost-effectiveness
- (c) Demonstration Potential at Scale
- (d) Development Impact
- (e) Implementation Potential
- (f) Additional Costs and Risk Premium

Standards for Coal and Gas Investments

- Ultra supercritical coal plant emissions must be lower than 0.795 t CO₂/MWh (net)
- New gas-fired power plant (or additional gas unit) emissions must be lower than 0.398 t CO₂/MWh (net), which is 50% of the threshold for sub-critical coal-fired power plants
- New coal plants must also be “ready” for carbon capture and storage (CCS) in that it must be sited in a location with a storage reservoir for storage, and space for CCS equipment. In addition, an economic analysis of the feasibility of CCS should be completed.

Source: World Bank, *Clean Technology Fund: Investment Criteria for Public Sector Operations*, Jan. 2009.

The CTF criteria and design parameters were agreed upon before the formalization of its present governance structure, which includes observers in some aspects of decision-making. Civil society and other independent observers have not had significant input into the definition of its criteria. Many have argued that developing countries need alternatives to coal that can provide massive amounts of cheap, reliable power (like coal presently does) but without the emissions. The CTF should therefore be used to drive down the costs of zero carbon technologies, such as wind and concentrating solar power. Not all

country representatives on the CTF committee have seen the issue in this way.

Much less attention has been paid to the terms on which CTF investments will address underlying questions of policy, regulation and governance that will affect investment priorities over the longer term.

Clean Technology Investment Plans

When developing countries express interest in accessing the CTF, the World Bank partners with the regional development bank concerned to conduct a joint mission that includes other pertinent development partners to discuss with government, private sector and other stakeholders “how the CTF may help finance scaled up low carbon activities”. A clean technology investment plan is then developed under the leadership of the recipient country, which identifies the major sources of GHG emissions in the country, major opportunities for mitigation, and justifies proposed priorities for which CTF support is sought. The scope and content of these plans vary to fit national circumstances.

To date, no investments in fossil fuels for electricity have been endorsed. Plans have focused on scaling up on-grid renewable energy, particularly wind and concentrating solar thermal power technologies, and on reducing transport emissions by introducing Bus Rapid Transit (BRT) systems. Annex I of this paper reviews the Clean Technology plans that have been approved by the CTF Committee to date. The review focuses on how policy, regulatory and governance issues for CTF interventions in the electricity sector are addressed in Clean Technology Plans (see Box 2).

Plans have taken a variety of approaches: most have sought to support financial institutions within the country to provide concessional financing to support renewable energy and energy efficiency projects. The Thai investment plan focuses on opportunities to reduce the carbon impact of the city of Bangkok. The North African Solar Thermal Power program takes a regional approach, seeking to achieve economies of scale by taking programs in several different countries forward concurrently. Many plans have recognized the importance of working with national utilities to support their ability to implement sustainable energy programs.

The processes by which these plans are developed and implemented warrants attention. There was limited evidence of engagement with stakeholders outside of government in the design of the first CTF plans approved by the committee. Such engagement will be important to ensure that programs are tailored to national needs, including those of the private sector, consumers and citizens, and to enhance the prospects of successful

program implementation.

Box 2: Framework for Reviewing Impact on CTF Interventions in the Electricity Sector

Policies and Regulations

- Long-term integrated energy planning
- Policies and regulations encouraging energy efficiency
- Policies and regulations promoting renewable energy
- 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
- Utilities' capacity to promote energy efficiency and renewables
- Transparency of policy, planning, and regulatory processes
- Stakeholders (particularly the public and consumers) engagement in policy, planning, and regulatory processes
- Support for local technology development capacity
- GHG management capacity

Builds on a framework for investments in sustainable electricity proposed by WRI and the International Institute for Sustainable Development. See Smita Nakhoda and Athena Ballesteros, *Sustainable Energy Futures*, WRI: December 2009.

Over time, some more attention to these issues has been paid. The Middle East and North Africa regional concentrating solar thermal power investment plan, for example, notes the stakeholders including NGOs that were consulted in developing the plan. The World Bank-ADB joint mission to Indonesia engaged with civil society and private sector observers to the CTF to set up meetings with local civil society, researchers, and private sector representatives within Indonesia. The draft investment plan for Kazakhstan includes an annex detailing a meeting hosted to solicit civil society input in developing the plan. Such processes remain ad-hoc, however, and the depth of engagement is often limited, particularly given the pressures to develop plans quickly and move fast to begin project

implementation varies. It is not yet clear that there has been serious engagement of stakeholders outside of government from the private, civil society, or research communities to frame program objectives or identify new solutions to overcome obstacles to low carbon development.⁹

Work remains to be done to identify efficient, meaningful and constructive ways to engage non-governmental stakeholders within recipient countries in the development of investment plans, as well as the design and implementation of the projects that ensue.

Application of the CTF Criteria in Practice

The interpretation of the CTF investment criteria were put to the test by the government of Ukraine's investment plan which sought CTF funds in support of an upgrade to its gas transit system, and to build a new 450 MW Combined Cycle Gas Turbine with combined heat and power facilities (CCGT/CHP). While the demonstration value of the CCGT/CHP project would be important, it was not clear that \$50 million in concessional finance from the CTF was necessary to make it viable. Similarly, the efficiency gains from upgrading the compressors in the gas network represented a highly cost effective investment that would deliver emission reductions and benefits to the system as a whole, including end users in European countries. It was not clear that concessional finance from the CTF was essential to realize these reductions in global greenhouse gas emissions. Importantly, the plan did not meet the specific investment criteria for natural gas.¹⁰

Transparency about the plan has allowed civil society to draw the attention of trust fund committee members to these issues, even though the investment plan discussions themselves were held in executive session. The committee deliberations concluded that the plan did not meet the investment criteria, and requested the government of Ukraine to revisit the plan, and provide additional information on the regulatory and policy frameworks for the proposed investments. In March 2010, a revised Ukraine investment plan was submitted without these two components, instead seeking financing for renewable energy and energy efficiency programs exclusively. The question of how to interpret the CTF investment criteria in these difficult cases will come up repeatedly: for example, the Kazakhstan investment plan seeks CTF financing to build gas power plants fueled by waste gas from the country's oil pipelines, as well

⁹ Jamie Radner, "Looking Ahead for Lessons in the Climate Investment Funds: Emerging Themes for Learning" January 2009. <http://worldbank.org/cif>

¹⁰ The criteria require that the plant emit **at least** 50% less emissions than a coal fired power plant in the same context, and less than 0.398 tCO₂/MWh (net); whereas the proposed facility would have an efficiency of "around 0.4 tons"

as to switch from coal to gas use for electricity generation. Transparency can help ensure accountability for rigorous and ambitious application of the criteria over the long term.

