

# Balancing Energy Access and Environmental Goals in Development Finance: The Case of the OPIC Carbon Cap

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## Abstract

The international community has ambitious goals for responding to climate change and increasing global access to energy services. To date, these agendas have been viewed to be largely complementary. However, policy makers are now facing more explicit interactions between environment, energy, and economic and social development objectives and associated trade-offs. In this essay, we explore the implications of the balance between these aspirations as they manifest in the investment rules for various international finance institutions by looking closely at the U.S. government's Overseas Private Investment Corporation (OPIC).

We argue that trade-offs between emissions reductions (or limiting emissions growth) and increasing energy access are inevitable, given the present state of energy systems. Understanding these trade-offs and their consequences can help to better inform policy debates and investment decisions. We conclude with several “win-win” proposals that would exempt the poorest and least-emitting countries from certain restrictions on public finance. These proposals, including a potential political compromise, would have a positive effect on access to energy services without any significant impact on global greenhouse gas emissions.

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## **Contents**

1. Introduction: Energy poverty, basic services, and equity .....	1
2. Tensions and tradeoffs with other goals .....	3
3. Implications for Development Finance.....	4
4. Making Rules at OPIC .....	6
5. Possible win-win options for OPIC and natural gas .....	9
6. Conclusion.....	11
References .....	12

## 1. Introduction: Energy poverty, basic services, and equity

The provision of reliable, secure, and affordable energy services are central to addressing many of today's global development challenges, including poverty, inequality, climate change, food security, health, and education (UN-Energy 2005; Modi et al. 2006). Still, between two to three billion people—or roughly one in four people globally—lack access to the most basic of energy services. The unequal global distribution of both energy consumption and emissions is stark (Table 1). In addition, consumers in the poorest countries are also facing some of the highest costs for energy services (Eberhard et al. 2011).

**Table 1: Electricity consumption and CO<sub>2</sub> emissions**

	<b>Electricity consumption, kWh/capita</b>	<b>CO<sub>2</sub> emitted, metric tons/capita</b>
<b>United States</b>	12,564	17.75
<b>Germany</b>	6,715	9.70
<b>South Africa</b>	4,300	9.46
<b>China</b>	2,716	5.98
<b>Tunisia</b>	1,260	1.82
<b>India</b>	580	1.33
<b>Ghana</b>	219	0.38
<b>Kenya</b>	150	0.31
<b>Nigeria</b>	128	0.46
<b>Liberia</b>	79	0.14
<b>Tanzania</b>	76	0.14
<b>Ethiopia</b>	51	0.07

*Sources: WDI, U.S. EIA, UPDEA Africa, 2010*

While the impacts of climate change and environmental degradation are well documented and understood in the academic literature and in public discourse (see e.g., IPCC 2013 and IPCC 2014), the effects of a lack of access to modern energy services are not as well covered. The impacts of energy poverty on quality of life are significant, and include:

- *Premature deaths.* The latest global disease burden estimates suggest that some 3.5 million premature deaths per year—more than the global deaths attributed to AIDS and malaria combined—are related to household air pollution from solid fuels used for lighting, heating, and cooking (Lancet 2012).
- *Health services.* More than 30% of health facilities in Africa—serving an estimated 255 million people—operate without electricity (Practical Action 2013). Some 60% of refrigerators used in health clinics have unreliable electricity, compromising the effectiveness of life-saving vaccines and other pharmaceuticals (GAVI 2012).
- *Education.* Lack of reliable electricity also affects education by constraining the hours that students can read and limits their ability to access the internet and other information technologies. More than half of all African schoolchildren attend school with no electricity (Practical Action 2013).

- *Jobs and economic opportunity.* More broadly, lack of reliable and cost-effective electricity is among the top constraints to expansion in the manufacturing sector in nearly every sub-Saharan country, which affects economic growth, tax revenues, and job creation (Gelb, Ramachandran, and Shah 2009). The World Bank reports that some 25 countries in Africa face regular rolling blackouts (World Bank 2014a).

Tackling energy poverty has thus become a priority on the international development agenda. The enormity of that task, from development of physical infrastructure, to institution building and regional trade growth, to fundamental aspects of governance cannot be understated (Eberhard et al. 2011).

Related global aspirational goals have been put forward by the UN through its *Sustainable Energy for All* initiative. The “principal” goal (as first among equals of three goals) is to provide universal access to energy services by 2030, and an initial “Tracking Framework” is now in place (World Bank 2013a). The UN’s High-Level Panel for the Post-2015 Millennium Development Goals also recommended a new target to “ensure universal access to modern energy services” by 2030 (UN 2013, p. 31). African governments, which are becoming more vocal in expressing their views and asserting ownership of strategic priorities, are also increasingly demanding that investment in infrastructure be a priority (African Union 2012). Further, basic infrastructure shortages are consistently cited in public opinion surveys as one of citizens’ most pressing concerns (Leo 2013). These all suggest that energy access will remain a high-profile objective on the international development agenda for the foreseeable future.

