

**CHANGING VENUE OF INTERNATIONAL  
GOVERNANCE AND FINANCE: EXERCISING LEGAL  
CONTROL OVER THE \$100 BILLION PER YEAR  
CLIMATE FUND?**

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**ABSTRACT - PROF. STEVEN FERREY**

Developed countries have committed to the largest sustained international transfer of wealth in history: an additional \$100 billion per year of foreign assistance continuing in perpetuity under the Copenhagen Accord to deal with global warming in developing countries. A legal microscope has been focused by various international parties to scrutinize these funds. These trillions of dollars of international finance must be applied correctly, or the entire globe warms, and humanity suffers.

Developing countries demand that these funds be administered through new organizations with control by recipient, rather than donor, nations, with fewer

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administrative requirements and monitoring of recipient expenditure decisions. These critical international structural decisions map the future of evolving twenty-first century international law and regulation.

Yet the conflict over the appropriate institutional mechanism to facilitate and manage these immense public and private capital flows is being addressed now as if it were a conventional struggle over generic foreign aid. An examination proves that it is clearly much more. The future environment of the entire world is dependent on dozens of countries making the correct significant GHG emissions reductions; the failure of any one country imposes irreversible magnified burdens on all. There is now truly a global metric.

Successful investment by all countries must be accomplished immediately. Chief NASA climatologist James Hansen gives the world less than a decade to significantly slow or halt the increase of greenhouse gas emissions to inhibit irreversible climate change.<sup>2</sup> Hansen notes that merely waiting until 2018 to stop the growth of GHG emissions may make it impossible to avoid catastrophic effects of warming.<sup>3</sup> If these financial transfers, the funding engine for arresting climate change, are misapplied, the entire world bears the burden of global warming.

This article takes on the legal issues in dispute and examines how countries will sculpt the new post-Copenhagen/post-Cancun international structure for climate governance for this century:

- Analyzing financial commitments under the 2009 Copenhagen Accord and normalizing data

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<sup>2</sup> Jim Hansen, *The Threat to the Planet*, N.Y. REV. BOOKS July 13, 2006, at 12, available at [www.nybooks.com/articles/19131](http://www.nybooks.com/articles/19131); James Hansen et al., *Global Temperature Change*, 103 PROC. NAT'L ACAD. SCI. 14288, 14293 (2006).

<sup>3</sup> Robin Chase, Op-Ed., *Get Real on Global Warming Goals*, BOSTON GLOBE, Apr. 22, 2008, at A15.

yields an unexpected comparative result for different developed and developing countries.

- Examining the regulatory advantages and disadvantages of two primary international organizational options, bitterly championed or opposed by donor and recipient nations, respectively, for administering this unprecedented new inflow of international funds.
- Comparing in detail the governance options of each of the international agencies and multilateral development banks to effectively administer the new climate fund.
- Ultimately, identifying the “true north” for international organizations to align and administer climate funds given scientific and policy imperatives.

To implement global warming control, massive transfer of financial resources between developed and developing countries has been already committed, by developed countries in the most recent Conference of the Parties in Durban in December 2011. The metric for international governance and structure for climate control is different when examined under the microscope. The urgency of this issue, its magnitude, and its irreversibility, require that international law get this right from the start. This is not an issue on which there is time to experiment or delay at the cost of the Planet.

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## I. THE FINANCIAL COMMITMENT; THE INSTITUTIONAL DILEMMA

### A. THE POLICY CONUNDRUM

Several developed countries have committed to the largest sustained international transfer of wealth in history: a commitment of an additional \$100 billion per year of foreign aid continuing in perpetuity for the explicit purpose of dealing with global climate change.<sup>4</sup> Since the current warming trend is irreversible and will last over a period of 1000 years or more,<sup>5</sup> this constitutes trillions of dollars of committed additional cross-national assistance from a few wealthier developed nations to the bulk of countries. It is of unprecedented dimension, scale, and longevity.

Under a virtual electron microscope<sup>6</sup> of international scrutiny, form is everything. Here is the pending question on form: Developing nations want these funds to be administered through new organizations set up with the dominant governing board control by recipient nations, in which there would be fewer administrative requirements and monitoring

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<sup>4</sup> U.N. Secretary-General, Report of the Secretary-General’s High-Level Advisory Group on Climate Change Financing 2 (Nov. 5, 2010), [http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF\\_reports/AGF%20Report.pdf](http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF_reports/AGF%20Report.pdf) [hereinafter U.N. Secretary-General].

<sup>5</sup> See Susan Solomon et al., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, 106 PROC. NAT’L ACAD. SCI. 1704, 1704 (2009).

<sup>6</sup> Transmission electron microscopy (TEM) passes a beam of electrons through a specimen, to form an image from the interaction of the electrons transmitted through the specimen, imaging at tens of thousands of times finer detail in resolution due to the short wavelength of electrons. See *The Transmission Electron Microscope*, NOBELPRIZE.ORG, <http://www.nobelprize.org/educational/physics/microscopes/tem/index.html> (last visited Apr. 18, 2012).

of recipient decisions.<sup>7</sup> The donor countries prefer administration by the traditional multilateral international organizations, in which there would be traditional monitoring of recipient fund use and accountability, such as the World Bank, where the boards have a slight majority of donor countries.<sup>8</sup> An international battle over the administration of trillions of dollars of discretionary funds is not merely a fight over funds. In a larger dimension, it maps the future of twenty-first century international law and regulation.

Money is not abundant in public international finance, with financial recessions and emergencies in the United States, the European Union and Japan.<sup>9</sup> New climate change financing will need to come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance, and the scaling up of existing sources and increased private flows. Commitments to domestic mitigation of warming “and the introduction of new public instruments based on carbon pricing” will be important for mobilizing adequate climate financing.<sup>10</sup>

Yet the conflict over the appropriate institutional mechanism to facilitate and manage these public and private capital flows is being contested as if it were a conventional struggle over generic foreign aid: with disputes over whether the recipient or the donor controls its use, and whether the donor country must be accountable or subject to international monitoring. The entire world is dependent on dozens of countries making significant and successful greenhouse gas (GHG) emissions reductions; the failure of any one country to follow through has irreversible impacts on all.<sup>11</sup> There is a truly global metric, and it must be accomplished immediately. Chief NASA climatologist James Hansen gives the world less than a decade to significantly slow or halt the increase of GHG emissions if humans intend to make meaningful

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<sup>7</sup> See *infra* Section III for discussion of developing country preferences on international administration of these funds.

<sup>8</sup> See discussion *infra* Section III; see *infra* Section IV for discussion of international agencies administering climate funds.

<sup>9</sup> See Rishaad Salamat & Bei Hu, *BlackRock's Fink Says Europe's Financial Problems Go 'Way Beyond' Greece*, BLOOMBERG, May 30, 2011, <http://www.bloomberg.com/news/2011-05-31/blackrock-s-fink-says-europe-s-financial-problems-go-way-beyond-greece.html>; see *Political Roots in U.S. Economic Crisis*, N.Y. TIMES, Aug. 5, 2011, <http://www.nytimes.com/2011/08/06/opinion/americas-economic-crisis-has-political-roots.html>; see also Martin Fackler, *In Japan, Financial Crisis Is Just a Ripple*, N.Y. TIMES, Sept. 19, 2008, <http://www.nytimes.com/2008/09/20/business/worldbusiness/20yen.html>.