Links between CTF programs and the Core Operations of the MDBs

The constituent projects within the investment plans are developed by the relevant MDBs; the CTF provides co-financing. In this way, the CTF can help meet some of the incremental costs of incorporating low carbon approaches into MDB programs in developing countries. The concessional finance made available through the CIFs does have the effect of lowering the overall cost of capital when countries engage with the MDBs. As a result, the CIFs are opening up new opportunities for the MDBs to engage with middle-income countries: for example, Thailand is borrowing funds to invest in energy infrastructure from the World Bank for the first time through engagement with the CTF. On the other hand, there is evidence to suggest that borrower countries are looking to channel the concessional finance available through the CTF to complete investments that they have been planning for some time. This pressure is particularly strong in the context of the ongoing global economic recession, where it is difficult for many countries to raise funds from the private sector. There can be tensions between a “country driven” approach to identifying investments, and living up to the intent of the fund which is to make new and “transformative” investments that result in a step change from “business as usual”.

The process of developing a clean technology investment plan could provide a framework for identifying the suite of options available to a country to meet long term energy needs. In theory, this framework could help guide the MDB’s mainstream engagement with its member countries in these sectors. In practice, the priorities of clean technology plans are often influenced by the MDB’s existing strategies for engagement in the country in question. This is understandable given the recent establishment

of the CIFs, and perhaps even desirable in cases such as Mexico where climate change has already been established as a priority for country engagement, and country strategies have been well consulted with stakeholders in country. It may be less desirable, however, in cases where climate change issues have not previously been priorities for the MDBs engagement with the country.

Furthermore, there may be cases where the MDBs core loans can seem inconsistent with CTF priorities in the same country. These tensions have been recently highlighted as the World Bank contemplates making a loan of \$3.75 billion to South Africa’s state owned electricity utility Eskom. The World Bank Eskom support program will finance the construction of the 4800MW Medupi supercritical coal plant, a railway line to enhance the efficiency of its fuel supply chain, as well as a 100 MW wind farm and a 100 MW concentrating solar thermal facility. The renewable energy components of the Eskom support program are central components of South Africa’s Clean Technology Investment Plan. While attention has focused on the World Bank’s role, the African Development Bank also finds itself in the same situation as a co-financer of both the coal and renewable energy components of the same program, though at a smaller scale. The Government of South Africa for its part recently withdrew its application to the CTF for co-financing for the Eskom support program, presumably waiting for the World Bank’s board to decide on whether it will fund the core components of the program before it actually commits to taking CTF resources.

These have led some to question whether the CTF investments will in fact have a transformative impact in South Africa. The importance of the projects that the CTF will support should not be underestimated: these will be the first large scale, on-grid investments in renewable energy that Eskom has ever made. The availability of concessional finance has helped address some of the risks that Eskom perceives inherent to renewable energy. If they are managed well, these investments may help build confidence in the viability of renewable energy as an option for meeting long term energy needs in South Africa while also meeting climate change mitigation objectives, such as those envisaged in the country’s Long Term Mitigation Scenarios.¹¹ However, South Africa’s Clean Technology Investment Plan did not place much emphasis on how its proposed investments in renewable energy will affect (or be affected by) the processes for long term electricity planning in South Africa. There are trade-offs between some of the options that have been proposed for meeting South Africa’s electricity needs and reducing its greenhouse gas emissions in the long term that must be

¹¹ Smita Nakhoda “The World Bank Eskom Support Program” <http://www.wri.org/stories/2010/03/world-bank-eskom-support-program>

reconciled. To date, domestic policy, planning and regulatory processes have not addressed these tradeoffs.¹²

Without transparent and inclusive processes to address the institutional, policy, and regulatory context that frames investments, there is a real risk that the CTF will end up supporting “one off” projects. CTF investment plans are more likely to have a transformative impact if they seek to address some of the governance challenges that confront the energy sector.

Results Management

Each of the sub-funds of the CIFs have a specific results management framework, and efforts have been made to agree upon the general elements of this framework before program implementation begins. Committee members have expressed interest in having reporting in real time. The CTF committee has not yet agreed upon the final scope of the framework, which will now be developed as part of an integrated results management framework for all of the CIFs. Drafts have proposed to assess the impact of projects financed in terms of:

- the deployment of low GHG emissions technologies on a significant scale;
- the impact on carbon intensity;
- the GHG reductions against an estimated baseline that ensue from the programs funded;
- the percentage of investment leveraged from other public and private sources.

The GHG benefit per dollar of CTF money invested has also been proposed as a measure of success. In addition, monitoring of the overarching impacts at the country level such as the average carbon intensity of the sector or country, the share of low GHG emissions technologies in production, or the average

efficiency of coal and gas fired plants has been proposed. These indicators have been quite controversial, in part because they measure outcomes well-beyond the proposed life of the CTF (which may close its operations by 2012), and because it is difficult to directly attribute CTF programs to such macro-level outcomes. Portfolio performance will also be assessed: for example, the development outcomes of projects, the aggregate emission reductions, the quality of project supervision, or delays in implementation. Developing countries have asked the administrative unit to also monitor the extent to which contributions to the fund are new and additional to overseas development assistance.

To date, issues of governance and institutional capacity have not been emphasized in these frameworks. This may explain, in part, why these issues receive uneven attention and emphasis in the investment plans.

Conclusion

If the CTF develops a track record of supporting countries to develop clean technology investment plans that meet the highest possible environmental and social standards, it may create incentives for developing countries to pursue low-carbon development options that align well with national needs.

If the MDBs are to be entrusted with scarce public resources to address climate change, however, then the success of the CIFs should be judged, at least in part, by whether they prompt systematic attention to climate change in mainstream MDB portfolios and investments.