As an example, major efforts are underway to expand access to electricity at the national, regional, and local levels, including public efforts to boost generation, improve quality of service, expand distribution, improve power sector policymaking, and to promote the creation and deployment of clean energy technologies. By any account this will take a combination of centralized and decentralized generation solutions. Many of the least developed countries already have national power system plans in place (UNDP 2009)—although many are being refined. In response to this, the multilateral development banks have been shifting their portfolios toward energy infrastructure. As an example, in 2012, nearly one-quarter of all new World Bank commitments were in the energy sector (World Bank 2012a). For the African Development Bank, the figure is nearly one-third (AfDB 2013). In both, the share of investment in renewable energy is also growing.

Although many of the bilateral donors and development finance institutions have focused for much of the past three decades primarily on public service delivery, they too are gradually responding to the increasing demands for energy services.<sup>1</sup> As an example, in June 2013, U.S. President Barack Obama launched “Power Africa,” the signature Africa initiative of his second term. It aims to use a range of U.S. government agencies to double energy access in the continent (White House 2013a). The initiative explicitly recognized that achieving ambitious energy access goals will require an array of solutions reflecting different countries’ endowments and starting conditions. In this short essay, we consider the tensions and tradeoffs between energy access provision and environmental goals in Section 2. Section 3 considers how this impacts development finance and institutional rule-setting, while Section 4 focuses on the case of the U.S. agency OPIC. Section 5 presents some possible win-win options, and we conclude in Section 6.

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<sup>1</sup> See e.g., the work of Norway through NORAD <http://www.norad.no/en/thematic-areas/energy>

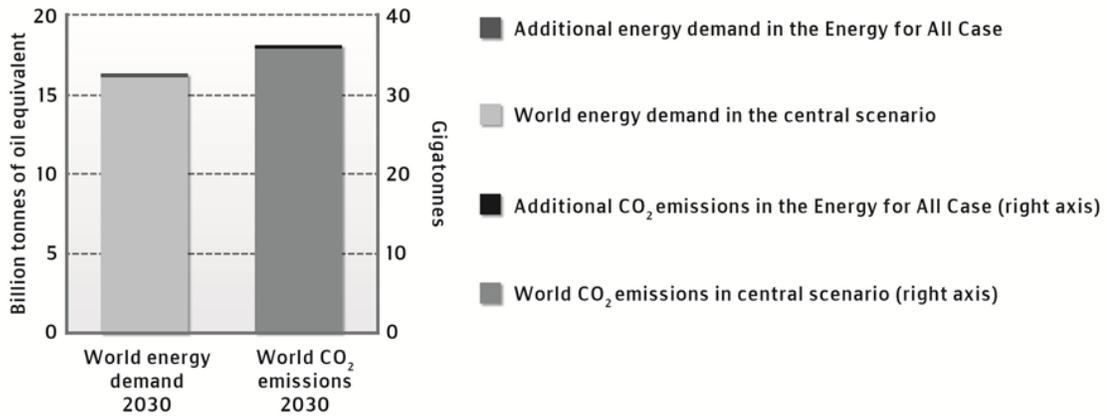
## 2. Tensions and tradeoffs with other goals

The push for expanding modern energy access, including increased power generation for industrial growth, however, potentially conflicts with other global goals, notably environmental targets (Howells et al. 2013). To illustrate, large-scale hydroelectric dams have attracted heavy criticism for their effect on local communities, fisheries, and other environmental impacts, prompting a near-total halt to World Bank financing for large-scale dams about a decade ago. A fierce debate on dams and the Bank's hydroelectric strategy reignited around 2003 with the representatives of the major developing countries working together to encourage a return to high-risk/high-reward water projects (Mallaby 2004). World Bank lending for hydroelectric projects has increased steadily since. One recent example of the new approach is the long-awaited approval of support for the Inga 3 project in the DRC in March 2014 (See e.g., World Bank 2012b; World Bank 2013b, World Bank 2014b). The explicit treatment of the energy-water nexus is also evidence of a new way of considering these interactions (e.g., the Bank's Thirsty Energy initiative). The United States was the sole member of the World Bank's board (which represents 188 member countries) to abstain on the Inga vote and publicly expressed its concerns about project risks (US Treasury 2014).

Climate change concerns and goals are especially visible on the world's political radar, and major increases in, *inter alia*, fossil fuel-based power plants (especially coal) would have significant effects on prospects to reduce global CO<sub>2</sub> emissions to a level consistent with a low stabilization target, such as the oft-cited 450 ppm or 2 degree C temperature target (see the international climate UNFCCC negotiations). As a result, the provision of energy services—and the associated need to bring online a significant amount of new power generation at a rapid pace—are at times coming into direct conflict with investment rules focused on constraining greenhouse gas emissions. One example has been the vigorous debate over public funding for coal-based power plants (e.g., in Kosovo and South Africa), where projects championed by the host governments have come under severe scrutiny for their emissions (Bazilian 2011; Morris and Pizer 2013).

The implications of achieving a low stabilization target for carbon dioxide in the atmosphere, such as 450 ppm, necessarily imply that the global energy system (including the power system) must transition almost completely away from fossil fuels. To reach a stabilization target at any level will require that the carbon-free proportion increase to more than 90% of total global energy consumption, largely independent of the magnitude of that total (Pielke, 2010).