<sup>10</sup> U.N. Secretary-General, *supra* note 4, at 5.

<sup>11</sup> See *infra* Section V.

headway against irreversible climate change.<sup>12</sup> Hansen notes that merely waiting until 2018 to stop the “growth of greenhouse gas emissions” may make it near impossible to avoid catastrophic effects of warming.<sup>13</sup> According to Dr. John Holdren, Director of the White House Office of Science and Technology Policy, if United States GHG emissions “plateau in 2015,” the world would already have reduced its chances of avoiding climate catastrophes by 50 percent.<sup>14</sup>

As Section V of this article explores, the battle against global warming worldwide can only be successful if developing countries make immediate fundamental changes in their electrified economies.<sup>15</sup> The newly pledged massive financial transfers are the engine for developing country climate change mitigation. If they are misapplied, the entire world economy bears the warming burden. Therefore, unlike most other kinds of foreign assistance, accountability and control of how this assistance is used is of unusual importance.

All interests need to get it right or there are grave consequences for all nations. A misstep by any nation equally impacts all nations with warming consequences. An effective solution cannot be centralized; it must be achieved in every country according to the nation’s particular culture, regulatory system, and unique situation. An institution interfaced and credible with all nations in the global commons is required. This article examines how these needs will sculpt the structure of international law and structure after the Copenhagen Accord and Durban Conference:

- The balance of this Section I compares and measures current funding commitments of nations to major international organizations and programs
- Section II considers the disconnects in financial commitments in the 2009 Copenhagen Accord funding climate change mitigation in developing countries, and normalizes the analysis of the shares undertaken by different donor countries
- Section III probes and critiques the two primary international options advanced by donor and recipient countries, respectively, for managing this unprecedented amount of international aid for climate control—through either a conventional mechanism or a recipient-based mechanism modeled on the Climate Impact Fund

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<sup>12</sup> Hansen, *supra* note 2, at 12; Hansen et al., *supra* note 2, at 14293.

<sup>13</sup> Chase, *supra* note 3, at A15.

<sup>14</sup> *Id.*

<sup>15</sup> *See infra* Section V.

- Section IV compares in detail the governance and background of each existing international agency and multilateral development bank, as well as new mechanisms, as candidates for effective administration of the new climate funds.
- Section V observes a compass of true direction for climate fund legal structure and administration.
- Section VI concludes with a look at the most recent developments in Durban. Immediate action is required to address climate change before the impact is irreversible, but many details still need to be settled in order for wide-scale implementation to take place.

## **B. GLOBAL WARMING IN THE CONTEXT OF EXISTING INTERNATIONAL COMMITMENTS**

In December 2009, at the United Nations Climate Change Conference in Copenhagen, industrialized countries set a goal of mobilizing \$100 billion per year by 2020 to support mitigation and adaptation activities in developing countries.<sup>16</sup> The commitment made by developed countries was to provide resources approaching \$30 billion USD in “fast start” climate finance for developing countries during the period 2010-2012 to help meet the adaptation and mitigation needs.<sup>17</sup> This served as an immediate source of funding.<sup>18</sup> Supposedly, these funds would be in addition to traditional aid flowing from wealthier to developing countries, thus signifying a substantial commitment.

For context, the total annual UN budget is \$1.9 billion annually;<sup>19</sup> added peacekeeping operations raise annual expenditures to \$15 billion.<sup>20</sup> About half of this latter amount comes from mandatory UN assessments, and the other half from voluntary donations by member nations.<sup>21</sup> The assessments are based on gross national product (GNP);

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<sup>16</sup> U.N. Secretary-General, *supra* note 4, at 2. This Advisory Group was established to study potential sources of revenue for financing mitigation and adaptation activities in developing countries. *Id.*

<sup>17</sup> *Id.* ¶ 6.

<sup>18</sup> Over the period 2010–2012, developed countries have committed to provide resources approaching US\$30 billion, most of which will probably be direct budget contributions. *Id.* ¶ 82.

<sup>19</sup> U.N., Chapter 5: Is the United Nations Good Value for the Money?, <http://www.un.org/geninfo/ir/index.asp?id=150> (excluding expenditures of the World Bank and International Monetary Fund) (last visited Apr. 18, 2011).

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

richer countries pay more than poorer countries.<sup>22</sup> The top ten most-assessed countries by the United Nations are set forth in Table 1.

**TABLE 1: TOP 10 MEMBER STATES IN ASSESSMENT FOR THE UN REGULAR BUDGET, 2005**

Assessment rates/amount		
Country	(per cent)	(\$ million USD)
United States	22.00	362.7
Japan	19.47	279.6
Germany	8.66	124.4
United Kingdom	6.13	88.0
France	6.03	86.6
Italy	4.89	70.2
Canada	2.81	40.4
Spain	2.52	36.2
China	2.05	29.5
Mexico	1.88	27.0

The top percentage share for UN contributions to the administrative budget is capped at 22 percent.<sup>23</sup> These top ten contributors, displayed in Table 1, pay 76.44 percent of the regular UN

<sup>22</sup> *Id.* There are some exceptions, for example, Brazil pays more than Liechtenstein even though Brazil's per capita income is much lower, because as a larger country its total GNP is much higher. *Id.*

<sup>23</sup> *Id.* Beginning in 1974, the UN Assembly fixed a maximum rate of 25 percent for any contributor, which was later reduced to 22 percent as of 2001. This ceiling benefits only the United States, which has approximately 27 percent of world GNP. "Without this ceiling, its share would be even higher since, like other countries with high per capita income, it would have been required to contribute to the cost of reductions for the countries with low per capita income." *Id.*

budget, although representing only 5 percent of the world nations.<sup>24</sup> Japan contributes 19.5 percent; while the twenty-five “members of the European Union together contribute some 37.5 percent of the budget.”<sup>25</sup>

The annual operating budget of the World Bank (excluding loans and grants) is approximately \$1.3 billion.<sup>26</sup> The annual budget of the IMF, with a smaller staff, is about \$1 billion annually for administration, in addition to its lending.<sup>27</sup> Both groups have 188 member countries,<sup>28</sup> which includes most of the world’s countries. These amounts of international aid compare to other expenditures:<sup>29</sup>

- The administrative budget of the twenty-five country European Community, 2004: \$7.3 billion
- Metropolitan Tokyo’s Fire Department annual budget: \$2.2 billion
- The World Health Organization (WHO) annual budget: \$440 million.

So by any measure, \$100 billion of new annual financial assistance, on an ongoing indefinite basis, is a significant amount of additional money. There are now battles along two dimensions. First, as for managerial control of carbon funds, which organization will administer this huge carbon fund? Second, regarding distributional control, will donors or donees, sources or recipients, control the expenditure of funds? Both questions are becoming a major legal and regulatory conundrum, as developed and developing countries differ on

<sup>24</sup> Dr. Mary M. KcKenzie, *The United Nations: Staffing and Cost* 9 (July 2008), [http://www.unasd.org/UN Staffing and Cost.pdf](http://www.unasd.org/UN%20Staffing%20and%20Cost.pdf). Matt Rosenberg, *The Number of Countries in the World: By Most Accounts, There are 196 Countries in the World*, ABOUT.COM: GEOGRAPHY, <http://geography.about.com/cs/countries/a/numbercountries.htm>(last updated Mar. 23, 2012). There are 193 members of the UN, among 196 countries in the world. Taiwan, Puerto Rico, Bermuda, Greenland, and Palestine are not recognized as countries.