Recommendations:

- Zero carbon power technologies, energy efficiency, and investments in institutional capacity, policy and regulatory frameworks should be CTF priorities.
- The CTF criteria for transformative investments should be interpreted ambitiously, and be central to project development and approval processes.
- Improvements in sectoral governance, institutional capacity, and policy and regulatory environments should be addressed in the results framework
- Metrics that can help track whether funds contributed to the CTF (and CIFs in general) are new and additional should be developed
- The CIFs should prompt systematic attention to climate change in all aspects of mainstream MDB portfolios
- MDBs should reach out to non-governmental stakeholders including civil society in developing investment plans, particularly to identify and implement improvements in policy, regulation and governance that

¹² Idasa, *The Electricity Governance Initiative in South Africa: Shedding a Light on the Power Sector*, Idasa: February 2010. Online: <http://electricitygovernance.wri.org> and <http://www.idasa.org.za/>

may enhance the impact of proposed investments

- Civil society groups should be proactive in informing the design of CTF investments, and monitoring their implementation within countries to ensure that issues of governance, long term sustainability and development impact for the poor receive due consideration

Author

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Annex I: A REVIEW OF THE CTF INVESTMENT PLANS

March 2010 CTF INVESTMENT PLANS			
	Colombia	Indonesia	Kazakhstan
Baseline and Objectives	Framed by Colombia's National Climate Change Planning Policy and mitigation analyses completed by the Energy Mining and Planning Unit. While Colombia's energy mix is relatively low carbon due to the role of hydropower, additional demand is met by fossil fuels – an increase in coal use of 150% is predicted. Transport represents 12% of emissions source of emissions growth. Plan seeks to reduce national electricity consumption by 5,000 GWh, and displace 1.6 MtonCO ₂ e per year. It will expand the reach of the Bogota integrated transport system, and expand strategic transport programs to 7 cities in Colombia, with an expected reduction of 2.8 MtCO ₂ e per year.	Energy, industry, and land use change cause Indonesia's significant global GHG contribution. Energy use is the second largest source of emissions, and growing fastest. Plan framed by Presidential decree on National Energy Management which sets RE targets, and Indonesia's pledges to reduce emissions by 26% by 2020. Proposes to double installed geothermal capacity which will reduce emissions by 5.1 million tons per year, and scale up EE and RE to deliver. Future phases may explore low carbon transport and other RE options.	Kazakhstan is the largest emitter in Central Asia with an energy intensive economy and a net oil exporter and an energy sector dominated by low priced fossil fuels. Plan framed by its 2007 GHG inventory and 2 nd national communication to the UNFCCC which shows that energy activities account for 80% of emissions. Plan identifies opportunities to save emissions in sectors including oil and gas production, transport, steel, cement, residential but finds that 71.2% of mitigation potential is in the energy sector (electricity + heat). Plan does not specify the scale of expected emission reductions from the proposed interventions.
Priorities of Clean Technology Investment Plans	<p>Sustainable transport: support policy and regulatory measures to: accelerate sustainable transport programs in 7 Colombian cities; support travel demand management; optimize links between public, bicycle, rail transport options and public space in Bogota; factor low carbon technologies (e.g. buses into all programs); consolidation of a scrapping policy to eliminate old buses;</p> <p>Energy Efficiency: address knowledge, financial and regulatory barriers to efficiency by working with 2-3 biggest banks to develop EE financing; educating end users and scaling up demand for equipment upgrades in industrial, residential and commercial sectors.</p>	<p>Geothermal Power: large-scale Investments led by the public sector: upto 260 MW by Pertamina; up to 250 MW by PT PLN; 300 MW with private participation through risk mitigation with the prospects also for some private sector investments</p> <p>Energy Efficiency and Renewables Financing: risk sharing and mezzanine financing with state and private banks to increase financing for SMEs; direct lending to large end users for EE/RE; technical advisory services to local banks to support investments in EE/RE. Promotion of RE will focus in particular on biomass energy options.</p>	<p>Renewable Energy Development (i) 200 MW new / restored small hydro (upto 25 MW units); (ii) 100 MW wind +solar power; (iii) strengthening distribution through the Kazakhstan Sustainable Energy Financing Facility</p> <p>Associated Gas Utilization/Fuel Switch/Flaring Reduction: electricity generation from associated gas from oil pipelines to avoid flaring. Consistency with CTF criteria for natural gas switching projects is not discussed, and the objectives / impact of proposed program is not clear.</p> <p>District Heating System Modernization through equipment /management upgrades and consumer engagement in partnership with municipalities.</p> <p>Energy Efficiency: support local financial institutions by providing funding; sharing risk; building capacity to assess EE finance risk</p>
Financing	<p>CTF: \$150 million = \$100m Urban Transport, \$50m EE</p> <p>MDBs: \$725.8 million =</p> <p>IDB: \$535.8m = \$400m Transport, \$135.8m EE</p> <p>WB-IBRD: \$100m Transport</p> <p>IFC: \$90m EE</p> <p>Domestic: \$1,820million =</p> <p>GoC: \$380m = \$340m Transport, \$40m EE</p> <p>Bogotá DC: \$150m Transport</p> <p>Municipalities: \$240m Transport</p>	<p>CTF: \$400 million= 125m geothermal (ADB) \$125m geothermal (IBRD); \$50m IFC/ADB geothermal advisory; \$50m IFC EE/RE; \$50m ADB EE/ RE.</p> <p>MDBs: 1,075million</p> <p>ADB: \$500m geothermal; \$250m EE/RE</p> <p>IFC:250m EE/RE</p> <p>IFC/ADB joint advisory: \$75m</p> <p><i>Given the proliferation of donor activities focused in the areas</i></p>	<p>CTF: \$200 million = \$73m RE, \$56m APG/Fuel Switch, \$50m District Heating, \$21m EE</p> <p>MDBs: \$534 million = \$166m RE, \$197m APG/Fuel Switch, \$121m District Heating, \$50m EE</p> <p>Others: \$535 million = \$102m RE, \$70m APG/Fuel Switch, \$334m District Heating, \$30m EE</p>