The international community has been largely able to avoid an explicit dialogue on the trade-offs (Bazilian and Pielke 2013). A lack of dialogue does not however mean a lack of trade-offs. For instance, the claim that universal energy access can be achieved with essentially no increase in the global emissions of CO<sub>2</sub> (Fig. 1) is only possible if the billions of people currently without access to energy services (or with poor quality service) only demand a minimal amount of energy services (Bazilian and Pielke 2013). The resulting projected negligible consequences in emissions essentially reflect a “poverty maintenance” level of energy service provision. While it can be politically attractive to argue that both energy access and climate goals can be met without any trade-offs, tensions between the two goals are becoming increasingly apparent and future disputes seem likely to emerge.



**Figure 1:** Impacts on energy demand and CO<sub>2</sub> emissions under the IEA's universal energy access scenario (IEA 2011).

### 3. Implications for development finance

Bilateral and multilateral agencies have dealt with these trade-offs in different ways, some more explicit than others. The World Bank, which is owned by its member countries, had for several years remained deadlocked between its shareholders' competing environment and energy investment priorities. This tension was reflected in a proxy fight over an energy strategy for nearly two years between (mainly European) shareholders who wanted the Bank to move away from fossil fuels entirely, and middle- and low-income countries that wanted the Bank to prioritize a more rapid response to their desire for rapid and large-scale power sector expansion (Ballesteros and Nagle 2011, Lattanzio 2013; Foster, 2010).

An energy strategy was finally approved by the board in July 2013, which aimed to accommodate both positions by increasing investment in renewables and efficiency, but also allowing fossil fuel flexibility on a country-by-country basis:

*The World Bank Group recognizes that each country determines its own path for achieving its energy aspirations, and that each country's transition to a sustainable energy sector involves a unique mix of resource opportunities and challenges, prompting a different emphasis on access, efficiency, and renewable energy. Every effort will be made to minimize the financial and environmental costs of expanding reliable energy supply (World Bank 2013, p. v).*

Reflecting the growing strength of middle-income shareholders—such as South Africa, India, and China—and their own intentions to utilize domestic coal for power generation, the World Bank strategy allows greenfield coal power investment (albeit only in “rare circumstances” where “no feasible alternatives” exist). In practice, this means the Bank policy is being defined on a case-by-case fight over specific projects, such as the Kosovo Power Project, a 600 MW coal station (Morris and Pizer 2013). Likewise, the African Development Bank has addressed coal investments in their energy strategy (while encouraging carbon capture and storage readiness), noting “For many African countries, coal-fired power generation is likely to form part of such an approach to help the continent increase its access to modern energy at an affordable cost” (AfDB 2012).

While these battles are frequently uncomfortable for shareholders, the multilateral development banks are ideally placed to help clarify and mediate these issues. As Ballesteros and Nagle (2011) argue, a useful role for the World Bank is to “...put in place a set of procedures that will allow them to objectively evaluate trade-offs and make investment decisions that support the sustainable development priorities of their clients.” As Morris and Pizer, both former senior U.S. Treasury officials, conclude:

*The World Bank should be ambitious in working toward clean energy approaches in its development strategies, but it would be a mistake to definitively rule out coal in all circumstances. Such a decision would be bad for development and would also undermine the very goals that the bank’s coal critics espouse by further pitting developing and developed countries against each other in the climate debate occurring within the bank (2013).*

The evolving U.S. policy is more fragmented, reflecting the multiple actors (the Administration, numerous federal agencies, Congress, etc.), but it also provides a useful case study from which to explore the tensions between various development aspirations. As an example, in October 2013, the U.S. Treasury released new guidance that:

*... ends U.S. government support for public financing of new coal plants overseas, except for (a) the most efficient coal technology available in the world’s poorest countries in cases where no other economically feasible alternative exists, or (b) facilities deploying carbon capture and sequestration technologies (U.S. Treasury 2013).*

Then, in the FY14 budget (the Consolidated Appropriations Act of 2014), language was inserted which removes any fossil-fuel restrictions on projects in low-income countries.

*None of the funds appropriated or otherwise made available...may be obligated or expended to provide... for the enforcement of any rule, regulation, policy, or guidelines implemented pursuant to...the modification proposed by the Overseas Private Investment Corporation in November 2013 to the Corporation’s Environmental and Social Policy Statement relating to coal...when enforcement of such rule, regulation, policy, or guidelines would prohibit, or have the effect of prohibiting, any coal-fired or other power-generation project the purpose of which is to: (i) provide affordable electricity in International Development Association (IDA)-eligible countries and IDA-blend countries (Section 7081).*

At the same time that the budget enabled public finance agencies to invest in power projects burning fossil fuels, the legislation explicitly opposed investment in large hydroelectric dams (Morris 2014; Bossard 2014):

*The Secretary of the Treasury shall instruct the United States executive director of each international financial institution that it is the policy of the United States to oppose any loan, grant, strategy or policy of such institution to support the construction of any large hydroelectric dam (Section 7060).*

These somewhat confusing directives across agencies and legislation are also embodied within agencies. Most agencies, such as the grant-making USAID, have included in their remits dual aspirations of promoting energy access and assisting countries in reducing their climate change emissions, but no specific mechanism for weighing or prioritizing these objectives.