<sup>25</sup> U.N., Chapter 5: Is the United Nations Good Value for the Money?, <http://www.un.org/geninfo/ir/index.asp?id=150> (excluding expenditures of the World Bank and International Monetary Fund) (last visited Apr. 18, 2011).

<sup>26</sup> See World Bank, World Bank Budget Increase (2010), <http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/ORGANIZATION/EXTPRESIDENT2007/EXTPASTPRESIDENTS/PRESIDENTEXTERNAL/0,,contentMDK:20095591~menuPK:235080~pagePK:159837~piPK:159808~theSitePK:227585,00.html>.

<sup>27</sup> See Int’l Monetary Fund [IMF], IMF Annual Report 2010, at 59 tbl.5.1 (2010), [http://www.imf.org/external/pubs/ft/ar/2010/eng/pdf/ar10\\_eng.pdf](http://www.imf.org/external/pubs/ft/ar/2010/eng/pdf/ar10_eng.pdf).

<sup>28</sup> See *Factsheet – The IMF at a Glance* 1, INTERNATIONAL MONETARY FUND (Apr. 2012), <http://www.imf.org/external/np/exr/facts/glance.htm>.

<sup>29</sup> See U.N., Chapter 5: Is the United Nations Good Value for the Money?, *supra* note 19.

accountability for use of these funds to address global concerns. The first essential inquiry is to understand exactly what developed nations of the world have committed to regarding immediate fast-track reduction of GHGs – both theirs and the world's.

## II. CLIMATE CHANGE LONG-TERM INTERNATIONAL COMMITMENTS

Much of the debate highlighted above is political, reflecting basic disagreements on control and accountability between those paying the money and those receiving the assistance. There is no textbook “right” answer to this political question, but, at its core, the issue is actually scientific and regulatory, not political. To distinguish the debate from politics, a regulatory metric needs to be examined. In terms of donors and donees, who has committed exactly what regarding urgent climate change emission actions?

### A. THE COMMITMENTS IN COPENHAGEN AND CANCUN

With 191 national parties, the United Nations Framework Convention on Climate Change (UNFCCC) has near universal membership of world countries.<sup>30</sup> The Convention is the parent treaty which generated the 1997 Kyoto Protocol, which has, to date, 192 member parties.<sup>31</sup> Under the Protocol, thirty-seven states, consisting of industrialized countries and the European community, have imposed greenhouse gas (GHG) emission limitation and reduction commitments,<sup>32</sup> while the remaining 155 developing countries among the 192 signatories, including the largest GHG emitter among all nations, have non-binding generic undertakings to limit emissions.<sup>33</sup>

These international protocols are dedicated to alleviate the intensity of carbon emissions around the world. What is the relative comparative burden? There were GHG reduction pledges made by developed countries at the 1997 Kyoto Protocol,<sup>34</sup> at the 2007 Bali

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<sup>30</sup> See U.N. Framework Convention on Climate Change [UNFCCC], Status of Ratification of the Kyoto Protocol, [http://unfccc.int/kyoto\\_protocol/status\\_of\\_ratification/items/2613.php](http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php) (last visited Apr. 18, 2011).

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

Conference of the Parties (COP),<sup>35</sup> at the 2009 Copenhagen COP,<sup>36</sup> at the 2010 Cancun COP<sup>37</sup> (as well as a fast-start pledge),<sup>38</sup> and at the 2011 Durban COP.<sup>39</sup> The Copenhagen Conference of the Parties (COP-15), which took place in December 2009, was intended to establish an ambitious global climate change agreement for the post-2012 period, when the Kyoto Protocol expires.<sup>40</sup> The Conference only produced a thirteen-paragraph “political accord” which was not an official product of the meeting, and was only “noted” by the Conference because of lack of a consensus among world nations.<sup>41</sup> This comprises the regulatory fabric insulating the world against global warming.

The Copenhagen Accord marked the beginning of a new approach to international climate agreements. Previously, each round of Kyoto Protocol negotiations generally adopted a fixed-base year against which all country emissions commitments were to be measured, and participating countries then negotiated a set of reductions relative to emissions in that year.<sup>42</sup> The Accord breaks from that approach by allowing each country to choose its own base year and to express its commitment in terms other than absolute reductions in

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<sup>35</sup> COP is the Conference of the Parties to the Kyoto Protocol, an annual meeting to attempt to implement the goals of the Protocol. See Jessica Aldred, *Q&A: Bali Climate Change Conference*, THE GUARDIAN, Dec. 3, 2007, <http://www.guardian.co.uk/environment/2007/nov/30/bali.climatechange>; Conference of the Parties to the United Nations Framework Convention on Climate Change, Bali, Indon., Dec. 3–15, 2007, *Report of the Conference of the Parties – Addendum, Part Two: Action Taken by the Conference of the Parties at its Thirteenth Session*, Dec. 1/CP.13, U.N. Doc. FCCC/CP/2007/6/Add.1 (Mar. 14, 2008), available at <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3>. See *Deal Agreed in Bali Climate Talks*, THE GUARDIAN, Dec. 15, 2007, <http://www.guardian.co.uk/environment/2007/dec/15/bali.climatechange4>.

<sup>36</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change, Copenhagen, Den., Dec. 7–19, 2009, *Report of the Conference of the Parties – Addendum, Part Two: Action Taken by the Conference of the Parties at its Fifteenth Session*, Dec. 2/CP.15, U.N. Doc. FCCC/CP/2009/11/Add.1 (Mar. 30, 2010), available at <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=4>.

<sup>37</sup> See generally Jennifer Morgan et al., *Reflections on the Cancun Agreements*, WORLD RESOURCES INSTITUTE (Dec. 2010), available at [http://pdf.wri.org/reflections\\_on\\_cancun\\_agreements.pdf](http://pdf.wri.org/reflections_on_cancun_agreements.pdf).

<sup>38</sup> See Kirsten Stasio et. al, World Resources Institute [WRI], *Summary of Developed Country Fast-Start Climate Finance Pledges* (Feb. 18, 2010), [http://pdf.wri.org/climate\\_finance\\_pledges\\_2010-10-27.pdf](http://pdf.wri.org/climate_finance_pledges_2010-10-27.pdf).

<sup>39</sup> See *infra* p. 88.

<sup>40</sup> *Copenhagen Climate Change Summit 2009*, CARBON NEWS (Jan. 28, 2010) <http://carbon-news.blogspot.com/2010/01/copenhagen-climate-change-summit-2009.html>.

<sup>41</sup> See *The Copenhagen Accord: What Happened at COP15 in Copenhagen*, CARBON PLANET, <http://www.carbonplanet.com/copenhagen> (last updated Apr. 6, 2010).

<sup>42</sup> See UNFCCC, *supra* note 32.

emissions.<sup>43</sup> This flexibility promoted consensus on the regulatory concept and allowed an agreement to be reached. At the same time, however, with no common metric, it significantly complicates comparing the emissions reductions and economic efforts implicit in the commitments made by the participants.