	Private Sector: \$1,060m = \$960m Urban Transport, \$290m EE	<i>identified, special efforts may need to be made to avoid duplication.</i>	
Electricity Sector Interventions			
Energy Planning	Notes that studies on mitigation abatement potential have been completed with an emphasis on efficiency. Focuses on the central challenge that distribution utilities have a disincentive to foster efficiency.	Includes a comprehensive overview of relevant laws and initiatives in the country, including the national action plan on climate change, but does not address the processes and frameworks by which PLN plans for and meets energy demand. Links / complementarity between proposed investments in RE and EE could be elaborated.	Program for energy development 2030 includes energy self-sufficiency targets, next exporter status, inclusion of renewables. Sustainability 2024 strategy aims to halve energy intensity by 2020. Little discussion of the framework / processes for energy planning or how energy efficiency and renewables would fit that framework.
Energy Efficiency (EE) Policy Regs.	2001 Law sets a framework for efficiency policies and regulations. UPME efficiency standard labeling and technical standards lay groundwork. A national energy efficiency commission has been established. Recognizes that past national programs have not coordinated to manage technical, informational and financial aspects. Proposes to use CTF resources to overcome these barriers, strengthen institutional frameworks, foster best practice in efficiency regulation, and examine options for aligning regulatory incentives with efficiency.	References the national energy policy, the energy law, the master plan on energy conservation. Acknowledges limited progress in implementing these frameworks. Processes for collaborating across ministries (esp the Ministries of Finance, Energy, and Industry) to provide comprehensive support for EE may support achievement of program objectives.	Energy efficiency law is under development; the need for such a law, supporting legislation, and an action plan for efficiency is noted although these are not yet included in proposed activities. District heating project may inform practice (and in turn regulations) in other states over time; the need to address split incentives for municipalities and utilities recognized.
Renewable Energy Policy + Regulations	N/A	Provides a comprehensive review of the many pieces of supporting legislation for geothermal and RE including the 2006 Energy Law, the Climate Change Road Map, the 2009 Electricity Law, and associated regulations on distributed and medium renewable energy products. Discusses the development of new mechanisms to drive investments including feed in tariffs.	Renewable energy law enacted in 2009. MDBs are supporting the development of implementing legislation including Feed in tariffs and grid access consistent with international best practice. Plan specifies maximum range for feed in tariff of 20KZT/kWh.
Pricing	Suggests that the electricity pricing and regulatory regime in Colombia is generally conducive to efficiency – notes that many actors have pursued opportunities, but to a limited degree. References the need for pricing and regulatory reform to support renewable energy programs, which could be a future CTF program.	Recognizes that pricing systems within Indonesia do not allow for full cost recovery. Notes that govt efforts to “rationalize” energy tariffs are underway, and that this is a high risk to the effectiveness of the program as a whole. Notes that the final-in tariff for geothermal energy is still being decided, and whether it attracts private investment remains to be seen.	Notes that energy prices are comparatively low, and this has impeded past projects. The recently announced increase of the heating tariff in Almaty and indicates that Kazakhstan’s regulatory agency is willing to allow the heat supplier to cover the production costs through the tariffs. No discussion of process/ steps taken to move towards competitive market structure.
Subsidies	Discussion of cross subsidies between industrial and low income consumers within Colombia wrt residential energy efficiency program components. No discussion of subsidies for fossil fuel energy within the Colombian economy.	Recognizes that energy markets are distorted by subsidies, and notes efforts that govt has already taken to begin to correct this situation e.g. the elimination of subsidies for oil for power generation. Does not yet address the underlying subsidies that underpin state owned coal and oil enterprises. A clear multi-stakeholder process to address these issues might be a helpful	Limited discussion of existing subsidy structures or steps one might take to address and reconcile these.

		complement to proposed activities.	
Executive capacity	Acknowledges the need for better coordination across agencies. Proposes activities that will support the development of technical skills, and to address knowledge barriers.	Notes that while MoE has a mandate to promote labeling, standards for appliances, audits, training for energy managers and public awareness, capacity to implement programs efficiently is limited. Increasing the profile and visibility of these programs is important if programs are to succeed.	Limited discussion of the various roles and responsibilities of various government agencies, and where capacity may be strengthened. Plan notes a need to coordinate with other agencies in the sector given that Min of Environment is the point of contact; steps to this end not yet outlined.
Regulatory Capacity	Acknowledges challenges of regulating distribution utilities to incentivize energy efficiency. The proposed program will enhance the regulator's understanding of international best practice in this area, and support efforts to put in place regulatory approaches that better support efficiency.	Notes the establishment of MEMR to support implementation of the Geothermal Law. Efforts to establish an independent regulator in Indonesia have stalled after rulings on privatization. The terms on which new generation is contracted, however, requires independent oversight and transparency, and some mediation between various policy and legal directives is needed. This would support a timely, high quality and cost effective completion of proposed new investments.	Notes the steps the regulator has taken in increasing heating tariffs. EBRD's legal and regulatory dialogue with Ministry of Energy and Mineral Resources (MEMR) on RE and EE mentioned. Limited discussion of the capacities / institutional context for the regulator though it seems to be playing a significant role.
Transparency	Limited attention, though the plan recognizes the need to improve information sharing on energy efficiency options. The plan would be strengthened, however, by a discussion of how improvements in operational transparency of the distribution utilities (and of the regulator) and independent scrutiny of periodic reports on performance, for example, might support efficiency programs.	Recognizes the importance of transparent and competitive procurement; does not yet indicate how these issues will be operationalised though this will be central to program success. Useful to learn the lessons of the coal fast track program wrt need for good procurement practices and transparency about program implementation. Further, efforts to enhance transparency around pricing and subsidies may support objectives of addressing subsidies and rationalizing prices.	The lack of transparency in the business environment in Kazakhstan is recognized as a significant challenge. There is some attention to the need to share information about the impact of the district heating scheme to facilitate scale up, but in general there could be more attention to issues of transparency that could enhance program implementation such as the terms and procurement processes for contracting new infrastructure, prices, etc.
Public + consumers	Notes the need to educate end-users on EE, either by directly educating consumers or training technicians and industry groups who will in turn educate consumers. More careful attention to individual consumer needs will be important in the design of the residential EE program; public participation in program design may support more effective program design. Consumer protections in extending credit to residential users to improve efficiency may need consideration.	Limited discussion of the role that citizens, consumers and the public in program design and implementation. There is scope for creative collaboration here to enhance governance conditions that will support program implementation. Engaging consumers in informed efforts to address pricing / subsidy related issues will be useful, including to mitigate potential negative impacts for the poor. There is strong civil society interest in understanding the impact and progress made through the CTF.	Plan includes an annex on the result of consultations with NGO stakeholders on the development of the plan. The need to inform and engage consumers in energy efficiency programs (esp. the district heat program) is mentioned.
Utility capacity	Need to work with distribution utilities to address efficiency opportunities, particularly in the residential sector noted.	Partnership with PLN to develop geothermal resources and uptake of renewable energy has the potential to significantly enhance internal capacity. Internal incentives wrt energy efficiency	Discusses the need to build the capacity of district heating utilities on energy efficiency, role of other utilities including in RE programs not yet discussed.
Local Technology Centers	Discusses the need to build up local technical capacity and skills to identify and implement EE projects e.g. efficiency audits.	The need to build up local skills on energy auditing and efficiency noted; collaboration with ESCOs also noted though this industry not yet well developed.	The Kazakhstan Sustainable Energy Finance Facility will bring international (German, Russian) expertise on renewable energy development together with financing from local banks; less

			emphasis on local capacity on technology deployment.
GHG Management	Not discussed; corporate greenhouse gas accounting programs might usefully complement the industrial energy efficiency program proposed.	Not discussed	Not discussed.