The U.S. Export-Import (Ex-Im) Bank has a carbon policy but it is largely a statement of principles and contains wide scope for its governing board to make exceptions. Indeed, the Ex-Im Bank helped finance components of two controversial coal plants, the 4900 MW Kusile plant in South Africa and the 4000 MW Sasan plant in India. The justification for investing in these plants was that they are consistent with Ex-Im Bank's primary mandate to support American exports and jobs, while also helping serve both industry and households that currently lack access. The Ex-Im Bank's newly-approved December 2013 Carbon Policy includes more specific guidelines and tougher standards for high-emission plants, yet also grants exceptions to the policy for projects in 64 of the world's poorest countries (US Ex-Im Bank 2013).

Another U.S. federal agency, the Overseas Private Investment Corporation (OPIC)—the U.S. government's development finance institution which is responsible for promoting and de-risking U.S. companies that invest in developing countries—has been, in practice, nearly prohibited from investing in energy projects that involve fossil fuels. This policy may have consequences in places like sub-Saharan Africa, which are seeking to develop oil and gas resources to help alleviate widespread energy poverty (more on OPIC below). Ultimately, making such issues and tradeoffs more transparent offers the promise of enriching the array of policy options.

Into this mix, President Obama announced in June 2013 a major new U.S. government effort to boost electricity generation and distribution in sub-Saharan Africa (White House 2013a). The "Power Africa" initiative, which spans USAID, the State Department, Ex-Im Bank, OPIC, and other agencies, has set specific, if somewhat modest, immediate goals. In the six target countries (Ghana, Kenya, Nigeria, Tanzania, Ethiopia, and Liberia), the effort aims to add 10,000 MW of new power generation and provide new access to at least 20 million households, all within five years. This will be achieved, assuming success, via an approach that includes investments in a range of fuel types. A preliminary internal list of projects under the initiative's umbrella identified 21 natural gas generation projects, 8 geothermal projects, and 8 other renewable projects in the six countries. The initiative's strategy seems to align with the President's remarks on climate change made just five days before the Power Africa announcement, where he called for an end to public financing for coal plants, "unless they deploy carbon-capture technologies, or there is no other viable way for the poorest countries to generate electricity" (White House 2013b).

The United Nations, the multilateral development banks, and the U.S. Obama Administration have thus all broadly agreed in principle (albeit with different emphasis) to balance energy access and environmental goals in a similar manner: invest in clean energy, allow countries and their unique circumstances to determine their energy pathways, seek alternatives to fossil-fuel investment where possible, but ultimately do not restrict demand for electricity services in developing countries, while honoring countries' individual plans and decisions.

#### **4. Making rules at OPIC**

A focus on OPIC is warranted as its rules for investment are actively under debate and in some ways are becoming the nexus of the debate over access, environment, and climate. OPIC has an especially challenging role in trying to balance energy access and environmental goals. The agency's mandate is to promote development via U.S. private investment, while also promoting U.S. foreign policy (as per the State Department and USAID), but not U.S. exports (the mandate of Ex-Im, U.S. Trade Representative, Commerce Dept., etc.). Like many of its peers, OPIC provides a set of financial instruments, including political risk

guarantees, commercial project finance, and specialized private equity funds. Thus, OPIC is well-placed to promote energy access because of its development mandate and financial toolkit.

Yet, it is OPIC that is the most constrained of U.S. federal agencies in supporting a broad range of energy sector investments because of an environmental restriction on the total greenhouse gas (GHG) emissions of projects within its overall portfolio. OPIC has a long history of balancing environmental concerns with development and portfolio goals, such as safeguards against projects that would upset ecologically fragile areas or cause major resettlement (Moran 2003, pp. 70-71). The current OPIC policy is the result of years of efforts by various groups to improve its investment portfolio in terms of climate-related emissions, and equally improving the governance and risk exposure of the institution (Milbank and Blustein 2002). Moving in that direction has merit in terms of reducing countries' future risks of running high-emissions plants. However, the current restrictions do not allow for flexibility in limiting emissions while meeting basic energy access needs.

The GHG cap initially began as a settlement from a 2002 lawsuit brought by environmental advocates Friends of the Earth, Greenpeace, and the city of Boulder, Colorado (later joined by the California cities of Arcata, Santa Monica, and Oakland). In 2009, a final settlement agreed that OPIC would reduce emissions in its entire portfolio by 20 percent over 10 years. These targets were later extended to a 30 percent reduction over 10 years and 50 percent reduction over 15 years, and enshrined in appropriations legislation (Consolidated Appropriations Act 2010). In theory, the GHG cap limited OPIC to participating in no more than a single 400MW natural gas plant per year across its entire portfolio. In practice, however, the policy change has excluded OPIC from nearly all fossil fuel projects. In fact, the only fossil fuel powered plants OPIC has financed over the past six years globally are a 100MW mixed fuel plant in Togo in 2009 and a 250 MW oil plant in Jordan (OPIC 2012; 2014). Thus, in many ways, it has been a success in showing how a major finance body can be focused on low-carbon investments.