Comparisons among countries are not straightforward because even among countries that pledge to reduce emissions from a self-chosen baseline year, those chosen baseline years vary significantly country by country. Normalizing these values is not straightforward. Also, countries differ in their metrics, for instance China and India committed to reducing their emissions per unit of gross domestic product (GDP) relative to 2005 by 40 and 20 percent, respectively. Commitments of developed countries<sup>44</sup> and developing countries<sup>45</sup> also vary.

Table 2 sets forth the 2009 Copenhagen commitments voluntarily elected by countries and reported to the UNFCCC.<sup>46</sup> These differ from the commitments to the 1997 Kyoto Protocol, which capped total emissions over a five-year period ending in 2012.<sup>47</sup> Of note, the European Union commitment of reduction increases of between 20 percent and 30 percent if “comparable emissions reductions” by other developed countries and “adequate contributions” by developing countries are forthcoming.<sup>48</sup> The base year for reductions also varies by country: the United States and Canada promised reductions of 17 percent relative to their 2005 levels, while Australia used 2000 as its baseline, and the European Union, Russia, and Japan chose a base year of 1990.<sup>49</sup>

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<sup>43</sup> See *infra* Tables 2, 4.

<sup>44</sup> Emissions commitments by Annex I countries appear in Appendix I of the Accord, formulated as economy-wide reductions in greenhouse gas emissions relative to a base year of each country’s choosing. UNFCCC, Appendix I – Quantified Economy-Wide Emissions Targets for 2020, <http://unfccc.int/home/items/5264.php>.

<sup>45</sup> Their commitments are more varied and include, for example, emissions reduction targets relative to business as usual projections, reductions in emissions per unit of gross domestic product (GDP), expansions in forest cover, and investments in energy efficiency and biofuels. See UNFCCC, Appendix II – Nationally Appropriate Mitigation Actions of Developing Country Parties, <http://unfccc.int/home/items/5265.php>.

<sup>46</sup> WARWICK J. MCKIBBIN, ADELE MORRIS & PETER J. WILCOXEN, THE HARVARD PROJECT ON INTERNATIONAL CLIMATE AGREEMENTS, DISCUSSION PAPER 10-35, COMPARING CLIMATE COMMITMENTS: A MODEL-BASED ANALYSIS OF THE COPENHAGEN ACCORD 6 (2010), available at <http://belfercenter.ksg.harvard.edu/files/McKibbin-DP-June2010-final.pdf>.

<sup>47</sup> See UNFCCC, Kyoto Protocol, *supra* note 30.

<sup>48</sup> MCKIBBIN ET AL., *supra* note 46, at 6.

<sup>49</sup> *Id.*

**TABLE 2. COMMITMENTS UNDER THE COPENHAGEN ACCORD<sup>50</sup>**

Country	Greenhouse Gas Emissions Targets for 2020	Base Year
USA	[Reduction of emissions] in the range of 17 percent in conformity with anticipated United States energy and climate legislation, recognizing that the final target will be reported to the Secretariat in light of enacted legislation.	2005
Japan	25 percent reduction, which is premised on the establishment of a fair and effective international framework in which all major economies participate and agree on ambitious targets.	1990
Australia	5 percent unconditionally; up to 15 percent or 25 percent with international action. Australia will reduce its greenhouse gas emissions by 25 percent on 2000 levels by 2020 if the world agrees to an ambitious global deal capable of stabilizing levels of greenhouse gases in the atmosphere at 450 ppm CO <sub>2</sub> -eq or lower. Australia will unconditionally reduce emissions by 5 percent below 2000 levels by 2020, and by up to 15 percent by 2020 if there is a global agreement which falls short of securing atmospheric stabilization at 450 ppm CO <sub>2</sub> -eq and under which major developing economies commit to substantially restrain emissions and advanced economies take on commitments comparable to Australia's.	2000
European Union	20 percent/30 percent; As part of a global and comprehensive agreement for the period beyond 2012, the European Union reiterates its conditional offer to move to a 30 percent reduction by 2020 compared to 1990 levels, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.	1990
Canada	17 percent, to be aligned with the final economy-wide emissions target of the United States in enacted legislation.	2005
Russia	15-25 percent; the range of the GHG emission reductions will depend on the following conditions: - Appropriate accounting of the potential of Russia's forestry in frame of contribution in meeting the obligations of the anthropogenic emissions reduction; - Undertaking by all major emitters the legally binding obligations to reduce <i>anthropogenic GHG emissions</i> .	1990
China	Increase forest coverage by forty million hectares and forest stock volume by 1.3 billion cubic meters	2005
India	Reduce the emissions intensity of its GDP by 20-25 percent by 2020 in comparison to the 2005 level.	2005

<sup>50</sup> *Id.* at 6.

There is no agreement even among developed countries.<sup>51</sup> In context, China and India committed to reducing by 40 and 20 percent, respectively, their emissions per unit of national GDP.<sup>52</sup> Recent work published by the Brookings Institution compares agreements reached by world nations in the Copenhagen Accord in December 2009.<sup>53</sup> In modeling undertaken by the Brookings Institution, the United States, Japan, Australia, China, India, and Brazil are each represented by a self-contained single-modeled country; the rest of the world is aggregated into Western Europe; the rest of the Organisation Economic Co-operation and Development (ROECD), not including Mexico and Korea; Eastern Europe and the former Soviet Union (EEFSU); OPEC oil-exporting economies; and all other developing countries (LDC), as set forth in Table 3.<sup>54</sup>

**TABLE 3. REGIONS IN THE BROOKINGS MODEL<sup>55</sup>**

<b>Region Name</b>	<b>Region Description</b>
<b>USA</b>	United States
<b>Japan</b>	Japan
<b>Australia</b>	Australia
<b>Europe</b>	Western Europe
<b>ROECD</b>	Rest of the OECD, i.e. Canada and New Zealand
<b>China</b>	China
<b>India</b>	India
<b>EEFSU</b>	Eastern Europe and the former Soviet Union
<b>Brazil</b>	Brazil
<b>LDC</b>	Other Developing Countries
<b>OPEC</b>	Oil Exporting Developing Countries

<sup>51</sup> *Id.* at 7.

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> *Id.* at 10.

<sup>55</sup> *Id.* at 11.

There are forty-one designated “Annex I” countries (including 27 members of the European Union, plus eight other non-European Union nations in Europe, and Australia, Canada, Japan, New Zealand, and Turkey),<sup>56</sup> which are the only ones with carbon emission reduction amounts. The United States is an Annex I country that has not ratified the Protocol, and Canada has recently withdrawn.<sup>57</sup> The 39 covered Annex I countries subject to Kyoto Protocol carbon emission reductions represent approximately 20 percent of world countries and less than 40 percent of world carbon sources.<sup>58</sup> The largest CO<sub>2</sub> emitter in the world, China, is not covered as an Annex I country, as well as more than 150 other nations which joined the Kyoto Protocol<sup>59</sup> and a few other nations which never joined. In 1997, the Kyoto Protocol assigned to each Annex I country a quantity of GHG emissions for the period 2008 to 2012.<sup>60</sup> Developing nations resisted efforts to include developing countries in binding obligations and opposed encouraging any voluntary commitments to GHG reduction.<sup>61</sup>

Table 4 illustrates the Copenhagen Accord emissions commitments for 2020 transposed to common historical base years (1990, 2000, and 2005) and relative to emissions in the 2020 baseline scenario, or business-as-usual (BAU) emissions.<sup>62</sup> Table 5 ranks each regions’ commitments, normalized to equivalent baseline values, in order of the greatest percent emissions reductions.<sup>63</sup> The bold boxes in Table 5 also indicates which base year was chosen by the bold country(ies).