This review is based on the Clean Technology Fund Investment Plans that have been publicly disclosed on the Climate Investment Fund website as of 10 March 2010. Dennis Tirpak, Senior Fellow in WRI's Climate and Energy Program collaborated in reviewing the Indonesia Plan.

December 2009 CTF INVESTMENT PLANS

	Philippines	Thailand	Vietnam
Baseline and objectives	Framed by the Philippine Energy Road Map. GHG emissions have grown due to increased use of coal, and from transport as a result of a 6% motorization rate. At the same time, poverty has also risen. The plan supports the National Environmentally Sustainable Transport strategy. Also supports RE objectives including 100% increase in RE capacity. The plan is based on two scenarios evaluated by the World Bank: one proposing a 10% improvement in EE and a doubling of RE; the other making a more ambitious progress on RE, EE, and sustainable transport. Also set in the context of Philippines attempts at sector reform.	Framed by the 2008 - 2012 National Strategy for Climate Change Management developed by the Office of the Prime Minister. Electricity (37%) and transport (26%) are the key sources of GHG emissions in Thailand. An Alternative Energy Plan, a Transport for Sustainable Development plan, and the Bangkok metropolitan climate policy provide the context for the plan. Notes that Bangkok is the center of economic growth for the country, and this is raising environmental and livability challenges, and emissions per-capita are comparable with Europe. Identifies need to increase use of alternative energy, improve conservation, scale up public transport, and improve energy efficiency in manufacturing.	Framed by National Program to Respond to Climate Change. Vietnam's emissions are growing faster than GDP (8% annually between 2003-2007), due to expansion of heavy industry & motorized transport, increased use of fossil fuels for power, and increased energy intensity (50% since 1998). Under BAU, energy demand estimated to double and energy-related GHG emissions to triple between 2010 and 2030. Electricity generation (248%), transport (214%) and industry (163%) are the leading sources of energy consumption. Notes potential to reduce Vietnam's national energy consumption relative to BAU by 5-8 % by 2015, with 5% RE capacity by 2020 and public transport accounting for 50% of passenger-kilometers travelled by 2020.
Priorities of Clean Technology Investment Plans	-Reform of rural cooperatives in partnership with the Development Bank of the Philippines so they use RE Energy efficiency through demand side management -Solar Power development facilitated by net metering + enhanced energy efficiency, particularly in the Visayas and Mindanao -Bus rapid transit in Cebu and Metro Manila	-Financing for the private sector to implement RE projects (esp. biomass and wind)through the state owned Bank of Agriculture and Agricultural Cooperatives and EXIM Bank -Financing for the state utility EGAT and the provincial distribution utility PEA to make long term investments in RE -support private financial institutions to support RE/EE/ cleaner production in the private sector -Urban transformation in Bangkok through EE and BRT	-Energy Efficiency: industrial energy efficiency and ESCOs -Transmission system modernization (high voltage lines and smart grid technology) -Capitalisation of a financing Mechanism for private sector RE, EE and cleaner production programs - Strengthen urban light rail transport systems in Hanoi and Ho Chi Minh city by integrating them with bus routes and supporting infrastructure
Public Financing	CTF: \$250m = \$75m for RE; \$50m Transport; \$125m RE/EE MDBS: \$1050 (<i>\$750m IBRD; \$400m ADB</i>) RE: CTF: \$75m (World Bank) + \$250m IBRD + \$250m IFC +\$180m Phil Govt Urban Transport: CTF \$50m; \$250m IBRD; \$50m Phil Govt \$125 million RE/EE: CTF\$125m; GoPhil\$50m; ADB \$400m	CTF: \$300 m = \$160m public sector advancement;\$ 60m private sector advancement;\$ 70m urban transformation MDBS: \$500m = IBRD \$160m public sector + \$70m urban transformation; IFC: \$270m private sector	CTF: \$250 m = \$50m industrial EE, \$50m transmission, \$50m urban transport, \$30m Smart Grid, \$70m Clean Energy Financing Facility MDBs: \$1,180 million (<i>ADB: \$300m = \$40m industrial EE, \$260m transmission, \$500m urban transport; IBRD: \$30m Smart Grid; IFC: \$70m Clean Energy Financing Facility</i>) GoV: \$265 million = \$25m industrial EE, \$40m transmission, \$100m urban transport, \$100m Smart Grid

Detailed Review of Plan Interventions Targeting the Electricity Sector			
Energy Planning	Presidential task force on climate change is developing road maps for mitigation and adaptation. Overarching objectives to use less energy; use it more efficiently; develop indigenous resources and attract private investment are mentioned, but there is no discussion of the planning framework (or lack thereof) in the Philippines.	Discussion of the Alternative Energy Development Plan and the need to reconcile this with the mainstream Power Development Planning processes	The Power Master Development Planning process which seeks to match demand and supply is mentioned.
Energy Efficiency (EE) Policy Regs.	Makes reference to the energy efficiency conservation plan which seeks to establish a legal framework for EE, DSM in all sectors, and establish baseline data and benchmarks. Also references the National Energy Efficiency Conservation Program. While the lack of effectiveness of these laws is referenced, there is little discussion of steps that could be taken to enhance implementation.	Plan set in the context of the Energy Conservation and Promotion Act, and builds on the experience of the EGAT DSM office. References the establishment of the Energy Conservation Fund Promotion Fund as well. Also notes that a fund to support ESCOs has been established. Issues of split incentives for EGAT and the limits to the role the DSM office can play are not addressed in much detail.	2003 Decree on Efficient Utilization of Energy and Energy Conservation and 2006 Vietnam National Energy Efficiency Program, which targets 3-5% savings from BAU in 2006-2010, and 5-8% in 2011-2015. Energy Efficiency and Savings Law expected in 2010. Limited impact of energy efficiency laws to date is noted as a risk. Links between the government proposed EE funds and the proposed private finance mechanisms are not elaborated.
Renewable Energy Policy + Regulations	Jan 2008 RE act enacted in 2009 presents the overarching framework of the plan. Capacity to implement the tenets of the act or the implications of the implementing regulations are not discussed even though significant uncertainty as to the details of the RPS, feed in tariffs, net metering and RE trust fund remain. Reference made to World Bank support for clarification of these issues. The Biofuels act of 2006 is also mentioned.	The Alternative Energy Development Plan seeks to scale up the role of renewable energy. The Small Power Producers Program and Very Small Power Producers programs provide further financial incentives for RE.	2007 National Energy Strategy prioritizes renewable energy and sets targets of 5% by 202 and 11% by 2050. 2001 Renewable Energy Action Plan RE law has been proposed, and feed in tariffs and other incentives being considered.
Pricing	Reference is made to the competitive electricity markets that have been introduced. Feed in tariffs that will enhance viability of RE also mentioned. Little discussion of the fact that electricity prices in the Philippines are quite high by global standards, but this has neither incentivized efficiency nor the uptake of renewables.	Mentions that energy efficiency measures might be facilitated by some pricing reform.	A non-negotiation standardized power purchase agreement (SPPA) and a tariff formula (the ACT) for small RE projects selling to the grid. Implications of transmission pricing for viability of smartgrid mentioned.
Subsidies	RE act establishes a trust fund financed by levies on fossil fuel use. Limited other discussion of implications of subsidies for fossil fuels.	Little discussion of subsidies for fossil fuels within Thailand.	The Plan does not discuss current fossil fuel subsidies. Vietnam historically has provided subsidies on imported fuel to maintain a stable low price, however. As of December 2009, Vietnam will provide subsidies to oil product distributors, and if world crude oil prices rise by more than 12%, may intervene to help stabilize the market through either subsidies or lower taxes.
Executive capacity	Notes establishment of the RE management bureau. Little discussion of the capacity of the executive to advance proposed	Reference made to the Ministry of Energy as the key actor for the sector. Institutional context for its operations receives limited discussion, though	Discussion of the role that the Ministry of Investment and Trade plays in overseeing the sector. Limited discussion of its capacity to advance