Several other details of the way the cap is calculated and implemented also explain OPIC's inability to participate in certain project types:

- *No pro rata share allowed.* OPIC's activities are intended to be catalytic and the agency's participation is supposed to be the difference between a project proceeding or not. Based on this notion, environmental groups successfully advocated for counting 100 percent of the emissions of any project against the GHG emissions cap, regardless of OPIC's level of participation. Even a one percent (or, theoretically, one dollar) investment means that the entire emissions from the project are applied against the cap. This has resulted in the effect of reducing incentives for OPIC to crowd-in other capital. OPIC can only justify internally making an investment if the size of its particular stake is large enough relative to the emissions counted. Because consortia of public and private investors finance most large energy projects, this has created a perverse dynamic for OPIC. For example, in a hypothetical \$1 billion power plant, OPIC might participate at \$200 million, but at \$100 million, the internal calculation forces a withdrawal because of the relative emissions scoring. In practice, this leads to the unusual situation of an agency only able to invest if others withdraw—precisely the opposite of the leverage OPIC is supposed to encourage.
- *No net emissions on refurbishments.* The OPIC cap calculates only gross emissions for each project and does not take into account any current emissions. Consequently, if

an American company replaced an old turbine with a newer cleaner technology, thus reducing net emissions, all emissions for the plant count against the cap. This is a clear disincentive to refurbish old plants, even if it would be economically and environmentally beneficial.

- *Reservation squatting.* When a potential project is being considered within OPIC, staff must “reserve” its future emissions against the cap before it can be considered or developed. This can result in one or two possible projects appropriating the cap headroom and thus squelching any further project consideration. This is especially problematic since large infrastructure projects take many years to develop and frequently are delayed or canceled at a later stage. For instance, one large gas-fueled power plant in Nigeria included in Power Africa would alone utilize two years’ worth of the cap, and thus could effectively prevent nearly all other projects from being developed or considered.

The sum of these regulations and practices explains why OPIC has effectively been pushed into a near-total phase-out of fossil-fuel investments, and toward an exclusively low- or zero-carbon technology portfolio. We recognize that moving toward a 100 percent clean energy portfolio is likely a useful way to show leadership on climate change and is politically attractive, while also sending a strong signal of a U.S. commitment to expanding renewable energy markets. Indeed, OPIC’s support for renewable energy projects has quickly risen from close to zero a few years ago to \$1.2 billion in FY2012 (OPIC 2013).

However, this policy choice may not come without a direct cost to the goal of meeting the tremendous unmet demand for basic energy services in the poorest countries. Moss and Leo (2014) estimate, modeling a \$10 billion OPIC portfolio, that more than 60 million additional people in poor nations could gain access to electricity if OPIC is allowed to invest in natural gas projects and not just renewables. The difference in generation is estimated at some 38 GW, of more than three times the combined total installed capacity of the six Power Africa countries (Table 2). Admittedly, estimating full costs of energy infrastructure is notoriously difficult, but these figures provide a sense of scale.<sup>2</sup>

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<sup>2</sup> We recognize the rapidly decreasing prices in many renewable energy technologies and their significant power capacity additions globally in recent years (e.g., Bazilian et al. 2013; Kammen 2014) and the difficulties in showing good estimates of investment leveraging figures and the precise gap OPIC may be filling (Levi 2014). However, the premise of the GHG cap was that a policy mandate was required to overcome the lower prices of fossil-fuel power projects. If renewable energy prices are competitive, that should be reflected in OPIC investment decisions and thus the mandate will also be unnecessary.

**Table 2: Electricity access, capacity, demand, and natural gas**

	Access to electricity	Millions w/o access	Installed capacity (MW)	Estimated demand (MW)*		Gas production
				2010	2030	
Liberia	0.5%	3.9	200	1118	1787	Exploring for reserves
Tanzania	14.8%	38.3	840	10916	20362	Producing 30 Bcf, new discoveries estimate reserves of 28.7 Tcf
Kenya	18.1%	33.5	1700	9908	16886	Exploring, small initial discoveries
Ethiopia	23.0%	67.1	2060	18933	32828	Estimated reserves 4 Tcf, beginning to develop gas fields
Nigeria	50.3%	79.4	5900	24139	55296	Producing 1.1 Tcf, 182 Tcf proved reserves (10th largest globally)
Ghana	60.5%	9.6	1990	3241	6263	800 Bcf proved reserves, planning to build pipeline

*Sources: World Bank World Development Indicators, U.S. EIA*

*\*Demand is estimated using average consumption levels for Tunisia (1260 kWh per capita).*

*See Moss and Gleave (2013) for explanation of projection.*

The current policy on OPIC could also be considered at odds with current energy systems in the United States, where two-thirds of domestic power is fueled by coal or natural gas and per capita electricity consumption is at least 100 times greater than the average in Nigeria (Table 1). The OPIC policy is especially difficult to defend in the case of natural gas, as many of the same countries with major shortages of energy access are also the sites of recent natural gas discoveries. Indeed, each of the six Power Africa target countries is either producing or prospecting for natural gas (Table 2) and each is under considerable pressure to utilize such resources for domestic electricity generation.