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<sup>56</sup> See UNFCCC, List of Annex I Parties to the Convention, [http://unfccc.int/parties\\_and\\_observers/parties/annex\\_i/items/2774.php](http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php).

<sup>57</sup> *Canada pulls out of Kyoto Protocol on Climate Change*, USA TODAY, Dec. 12, 2011, available at <http://www.usatoday.com/news/world/story/2011-12-12/canada-climate-change/51842930/1>.

<sup>58</sup> See Jon Hovi, Tora Skodvin & Steinar Andresen, *The Persistence of the Kyoto Protocol: Why Other Annex I Countries Move on Without the United States*, 3 GLOBAL ENVTL. POLITICS, Nov. 2003, at 1, 2.

<sup>59</sup> UNFCCC, List of Annex I Parties to the Convention, *supra* note 56.

<sup>60</sup> See UNFCCC, Kyoto Protocol, *supra* note 30.

<sup>61</sup> Paul G. Harris, *Common but Differentiated Responsibility: The Kyoto Protocol and United States Policy*, 7 N.Y.U. ENVTL. L.J. 27, 34 (1999).

<sup>62</sup> “For China and India, commitments are reported using the emissions levels in 2020 that produces the targeted reductions in emissions per unit real GDP. For the regions without Accord targets (Brazil, LDC, and OPEC), emissions in the policy scenario are measured against their historical emissions and BAU projections for 2020.” MCKIBBIN ET AL., *supra* note 46, at 17.

<sup>63</sup> *Id.* at 19. Bold cells in the table differentiate the commitment formulas chosen by each country for its Copenhagen Accord commitment.

**TABLE 4. EMISSIONS IN 2020 THAT RESULT FROM COPENHAGEN ACCORD<sup>64</sup>**

Country	2020 Target as a Percent Change in Emissions in 2020 Relative To Emissions in the Indicated Year			BAU in 2020
	1990	2000	2005	
USA	-1	-15	-17	-33
Japan	-25	-37	-39	-48
Australia	30	-5	-18	-35
Europe	-20	-24	-27	-36
ROECD	10	-7	-17	-25
China	496	350	146	-22
India	346	159	120	0.4
EEFSU	-15	28	18	-1.3
Brazil	168	73	61	0.6
LDC	211	119	85	0.9
OPEC	180	105	60	1.3
World	90	70	43	-17.5

**TABLE 5. RANKING OF PARTICIPANTS BY REDUCTION OF EMISSIONS LEVELS**

Rank	Change Relative to 1990 Base Year Emissions	Change Relative to 2000 Base Year Emissions	Change Relative to 2005 Base Year Emissions	Change from 2020 BAU Emissions
<b>1</b>	<b>Japan</b>	Japan	Japan	Japan
<b>2</b>	Europe	Europe	Europe	Europe
<b>3</b>	<b>EEFSU</b>	USA	Australia	Australia

<sup>64</sup> *Id.* at 18.

<b>4</b>	USA	ROECD	<b>USA/ROECD</b>	USA
<b>5</b>	ROECD	<b>Australia</b>		ROECD
<b>6</b>	Australia	EEFSU	EEFSU	China
<b>7</b>	India	India	India	EEFSU
<b>8</b>	China	China	China	India

What these various comparative tables, and particularly Table 5, indicate is that the United States does relatively well on a comparative and absolute basis in its Copenhagen Accord commitment. The United States is in the top half of countries, regardless of what base year is used for comparison. “Western Europe, Australia, and the United States committed to similar departures from BAU with projected emissions declines by 2020 of 36, 35, and 33 percent respectively.”<sup>65</sup> China and India are in last position, along with the former Eastern Soviet Union countries.<sup>66</sup> Japan is clearly committing to the greatest reductions from business-as-usual, however its long-term recession accounts for much of its change of business-as-usual since 1990.<sup>67</sup> Europe is comparatively constant.<sup>68</sup>

The different baselines and commitment levels illustrated in the Tables above also illustrate the complexity of carbon regulations to implement GHG control. Moreover, not every country has positioned itself for maximum compliance under the new flexibility of the Copenhagen Accord: The bold cells in Table 5 illustrate that not every country chose the approach that maximizes its relative position or rank.<sup>69</sup> For example, the United States would have ranked higher had it chosen a 2000 base year instead of 2005, and Australia would have ranked higher had it chosen a 2005 base year rather than 2000.<sup>70</sup>

Table 6 recasts Table 4 data in terms of emissions per unit of GDP, or emissions intensity.<sup>71</sup> Column 4 of Table 6 shows that

<sup>65</sup> *Id.* at 20; *see supra* Table 4.

<sup>66</sup> MCKIBBEN ET AL., *supra* note 46, at 20; *see supra* Table 5.

<sup>67</sup> MCKIBBEN ET AL., *supra* note 46, at 20; *see supra* Tables 4, 5.

<sup>68</sup> *See supra* Table 4.

<sup>69</sup> *See supra* Table 5.

<sup>70</sup> *Id.*

<sup>71</sup> *See infra* Table 6.

emissions intensity declines from 2005 to 2020 in all regions in the baseline, with the greatest decline of 37 percent in Brazil.<sup>72</sup>

**TABLE 6. COPENHAGEN ACCORD EMISSIONS COMMITMENTS IN INTENSITY TERMS<sup>73</sup>**

Region	Emissions Intensity in 2005 (MMTCO2/\$2006GDP)	Baseline Emissions Intensity in 2020 (MMTCO2/\$2006GDP)	Emissions Intensity in 2020 under Accord	Percent Change in Intensity from 2005 to 2020 in Baseline	Percent change in intensity from 2005 to 2020 under Copenhagen Accord	Percent Change in 2020 Emissions Intensity Relative to BAU
<b>USA</b>	0.47	0.38	0.26	-18	-44	-31
<b>Japan</b>	0.28	0.27	0.15	-3	-47	-46
<b>Australia</b>	0.56	0.45	0.31	-20	-44	-30
<b>W. Europe</b>	0.27	0.21	0.14	-20	-46	-33
<b>ROECD</b>	0.53	0.38	0.30	-28	-43	-20
<b>China</b>	2.35	1.73	1.41	-26	<b>-40</b>	-18
<b>India</b>	1.40	1.13	1.12	-20	<b>-20</b>	0
<b>EEFSU</b>	1.61	1.20	1.22	-26	-25	2
<b>Brazil</b>	0.40	0.25	0.25	-37	-37	1
<b>LDC</b>	0.76	0.49	0.50	-35	-34	1
<b>OPEC</b>	1.12	0.91	0.98	-18	-12	8
<b>World</b>	0.61	0.58	0.49	-5	-19	-15

Overall, world GHG emissions relative to world GDP declines by 15 percent as a result of the Copenhagen Accord commitments.<sup>74</sup>

<sup>72</sup> *Id.*

<sup>73</sup> MCKIBBIN ET AL., *supra* note 42, at 21. “The second column in Table 6 is emissions intensity in 2020 in the baseline and the third column is the same measure under the policy scenario.” “The sixth column of Table 6 shows the percent change in intensities in the policy scenario relative to the 2020 baseline.” Boldface numbers represent commitments as articulated in the Copenhagen Accord.