	programs	links with the Ministry of Environment are referenced. Relies on the Ministry of Finance to oversee contributions to funds to scale up RE/EE investments.	sustainable energy programs.
Regulatory Capacity	Little discussion of the role of the National Electricity Regulator though it is relevant for most components of the plan.	Discusses the mandate of the Electricity Regulatory Commission to protect consumers, oversee tariffs, and administer a public benefit fund. Less emphasis on its mandate to support energy efficiency, or its capacity to implement this mandate with independence in practice.	A new electricity regulatory authority is being put in place, in part to “unbundle” the tariff system such that NPT revenues are directly linked to the amount of power it transmits between generators & distribution companies. MOIT has the regulatory authority to issue best practices guidelines and draft standards.
Transparency	Limited discussion of transparency, although reference is made to several key implementing regulations that still need to be developed, the need to reform rural cooperatives, and other objectives that would be enhanced by transparency.	Limited discussion of transparency even although it proposes working with state financial institutions to establish new funds whose operations and impacts should be monitored.	Limited discussion of transparency. The ADB is providing technical assistance (TA) raise awareness of EE, which is also a goal of the National Energy Efficiency program is to enhance public awareness.
Public + consumers	Little attention to these issues in the plan. ADB RE/EE program seeks to raise consumer awareness of efficient energy use by both engaging them in program implementation and through education. IBRD RE program does not discuss these issues. Yet citizens / consumers may be partners in efforts to enhance the accountability of rural cooperatives.	Emphasizes need to change public behavior, and reference is made to the role of the regulator in protecting consumers. Limited discussion of the role that civil society may play in program implementation or oversight.	The National Energy Efficiency Program will build public awareness of energy conservation. In general, discussion of stakeholder engagement in the development of the plan is limited.
Utility capacity	Need to address capacity of rural cooperatives addressed; interactions between new players in power sector generation and existing utilities given limited attention.	Strong focus on Thailand’s utilities and the need to provide incentives for them to pursue low carbon options consistent with the AEDP	The need to provide incentives to utilities to implement RE/EE is mentioned. Efforts to reform the National Power Transmission Company (NPT) to support renewable are discussed.
Local Technology Centers	Not discussed		Not discussed.
GHG Management	Not discussed	The Thailand Greenhouse Gas Management office has been established in the Ministry of Environment.	Not discussed.

This review is based on the Clean Technology Fund Investment Plans that have been publicly disclosed on the Climate Investment Fund website as of 1 December 2009.

OCT 2009 CTF INVESTMENT PLANS			
	Ukraine	South Africa	Morocco
Baseline and objectives	A business as usual (BAU) scenario is set against Ukraine’s Energy Strategy. Plan based on Ukraine’s targets under the Kyoto Protocol, and to reduce emissions by 20% and 50% below 1990 levels by 2020 and 2050 respectively. Energy and industry priority sectors for intervention as account for 91% of emissions. Based on “low carbon development” options to reduce emissions relative to the BAU including: rehabilitation of fossil fuel power plants, 6GW of additional nuclear power plants, switching to 5 500 MW combined cycle / heat and power plants; renewable power generation; increasing electricity production from hydropower by 5 TWh; renovation of the gas network; improving industrial efficiency; improving household efficiency.	Framed by the Long Term Mitigation Scenarios, a national effort to identify opportunities to reduce South Africa’s GHGs. More than 70 % of emissions come from the energy sector because of its reliance on coal, and its economy is highly energy intensive. The scenarios identify energy efficiency, renewable energy, nuclear energy, and modal shifts towards public transport as key opportunities to reduce emissions. The plan is placed in the context of its renewable energy policy and newly adopted renewable energy feed in tariffs, 12% energy efficiency improvement target, and initial experiments with carbon taxes.	Framed by second national UNFCCC communication. GHGs increased 35% between 2000 and 2006, particularly in the electricity (increased coal), and transport sectors. Reducing energy demand could reduce by 6.17 MtCO2e per year. Energy supply measures including renewable energy, nuclear power, and increased natural gas could offer 17.6 MtCO2e. National Plan of Priority Actions seeks to: diversify fuel supply; increase access to energy; promote renewable energy and energy efficiency; integration with European Markets. Targets by 2020 include: increase wind production by 600% to reach 20% of generation; low energy lighting to reduce energy demand by 800MW; tariff revisions to promote conservation; 15% reduction in energy use in buildings, industry and transport.
Priorities of Clean Technology Investment Plans	-100 MW private sector renewable energy (wind farms) and funding through financial intermediaries for 80 MW of smaller projects eg. small hydro and biomass (RE) -450 MW Natural Gas Combined Cycle Combined Heat and Power plant (CCGT/CHP) -Financing for Energy Efficiency (EE) Smartgrid development to support renewable energy scale up -Upgrading 30% of compressors in Ukraine’s gas transit system to higher efficiency levels <i>The CCGT/CHP and the Gas Transit System do not appear to meet the investment criteria.</i>	-100 MW Eskom Uppington Concentrating Solar Thermal plant -100 MW Western Cape Province wind farm -Support municipal governments to deploy solar water heaters -Scale up energy efficiency financing to the commercial and industrial sectors	Renewable energy promotion, energy conservation, and public transport identified as key interventions for CTF financing support. Does not provide details on specific programs. Instead, proposes to work through the newly established Fond de Development de l’Energie (FDE), a government owned fund to enhance energy security that has attracted \$1 billion in co-financing from the UAE, Saudi Arabia, and the King Hassan Fund. CTF would help “buy down the costs of low carbon growth” through this fund.
Financing	CTF: \$350 million = \$75m RE; \$50m CCGT/CHP; \$75m EE; \$50m smartgrid; \$100m gas system MDB Co-Financing: \$2550m IBRD: \$ 250m EE; \$300m Smartgrid; IFC: \$50m RE; \$750m CCGT/CHP EBRD: \$250m RE; \$100m CCGT/CHP; \$75m EE; \$750m gas network	CTF: \$500m MDB Co-Financing: \$560m IBRD: \$150m CSP; \$110m Wind IFC: Energy Efficiency and Solar Water heating \$200m AfDB: \$50m CSP + \$50m Wind	CTF: \$150 million MDB Co-Financing: \$400 – 600m IBRD: \$100 – 200m IFC: \$200m or more AfDB: \$100 – 200m
Detailed Review of Plan Interventions Targeting the Electricity Sector			
Energy Planning	Little discussion of energy planning frameworks and processes. The Ministry of Fuel and Energy oversees the sector and that efforts are underway to introduce competition including through a wholesale electricity market and power pool. Multiple energy strategies and policies are discussed.	Mentions Eskom new build program, noting that there are few near term alternatives to coal to meet energy needs. The lack of effective and transparent planning processes, the responsibility for which has recently been returned to Eskom as system operator is not mentioned.	Notes that the Ministry of Energy Plan sets ambitious goals for increasing supply including by scaling up renewable energy and energy efficiency conservation.