It is also worth noting that scale matters: OPIC could reasonably be expected to make a meaningful dent in energy poverty, but there is no plausible scenario where OPIC's policy could affect global emissions. Political, economic, and developmental concerns all suggest that finding ways to alter the cap in the short-term without undermining investments in renewable energy technology for the long-term would be desirable. This is especially relevant to policy debates now because the FY14 budget legislation that lifted the GHG cap on OPIC expires September 30, 2014. Some kind of long-term compromise that would provide clarity on thus makes sense for an agency that is supposed to make long-term infrastructure investments.

## **5. Possible win-win options for OPIC and natural gas**

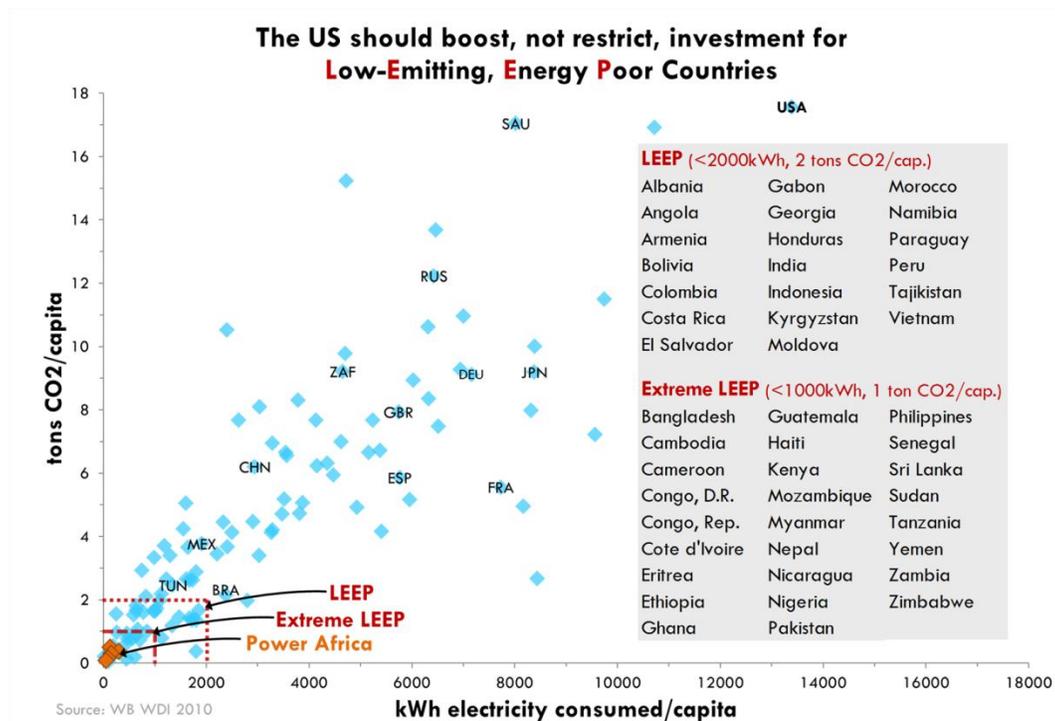
What changes might represent a continued refinement of investment policy that balances expanded electricity access with a mix of generation technologies in poor countries and remain consistent with global environmental goals? How can investment rules ensure country-driven development choices? What about OPIC's activities in countries where renewable energy options are not feasible in the short-term at large scale? How can we

emphasize the powerful changes made in OPIC's investment portfolio without entirely sacrificing flexibility? Possible approaches include:

- *Minimum efficiency threshold (a simple unabated coal ban).* If coal is the primary concern, OPIC could be prevented from participating in any project that did not generate electricity above a generation/emissions ratio that would still allow efficient natural gas (or coal with carbon capture and storage). For instance, the Ex-Im Bank threshold for high intensity projects is 500 grams CO<sub>2</sub>/kWh<sup>3</sup> under its new standards (US Ex-Im Bank 2013). Projects could simply be approved if they met this (or another similar) threshold.
- *Income exemption.* Projects in very low-income countries would not be bound by the cap. This is consistent with the current approach by multilateral development banks that treats IDA-eligible (GNI per capita less than \$1,205 for 2014) countries differently. There is also precedent within the U.S. Government and the Millennium Challenge Corporation uses income categories while the U.S. Ex-Im Bank carbon policy exempts a specific list of low-income countries using World Bank income classifications. This is also the approach used in the 2014 appropriations legislation, whereby IDA-eligible countries are exempted (until September 2014).
- *Emissions exemption.* Projects in very low-emitting countries would not be bound by the cap over some time period. This would be consistent with the idea of a “decent living emissions level” (Rao and Baer 2012).
- *Combined thresholds approach.* An exemption from the OPIC cap could require multiple thresholds, such as intensity thresholds for projects and country thresholds for income, access, and /or emissions. For instance, Moss (2013) proposed an OPIC cap exemption for non-coal projects in any country below 5% of U.S. per capita income and 5% per capita CO<sub>2</sub> emissions. Another similar option would be to create a new country category, such as a “low-emitting energy-poor” country based on thresholds for per capita emissions and energy consumption (Figure 2). This approach might also be designed to incentivize both upstream (plant level) and downstream (consumer level) efficiency targets.
- *Political compromise.* The previous proposals are all based on technical thresholds designed to allow OPIC to participate in energy generation expansion projects where it is needed most and to also meet global environmental goals. However, policy change is rarely a technical exercise; rather it is more often a political give-and-take. The outlines of such a proposal might instead have some combination of: regional limitation (e.g., Africa only), fuel-specific (e.g., no coal), term-limited (e.g., ten years), include a portfolio limit (e.g., no more than 50% of new OPIC commitments in any one year), and a renewables floor (e.g., specific allocation target for low-carbon projects).