<sup>74</sup> *See supra* Table 6.

Japan is undertaking the most ambitious commitment with an intensity decline of 46 percent relative to baseline by 2020.<sup>75</sup> China's intensity target results in 18 percent intensity reductions relative to baseline, similar to reductions of developed countries in the European ROECD.<sup>76</sup> Table 7 recasts Table 6 values in per capita values, to take account of the population of each region or country. Even under this measure, Japan, Western Europe, Australia and the United States lead world nations in demanding the most per citizen for climate control from business-as-usual.<sup>77</sup> With the exception of China, the developing country commitments are modest or even exacerbate GHG emissions compared to business-as-usual over the next decade.<sup>78</sup>

**TABLE 7. COPENHAGEN ACCORD EMISSIONS COMMITMENTS IN PER CAPITA TERMS<sup>79</sup>**

<b>Region</b>	<b>Emissions Per Capita in 2005</b>	<b>Emissions Per Capita in 2020 in Baseline</b>	<b>Emissions Per Capita in 2020 under Accord</b>	<b>Change in 2020 Per Capita Emissions Relative to BAU</b>
<b>USA</b>	20	22	15	- 33
<b>Japan</b>	10	12	6	- 48
<b>Australia</b>	21	23	15	- 35
<b>W. Europe</b>	12	14	9	- 36
<b>ROECD</b>	18	18	14	- 25
<b>China</b>	4	13	10	- 22
<b>India</b>	1	2	2	0
<b>EEFSU</b>	11	14	14	- 1
<b>Brazil</b>	2	3	3	1
<b>LDC</b>	2	2	2	1
<b>OPEC</b>	8	10	11	1
<b>World</b>	4	7	5	- 17

<sup>75</sup> *Id.*

<sup>76</sup> *See supra* Table 6.

<sup>77</sup> *Id.*

<sup>78</sup> MCKIBBIN ET AL., *supra* note 46, at 21; *see infra* Table 7.

<sup>79</sup> MCKIBBIN ET AL., *supra* note 46, at 23.

These different relative comparisons under the Copenhagen Accord target levels, intensity, and per capita values, are summarized in Table 8. The United States is within 10 percent of Western Europe and Australia.<sup>80</sup> On all absolute and per capita measures, the developed countries are committing to undertake the largest carbon emission reductions.<sup>81</sup> Countries not covered by any concrete restriction pursuant to the Kyoto Protocol, developing countries including India, China, and the former Soviet Union countries, are committing to the least reductions under all comparative measures.<sup>82</sup> Similarly, the developing countries that are undertaking the largest GHG reductions also experience the largest declines in average annual growth rate, ranging from declines of “0.1 to 0.3 percentage points, with the largest reductions in Japan and Western Europe.<sup>83</sup> The decline for the United States is 0.23 percentage points.”<sup>84</sup>

**TABLE 8. RANKING OF PARTICIPANTS BY REDUCTIONS IN DIFFERENT EMISSIONS MEASURES**

<b>Rank</b>	<b>Change in 2010 Emissions Levels relative to BAU</b>	<b>Change in 2020 Emissions Intensity relative to BAU</b>	<b>Change in 2020 Per Capita Emissions relative to BAU</b>
<b>1</b>	<b>Japan</b>	<b>Japan</b>	<b>Japan</b>
<b>2</b>	<b>Europe</b>	<b>Europe</b>	<b>Europe</b>
<b>3</b>	<b>Australia</b>	<b>USA</b>	<b>Australia</b>
<b>4</b>	<b>USA</b>	<b>Australia</b>	<b>USA</b>
<b>5</b>	<b>ROECD</b>	<b>ROECD</b>	<b>ROECD</b>
<b>6</b>	<b>China</b>	<b>China</b>	<b>China</b>
<b>7</b>	<b>EEFSU</b>	<b>India</b>	<b>EEFSU</b>
<b>8</b>	<b>India</b>	<b>EEFSU</b>	<b>India</b>

<sup>80</sup> *Id.* at 21; *See supra* Table 7.

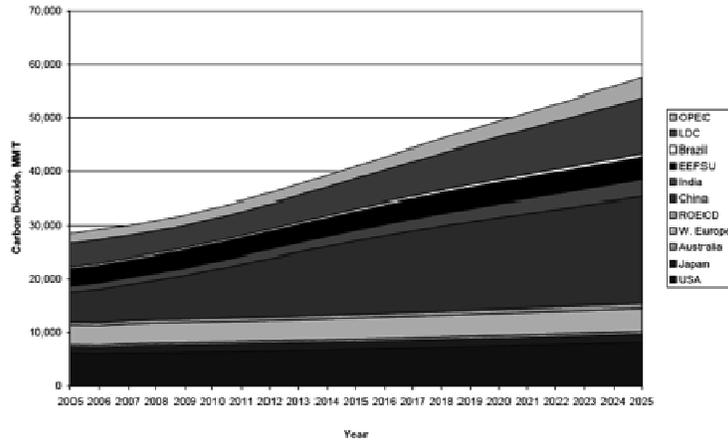
<sup>81</sup> *See supra* Table 7.

<sup>82</sup> *See supra* Table 7.

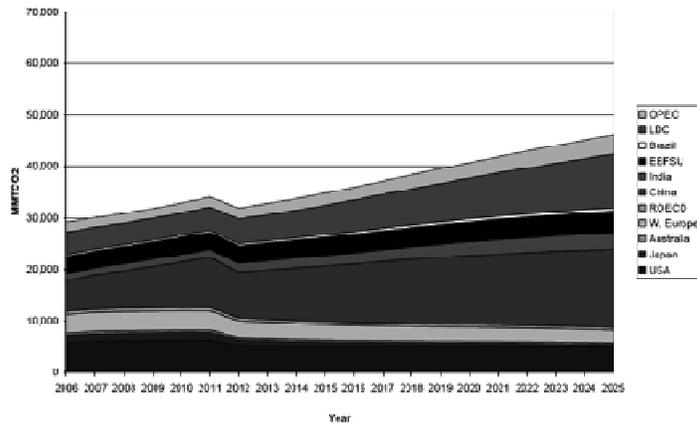
<sup>83</sup> MCKIBBIN ET AL., *supra* note 42, at 27.

<sup>84</sup> *Id.*

**FIGURE 1: BASELINE SCENARIO FOSSIL CO2 EMISSIONS<sup>85</sup>**



**FIGURE 2: POLICY SCENARIO FOSSIL CO2 EMISSIONS<sup>86</sup>**



<sup>85</sup> *Id.* at 38.

<sup>86</sup> *Id.* at 41.