Energy Efficiency (EE) Policy Regs.	A new government energy efficiency law is referenced. The National Agency for the Appropriate Use of Energy (NAER) has developed and implemented several energy efficiency policies, and can participate in the design for tariff policies. Focus of the plan is on making financing for energy efficiency available to commercial banks in the Ukraine.	2009 National Energy Efficiency strategy sets 12% energy efficiency improvement targets. A new standard offer model to incentivize energy efficiency is discussed.	An energy efficiency law is under development. The plan emphasizes the targets to reduce energy consumption by 15% in key sectors. It also mentions programs to incentivize household efficiency by offering a 20% discount to households that reduce consumption by 20% below targets; a demand side management program administered by the National Office for Electricity (ONE); and other provisions to enhance efficiency. .
Renewable Energy Policy + Regulations	The Law on Alternative energy Sources of 2003 provides a framework for alternative energy, but has lacked financial support until the adoption of the green tariff (see below). Ukraine is in the process of developing procedures and standards for RE development.	Discussion of the implications of the new renewable energy feed in tariff for creating a market for renewable energy, but does not address current uncertainties around their implementation.	Laws to promote independent power production provide the basic framework for promoting renewable energy development in Morocco. A lack of supportive tariff and regulatory frameworks for wind energy scale up noted. Energipro program allows industrial customers to produce their own renewable energy through reduced wheeling and access to transmission infrastructure.
Pricing	A green tariff has recently been introduced to support renewable energy which presents a coefficient for the retail price for various renewable energy sources.	REFIT incentives for renewable energy noted. Low prices for energy highlighted as a disincentive for efficiency, while noting upcoming price increases. Some reflection on the cost structure of Solar Water systems.	Pricing incentives for energy efficiency in place at ONE are discussed in some detail.
Subsidies	Notes that energy prices (and gas prices in particular) have historically been low. Does not address underlying subsidies for conventional energy that are reflected in pricing and energy systems.	The close relationship between Eskom and the mining industry is mentioned, but no discussion of the underlying cost structure of the coal industry.	The plan notes the increase in public subsidies for oil, but does not discuss the possibility or viability of measures to address subsidies for conventional energy.
Executive capacity	The National Agency for the Appropriate Use of Energy seeks to promote energy efficiency. A state inspection for energy efficiency unit has been established. Ministries for Regional Development and Housing are also active on efficiency. A Renewable Energy Agency is mentioned, but there is no discussion of its capacity or relationship with other sector actors.	Limited consideration of the various and overlapping roles of the Department of Energy, Department of Public Enterprises, and Department of Environment which all play a role in governing the sector.	The roles of various ministries and agencies including the Ministry of Energy, ONE, and the Center for Development of Renewable Energies (CDER) are described; there is limited of their respective capacities and opportunities for institutional capacity enhancement, though it is clear that these institutions have important programs to promote renewable energy and efficiency underway.
Regulatory Capacity	Limited discussion the role of regulatory agencies; notes that the EBRD has been supporting the National Electricity Regulatory Commission to implement the renewable energy policy.	NERSA's role in introducing critical regulations to enable sustainable energy is noted, but there is limited attention to its capacity and authority to oversee the sector.	There is no independent electricity regulator in Morocco: ONE reports to the Ministry of Energy.
Transparency	Some discussion of the need for better information on renewable energy options. Corruption is recognized as a major risk for the sector, but there is little discussion of how transparency provisions can help mitigate these risks.	Recognizes the importance of raising consumer awareness of energy efficiency options, including Solar Water Heating. In general there is little attention to important issues of transparency in program implementation.	Risk assessment notes that the transparency of the operations of the FDE and its compliance with accepted standards of good governance to ensure that funds are spent in accordance with agreed priorities. There is no further elaboration of how these critical objectives will be met. A

			brief reference is made to a pre-preparation grant from the CTF to support this objective.
Public + consumers	Not discussed.	The engagement of consumers in the energy efficiency program is noted, but there is no other consideration of stakeholder engagement in the program.	Little discussion of how to engage the public or consumers in development or implementation of programs.
Utility capacity	The need to support renewable energy companies to participate in the market is discussed, but there is little discussion of the role of the dominant energy companies in Ukraine.	Eskom’s capacity to implement CSP and wind energy programs will be enhanced through the program.	ONE capacity to implement renewable energy and efficiency programs is mentioned; a law to allow ONE to build its own renewable energy facilities is under development.
Local Technology Centers	No discussion of the role of local technology centers in the project implementation.	Supports technology development capacity within Eskom. Notes the potential to support the newly established South African National Energy Research Institute (SANERI)	The role of the Center for Development of Renewable Energies which is now being reorganized into the Agency for the Development of Renewable Energy and Energy Efficiency in implementing programs is noted.
GHG Management	Not discussed.	Notes that a GHG inventory process for the transport sector is underway to support public transport planning. Limited other attention to GHG management capacity within South Africa.	Not discussed

This review is based on the Clean Technology Fund Investment Plans that have been publicly disclosed on the Climate Investment Fund website as of 25 October 2009.