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<sup>3</sup> Or see new proposed regulation by the U.S. EPA for new power plants. e.g., 9/20/13 Press Release: “EPA Proposes Carbon Pollution Standards for New Power Plants.”



**Figure 2:** Low-Emitting Energy Poor Countries: Per capita emissions and electricity consumption

## 6. Conclusion

We have discussed aspects of the balance between energy access and climate goals as they exist in the current international development dialogue. There are clearly no easy answers here. Trade-offs will have to be considered and compromises made, especially in the short-term. This paper emphasizes the importance of bringing discussion of those trade-offs out into the open. This will certainly help improve decision-making, and also the design and implementation of sustainable investments. Both issues—climate change and access to energy—will require heroic efforts and well directed funding. Identifying those pathways that best serve both goals will require making sound value judgments and attempting the difficult task of optimizing for multiple objectives. In these cases, relying on the input and guidance of local communities is almost always a necessity.

By focusing on the rules of investment for OPIC, a key player in the U.S. Government’s efforts to increase global energy access, and one where some very progressive changes have been made to investment rules, we hope to encourage a pragmatic discussion about the tools and resources that can be used to promote development. We have provided a number of potential approaches that differ from current rules, and may provide development finance institutions with additional flexibility to invest in the energy sector without jeopardizing global environmental goals. In the end, OPIC is only one institution among many, and thus there are other sources of funding. Still, ensuring optimal investment rules for the limited amount of development finance that exists is almost certainly a constructive step forward.

## References

- African Development Bank (AfDB), 2013, *Annual Report 2012*.
- African Union, 2012, “Declaration on the Programme for Infrastructure Development in Africa,” January, Addis Ababa, Ethiopia.
- A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*, 2013, The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. UN.
- Bazilian, M. Hobbs, B., Blyth, W., MacGill, I., and Howells, M., 2011, Interactions between Energy Security and Climate Change: A focus on developing countries. *Energy Policy*. Vol. 39 (6).
- Bazilian, M., and Pielke, R., 2013, “Raising aspirations for energy access,” *Issues in Science and Technology*.
- Bazilian, M. Onyeji, I. Liebreich, M., Gielen, D., Arent, D., Landfear, D., 2013, Reconsidering the economics of photovoltaic energy generation, *Renewable Energy*.
- Ballesteros and Nagle, 2011, “World Bank energy strategy must address energy poverty and climate change,” WRI. Washington DC.
- Bossard, P., 2014, “Congress takes landmark decision for rivers and rights,” *Huffington Post*, January 17.
- Statistical Review of World Energy, <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy-2013.html>
- Consolidated Appropriations Act, 2014.
- Consolidated Appropriations Act, 2010.
- Eberhard, A., Rosnes, O., Shkaratan, M. and Haakon, V., 2011, *Africa's Power Infrastructure: Investment, Integration, Efficiency*, World Bank.
- Foster, V. and Briceño-Garmendia, C., 2010, “Africa’s Infrastructure: A Time for Transformation,” World Bank.
- GAVI Alliance, 2012, *National Ownership of Innovative Supply Chain Technologies*, Partners Forum 2012.
- Howells, M., Hermann, S., Welsch, M., Bazilian, M., Segerstrom, R., Alfstad, T., Gielen, D., Rogner, H., Fischer, G., Van Velthuisen, H., Wiberg, D., et al., 2013, “Integrated analysis of climate change, land-use, energy and water strategies,” *Nature Climate Change*, 3,621–626.
- International Energy Agency (IEA), 2011, World Energy Outlook.
- Kammen, D., 2014, “Why You Don’t Need Fossil Fuel to Fight Poverty,” The Great Energy Challenge blog, National Geographic, February 24.  
<http://energyblog.nationalgeographic.com/2014/02/24/why-you-dont-need-fossil-fuel-to-fight-poverty-clean-energy-does-it-better/>
- Leo, B., 2013, “Is Anyone Listening? Does US Foreign Assistance Target People's Most Pressing Concerns?” CGD Working Paper, Center for Global Development.
- Lattanzio, R. K., 2013, “The World Bank Group Energy Sector Strategy,” Congressional Research Service.
- Levi, M., 2014, “Is U.S. Fossil Fuel Policy Keeping Millions Poor?” Energy Security and Climate blog, Council on Foreign Relations, February 10.  
<http://blogs.cfr.org/levi/2014/02/10/is-u-s-fossil-fuel-policy-keeping-millions-poor/>