A price on the use and emission of carbon is a key force in the carbon future. Figure 1 graphically depicts from which nations of the world carbon dioxide emissions will emanate over the next fifteen years in the baseline scenario.<sup>87</sup> China is the largest source of projected world emissions, as well as the largest growth of emissions.<sup>88</sup> China is not covered by the Kyoto Protocol or any other international regulation of carbon emissions.<sup>89</sup> Other developing countries also contribute a growing share of increases as shown in Figure 1.<sup>90</sup>

Figure 2 shows fossil CO<sup>2</sup> emissions by country/region through imposition of a carbon price for emissions starting in 2012 by Copenhagen Accord participant countries.<sup>91</sup> This figure shows that world emissions are almost 10,000 MMTCO<sub>2</sub> lower, more than 15 percent, in 2020 compared to the baseline scenario in Figure 1.<sup>92</sup> Of note, since these prices would be imposed only in developed countries pursuant to the Accord, it is those countries where emissions are notably reduced. China and developing countries continue to increase emissions dramatically between the present and 2020. This illustrates the need for additional and perhaps new institutions and financing.

So what is the significance of these impacts and commitments in the Copenhagen Accord? The developed nations, under every source of measurement – in absolute terms, in per capita terms, in terms of impact on GDP, and in terms of comparison to business-as-usual scenarios – are undertaking virtually the entire bulk of required world GHG reduction into the foreseeable future. This will not achieve acceptable global warming gas emission decreases.<sup>93</sup> With the burgeoning increase in GHG emissions occurring and forecast in developing countries, they must be involved as part of any solution.<sup>94</sup> Toward this necessity, the Copenhagen Accord committed \$30 billion in immediate funds leading to \$100 billion per year in additional funding for developing countries' emissions mitigation and adaptation.<sup>95</sup> Of note, the tables and figures above in this section do not

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<sup>87</sup> *Id.* at 38.

<sup>88</sup> *Id.*

<sup>89</sup> See UNFCCC, Kyoto Protocol, *supra* note 30.

<sup>90</sup> MCKIBBIN ET AL., *supra* note 46, at 38.

<sup>91</sup> *Id.* at 41.

<sup>92</sup> *Id.*

<sup>93</sup> Steven Ferrey, *Cubing the Kyoto Protocol: Post-Copenhagen Regulatory Reforms to Reset the Global Thermostat*, 28 UCLA J. ENVTL. L. & POL'Y 343, 343–44 (2010).

<sup>94</sup> *Id.* at 344.

<sup>95</sup> See *infra* Section II.B.

take account of the cost of funding a \$100 billion annual contribution to developing countries.

## **B. “SHOW ME THE MONEY”: THE FINANCIAL DEMANDS OF THE COPENHAGEN ACCORD AND CANCUN AGREEMENTS**

Public and private financing for climate action will need to be scaled up significantly in the near-term years. Indeed, the Copenhagen Accord and the Cancun Agreements call on developed countries to provide new and additional resources for climate actions – \$30 billion USD over 2010-2012 and a longer term goal phasing up to \$100 billion per year by 2020.<sup>96</sup> Reiterating the pledge made in Copenhagen in 2009, the Cancun Agreements of December 2010 formally commit developed countries to collectively provide resources “approaching \$30 billion USD for the period 2010-2012” to support developing countries’ climate efforts.<sup>97</sup> This so-called “fast-start” finance will help developing countries, particularly the poorest and most vulnerable, reduce their greenhouse gas emissions, and adapt and cope with the effects of climate change.

Pakistan Prime Minister Yousuf Raza Gilani has advocated for a global fund to address issues associated with climate change risks.<sup>98</sup> Studies conclude that billions of dollars per year will be needed to enable developing country to adapt to climate change.<sup>99</sup> According to the United Nations Framework Convention on Climate Change (UNFCCC), climate change adaptation in developing countries will cost between \$28 - \$67 billion USD per year by 2030.<sup>100</sup> In addition, developing countries are in need of mitigation financing to provide for the development of low-carbon methods for energy production.<sup>101</sup>

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<sup>96</sup> See U.N. Secretary-General, *supra* note 4, at 25, ¶ 82.

<sup>97</sup> See *id.* at 8.

<sup>98</sup> *PM for Global Climate Fund*, THE NATION (Pakistan), Jan. 27, 2012, <http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/national/27-Jan-2012/pm-for-global-climate-fund>

<sup>99</sup> *Id.*

<sup>100</sup> *Adaptation*, CLIMATE FUNDS UPDATE, <http://www.climatefundupdate.org/themes/adaptation> (last visited Feb. 4, 2012).

<sup>101</sup> *Id.*

## 1. THE SOURCES OF FINANCE

Raising this amount of money will require many sources, highlighting issues about how it will be counted. Ultimately, every source will be tapped: “public and private, bilateral and multilateral,” and grants.<sup>102</sup> Tracking climate finance is difficult, as financial flows come from different sources (national and international, public and private), are provided via different channels (bilateral or multilateral), and have different aims (mitigation or adaptation).<sup>103</sup> “The role of public and private international financial institutions (IFIs) in development finance has greatly evolved over the past two decades. In 1992, public financial flows were greater than private financial flows; however, by 1996, private financial flows were more than five times larger.”<sup>104</sup>

Table 9<sup>105</sup> tracks the pledged amounts for financing mitigation and adaptation in developing countries pursuant to the Copenhagen Accord and Cancun Agreements, as well as the mechanisms by which funding would be delivered and whether it would be “additional.”<sup>106</sup> As of May 2011, the deadline specified in the Cancun Agreements, twenty-one developed countries and the European Commission had publicly announced their individual fast-start finance pledges of a total of \$28.14 billion USD, which substantially satisfies the target goal amount.<sup>107</sup> Delivery of funds is still in progress.<sup>108</sup> Some of the pledged funds had been previously announced for general purposes.<sup>109</sup>

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<sup>102</sup> U.N. Secretary-General, *supra* note 4, at 5.

<sup>103</sup> Org. for Econ. Co-Operation and Dev. [OECD] & Int’l Energy Agency [IEA], *Financing Climate Change Mitigation: Towards a Framework for Measurement, Reporting and Verification*, OECD Doc. COM/ENV/EPOC/IEA/SLT(2009)6 (Oct. 2009).

<sup>104</sup> World Resources Institute [WRI], *International Financial Flows and the Environment* [IFFE], <http://www.wri.org/project/international-financial-flows> (last visited Apr. 19, 2012).

<sup>105</sup> Kirsten Stasio, et. al, WRI, *Summary of Developed Country Fast-Start Climate Finance Pledges* (Feb. 18, 2010), [http://pdf.wri.org/climate\\_finance\\_pledges\\_2011-05-09.pdf](http://pdf.wri.org/climate_finance_pledges_2011-05-09.pdf).

<sup>106</sup> *See id.* at 1–5.

<sup>107</sup> *See id.*

<sup>108</sup> USD \$12.14 billion has been requested and/or budgeted by the executive bodies of the countries in 2010. The EUR \$2.2 billion mobilized towards its 2010 pledge, EU Member States and the European Commission have indicated that 48.1% will support mitigation, 33.4% will support adaptation, and 16.4% will support REDD+. *Id.*

<sup>109</sup> For example, Japan’s USD \$15 billion fast start pledge announced in December 2009 as the Hatoyama Initiative includes USD \$10 billion announced previously in 2008, while the fast start pledges of the United Kingdom and the United States also include their 2008 commitments to the Climate Investment Funds (CIFs) of roughly “USD \$1.4 billion and USD 2 billion, respectively.” *Id.*; John Vidal, *Bonn Climate Talks: Developing Nations Question Funding Commitment*, THE GUARDIAN, June 6, 2011, <http://www.guardian.co.uk/environment/2011/jun/06/bonn-climate-funding-commitment>.