JAN 2009 CTF INVESTMENT PLANS			
	Turkey	Mexico	Egypt
Baseline and objectives	Framed by 1 st National Communication of 2007 to the UNFCCC (2 nd communication to be released in 2010), which plans to reduce emissions by 11% through large hydro, renewable energy (RE) and energy efficiency (EE). The CTF plan identifies a suite of options to reduce emissions by 30%: expanding wind power to 20,000 MW by 2020 at estimated cost of \$26.4 billion (\$7.84 billion more than with conventional technologies), existing plant upgrades, transmission upgrades, and implementation of a demand side management (DSM) program. EE investments would save some \$15.5 billion and reduce emissions. Considers opportunities to reduce emissions by 44%: further efficiency, including replication of DSM programs, transport programs, restoration of degraded forests, afforestation, increasing nuclear power, waste power.	Framed by Mexico’s 2009 Special Climate Change Plan (PECC). The Plan identifies GHG mitigation options linked to land-use, forestry and bio energy, end use efficiency, power generation and distribution, oil and gas, and transport. The CTF investment plan prioritizes commercially available technologies that face “institutional, regulatory or cost barriers (especially up front investment)”. It anticipates reducing electricity consumption by 22,000 GWh per year (10%), and deferring 5,000 MW of conventional energy. Construction of 3 BRT corridors in Mexico City and Leon are predicted to reduce emissions by 18MC02 per year (a 20% reduction against the baseline).	1 st National Communication to UNFCCC from 1990 and National Strategy studies of 2002 frame plan. Notes growing energy intensity and emissions. Cogeneration, industrial efficiency, switching to natural gas for industry and transport, wind energy development, organic waste management and methane utilization; afforestation projects extension of railways and underground lines, mass transit systems and extension of waterways for transport are key mitigation options. Avoid 20mC02 each year through RE program. Avoid 12% annual emissions and 30mC02 over 20 years through transport.

Priorities of Clean Technology Investment Plans	Renewable energy, smartgrid, and energy efficiency. Debt financing for preparation of RE and EE sub projects identified by IFC and EBRD sought. \$1 million grant finance sought for the smartgrid component of IBRD project with the Turkish Transmission Company (TEIAS). Complementarity with World Bank development policy loans to privatize the electricity sector and introduce competition in electricity markets including through a power pool.	Transport (bus rapid transit systems), renewable energy, and energy efficiency. IBRD will support a sustainable transport program, and a lighting and appliance efficiency program. IFC will support a private sector RE program focused on wind. available technologies that face “institutional, regulatory or cost barriers (especially upfront investment)”. IDB support for energy efficiency and renewable energy programs.	Renewable energy (specifically wind and solar) and urban transport. CTF funds will seed an RE fund to incentivise transmission company to purchase wind energy, upgrade transmission to tap wind resources, and support new RE public private partnerships. CTF support for urban transport will replace old public buses and private taxis with a new fleet of CNG vehicles; complete 2 new lines of its underground metro; and prepare for BRT and LRT systems. The plan is linked to ongoing programs to reform Egypt’s power and transport sectors.
Financing	CTF: \$400 million (250 million in phase 1). MDB co-financing: \$1,900 million IBRD: \$300m smartgrid; \$500m RE/EE \$400m SME/Public EE; IFC/EBRD: \$400 RE/EE; Govt of Turkey: \$1,550 million	CTF: \$500m MDB Co-Financing: \$1,646 million IBRD: \$600m BRT; \$400; \$400m lighting and appliances; IDB: \$300m + \$10m (grant) for RE; \$50m+1.5m grant for EE; IFC: \$135 Govt of Mexico: \$1,425 million	CTF: \$300 million MDB Co-Financing: \$150m IBRD for transport; 150m AfDB + IBRD for transmission (respective contributions not specified); \$250m IBRD for RE fund. Gov Egypt + Donors: \$285 million for transport; \$100m for RE component.
Detailed Review of Plan Interventions Targeting the Electricity Sector			
Energy Planning	Analyzes cost increment for replacing fossil fuels with renewables, but does not address underlying assumptions of demand projections.	PROSENER’s (planning unit) current plan considers energy portfolio diversification and increase RE share; specific targets to enhance efficiency and production especially for consumers. While not a completely holistic least cost plan, it does include multiple impacts and approaches.	Power sector development strategy to increase IGCC and supercritical coal technology, increase RE to 20% of production, and increase consumption efficiency.
Energy Efficiency (EE) Policy Regs.	2007 Energy efficiency law and implementing regulations include improve efficiency of generation, transmission and distribution. No discussion of implementation processes or role of electricity regulator (EMRA).	Focus on demand side measures. Role of the National Commission for Energy Efficiency to promote EE at various levels of gov. Focuses on new mandate of CRE to regulate externalities to promote efficiency.	Notes that gov is considering establishing an energy efficiency agency and conservation plan.
Renewable Energy Policy + Regulations	The plan notes that the 2005 Renewable Energy law has attracted interest in wind energy development. Govts’ accelerated target seeks to increase RE (mostly wind) from 3,000 MW to 20,000 MW by 2020. EMRA developing guidelines for wind energy contracting. Attention to EMRA’s capacity focuses on wind technology procurement, but flags upcoming reviews of prices for RE esp. solar and biomass.	IDB component focuses on policy and regulatory incentives for scaling up renewable energy investments and commercialization of these technologies. Will support LAEFERTE (renewable energy law) implementation process, including by helping CRE (electricity regulator) design and implement regulations. Establish renewable energy financing within local infrastructure finance bank (NAFIN) to support investments in RE.	Govt pursuing wind commercialization: first by introducing competitive bidding for RE supply; will explore feed in tariffs as a second phase (in 5 years). Govt efforts to prepare sector for competition + privatization + independent regulator highlighted as complementary measures. Proposed new electricity law will give RE providers market access + dispatch rights. A public RE fund will incentivise transmission company to buy RE (financed by revenues from gas exports)
Pricing	Efforts are underway to revise pricing structures to reflect costs.	Integration of RE predicted to result in net reductions in prices by lowering price instabilities / supply risks.	Low tariffs seen as barrier to attracting investment. Social implications of pricing reform are being studied.