- Lim S.S et al., 2012, “A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010,” *Lancet*, 380: 2224-60.
- Mallaby, S., 2004, *The World's Banker*, Penguin.
- McCarthy, J. J. (Ed.), 2001, *Climate change 2001: impacts, adaptation, and vulnerability: contribution of Working Group II to the third assessment report of the Intergovernmental Panel on Climate Change*. Cambridge University Press.
- Modi, V., McDade, S., Lallement, D., and Saghir, J., 2006, *Energy and the Millennium Development Goals*. New York : Energy Sector Management Assistance Programme, United Nations Development Programme, UN Millennium Project, and World Bank.
- Moran, T. H, 2003, *Reforming OPIC for the 21<sup>st</sup> Century*. Institute of International Economics.
- Morris, S. and Pizer, B., 2013, “Thinking Through When the World Bank Should Fund Coal Projects.” CGD Essay, Center for Global Development, July.
- Morris, S., 2014, “Obama Administration: “Power Africa!” Congress: “But Forget about Hydro.”” CGD blog.
- Moss, T. and Leo, B., 2014, “Maximizing access to energy: Estimates of access and generation for OPIC’s portfolio,” CGD paper.
- Moss, T. and Gleave, M., 2013, How Much Power Does Power Africa Really Need? CGD blog. <http://www.cgdev.org/blog/how-much-power-does-power-africa-really-need>
- Moss, T., 2012, “A Policy Tweak to Help Bring Lights to 700 Million People Stuck in the Dark (Without Baking the Planet).” *CGD*, August 30.  
<http://www.cgdev.org/blog/policy-tweak-help-bring-lights-700-million-people-stuck-dark-without-baking-planet> .
- Milbank, D., Blustein, P. 2002. White House Aided Enron is Dispute. Washington Post.
- OPIC, 2014, Current OPIC Projects, accessed January 7, 2014. <http://www.opic.gov/opic-action/current-opic-projects>.
- OPIC, 2013, “OPIC Announces a Record Year,” November 14.
- OPIC, 2012. *Annual Report 2012*,  
[http://www.opic.gov/sites/default/files/files/OPIC\\_2012\\_Final.pdf](http://www.opic.gov/sites/default/files/files/OPIC_2012_Final.pdf)
- Parmesan, C., and Yohe, G., 2003, “A globally coherent fingerprint of climate change impacts across natural systems,” *Nature*, 421(6918), 37-42.
- Pielke, Jr. R., 2010, *The Climate Fix*, Basic Books.
- Practical Action, 2013, *Poor People’s Energy Outlook (PPEO)*.  
<http://practicalaction.org/ppeo2013>.
- Ramachandran V., Gelb, A., and Shah, M. K, 2009, *Africa's Private Sector: What's Wrong with the Business Environment and What to Do About It*, Center for Global Development.
- Rao, N. D., and Baer, P., 2012, “Decent Living’ Emissions: A Conceptual Framework,” *Sustainability* 4, no. 12: 656–681.
- Stern, N., 2006, “Review on the economics of climate change,” *London HM Treasury*.
- US ExIm Bank, 2013, “Supplemental Guidelines for High Carbon Intensity Projects.” December 12.  
<http://www.exim.gov/newsandevents/releases/2013/SUPPLEMENTAL-GUIDELINES-FOR-HIGH-CARBON-INTENSITY-PROJECTS.cfm>
- US Treasury, March 20, 2014, “World Bank Inga 3 Bass Chute (BC) and Midsized Hydropower Development Technical Assistance (TA) Project, U.S. Position.”

- <http://www.treasury.gov/resource-center/international/development-banks/Documents/Inga.pdf>
- US Treasury, October 29, 2013, "U.S. Takes A Significant Step Toward A Clean Energy Future." <http://www.treasury.gov/press-center/press-releases/Pages/jl2195.aspx>
- UN Energy, 2005, *The Energy Challenge for Achieving the Millennium Development Goals*.
- UNDP, 2009, National Energy Access Plans.
- White House, June 30, 2013, "Fact Sheet: Power Africa." Office of the Press Secretary. <http://www.whitehouse.gov/the-press-office/2013/06/30/fact-sheet-power-africa>.
- White House, June 25, 2013, "Remarks by the President on Climate Change." Office of the Press Secretary. <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change>.
- World Bank, 2014a, "Fact Sheet: The World Bank and Energy in Africa", accessed March 27, 2014: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21935594~pagePK:146736~piPK:146830~theSitePK:258644,00.html>
- World Bank, 2014b, "World Bank Group Supports DRC with Technical Assistance for Preparation of Inga 3 BC Hydropower Development," <http://www.worldbank.org/en/news/press-release/2014/03/20/world-bank-group-supports-drc-with-technical-assistance-for-preparation-of-inga-3-bc-hydropower-development>
- World Bank, 2013, *Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector*. <http://www.worldbank.org/content/dam/Worldbank/document/SDN/energy-secm2013-0281-2.pdf>
- World Bank, 2012b, "DR Congo: Inga 3 Development Technical Assistance Loan (P131027)," World Bank.
- World Bank, 2012a, Annual Report 2012, data accessed Oct 22, 2013: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTENERGY2/0,,contentMDK:21651596~menuPK:4140787~pagePK:210058~piPK:210062~theSitePK:4114200,00.html>