Countries are electing to channel their funding through a mix of existing multilateral, bilateral, and public-private institutions, particularly CIFs and GEF,<sup>110</sup> as well as through export credit agencies and other public-private channels, in the form of grants, loans, equity, loan guarantees and insurance.<sup>111</sup> The twenty-seven European Union nations, five other Kyoto Annex I nations and the United States have each chosen different multilateral international organizations to administer their climate change financial commitments to developing nations, as well as reserved some for bilateral aid.<sup>112</sup> They have chosen different purposes, and in some instances, different programs in different countries to support. They have targeted amounts of their individual funding to mitigation or adaptation efforts. In one regard, this diversity of action and organization will provide different models of how to administer international capital flows. Yet, different channels and organizational involvement will add to issues in contention as the friction grows over climate change funding. While diversity of flows can be energizing and innovative, climate control emissions are increasingly seen as a zero-sum game that requires an accepted set of rules.

**TABLE 9: NEW AND ADDITIONAL PLEDGED COMMITMENTS FOR CLIMATE CHANGE FINANCING<sup>113</sup>**

Party	European Commission
(mn us \$)	215
(mn in original currency)	€150
2010	71
2011	n/a
2012	n/a
Funding Objectives	2010:
	Adaptation: €25 mn
	Mitigation: €18mn
	REDD +: €7mn
New and Additional	This is on top of existing programmed support for

<sup>110</sup> See *infra* Section IV for detailed discussion of CIFs and GEF.

<sup>111</sup> See Stasio et al., *supra* note 105, at 1–5.

<sup>112</sup> See *infra* Table 9.

<sup>113</sup> See Stasio et al., *supra* note 105, at 1–5.

	climate- relevant actions in developing countries in the period 2010-12 in the order of € 7mn
Channeling Institution(s)	Channels for 2010: Bilateral:
	- Ethiopia GCCA: €8 mn
	- Increasing climate resilience of Pacific Small Islands States through the GCCA : €10 mn
	- Building climate resilience in Nepal: €7 mn
	- EU-UNDP Climate Change Capacity Building Programme: €8 mn
	- Africa-EU Renewable Energy Cooperation Programme (RECP): €5 mn
	- World Bank Partnership for Market Readiness: €5 mn
	- FCPF's Readiness Fund: €4 mn
	- EU REDD Facility: €3 mn
<b>Party</b>	<b>Belgium</b>
(mn us \$)	214
(mn in original currency)	€150
2010	60
2011	n/a
2012	n/a
Funding Objectives	2010:
	Adaptation: €10mn
	Capacity building bilateral projects: €2mn
	Expansion of the renewable energy investment program: €20mn
	Sustainable forest management/REDD+: €10mn
News and Additional	“The contribution of the Belgian Development Cooperation (DGD) for fast start finance in 2010 comes out of the rising ODA budget and covers only commitments taken after Copenhagen,” (DGD 2010).
Channeling Institution(s)	Channels for 2010:
	- LDCF: €10mn

	- Sustainable Forest Management program (SMF/REDD+ under the GEF, which is over and above the Belgian contribution to the 5th replenishment of the GEF): €10mn
	- Belgian Investment Company for Developing Countries: €20mn
<b>Party</b>	<b>Denmark</b>
(mn us \$)	230
(mn in original currency)	DKK 1,200
2010	53
2011	n/a
2012	n/a
Funding Objectives	Expected for 2010:
	Adaptation and Capacity Building: 48%
	Mitigation: 52%
New and Additional	All of the financial resources will be labeled as ODA. However, Denmark argues that everything above 0.8% of BNI is additional since Denmark has already lived up to its ODA target.
Channeling Institution(s)	Expected channels for 2010-2012: Multilateral:
	LDCF: €80mn
	Pilot projects to promote investments in renewable energy: €61mn
	Technology and capacity development: €40mn
	CIF-PPCR: €30mn
	CIF-FIP: €27mn
	FCPF/UN-REDD: €33mn
	Bilateral:
	Pilot Program on adaptation—securing of coasts and water resources:€5 mn For a more complete list of projects and programs please visit: <a href="http://www.faststartfinance.org/contributing_country/denmark">http://www.faststartfinance.org/contributing_country/denmark</a>
<b>Party</b>	<b>Finland</b>

(mn us \$)	157
(mn in original currency)	€110
2010	35
2011	n/a
2012	n/a
Funding Objectives	2010:
	Adaptation: 35.2%
	Mitigation: 53.2%
	REDD+: 11.6%
New and Additional	Finland is financing its commitment through a net increase of climate funding in 2010-12 compared to 2009, which will be used as its baseline.
	This Finnish climate funding as a whole continues to form a part of Finnish ODA also in these years. The net increase of climate funding will be a part of the overall increase of Finnish ODA in the years 2010-12. Finland remains committed to reaching the 0.7 % target of its GNP for ODA by 2015.
Channeling Institution(s)	Channels for 2010:
	Bilateral: 62.7% including
	-Adaptation Learning Program for Africa: €1.65mn
	-Increased capacity of hydro meteorological services, Nepal: €0.49mn
	-Study on clean development mechanism & gender: €0.03mn
	-Indonesia Energy and Environment Partnership: €4mn
	Multilateral: 37.3% including:
	-GEF-5: €11.6mn
	-Making agriculture part of the solution to climate change – Building capacities for Agriculture
	Mitigation: €2.58mn
	-Support for GGCA - Gender Mainstreaming in Global Climate: €2.6mn
<b>Party</b>	<b>France</b>

(mn us \$)	1,800
(mn in original currency)	€1,260
2010	600
2011	n/a
2012	n/a
Funding Objectives	2010-2012:
	Adaptation: 20%
	Mitigation: 60%
	REDD+: 20%
New and Additional	In 2010, France is counting their fast-start finance pledge towards their ODA.
Channeling Institution(s)	Channels for 2010-2012:
	Bilateral:
	-Indonesia's climate change program loan: €142mn
	-Water resource management in urban areas in Nigeria: €65.1mn
	-Development of national development plan for renewable energy and of geothermal energy in Kenya: €56mn
	-Reforestation program in Yunan Province in China: €35mn
	-Rubber trees plantation: €14mn
	-Improvement of the yield from the water network in Morocco: €10mn
	-Sustainable management of forests in the Democratic Republic of Congo: €5mn
	-Additional bilateral financing: €18.7mn
	Multilateral:
	-CTF: €67.7mn
	-GEF: €13mn
	For a more complete list of projects and programs please visit: <a href="http://www.faststartfinance.org/contributing_country/france">http://www.faststartfinance.org/contributing_country/france</a>

<b>Party</b>	<b>Germany</b>
(mn us \$)	1,800
(mn in original currency)	€1,260
2010	516
2011	n/a
2012	n/a
Funding Objectives	2010-2012
	Adaptation: at least 1/3
	Mitigation: the remainder for energy-related mitigation REDD+: at least €350mn
	Planned for 2010
	Adaptation: €82mn
	Mitigation: €198mn
	REDD+: €77mn
New and Additional	These funds are additional to the level of climate related support in 2009. The German government also considers the funds coming from the revenues they generated from the auctioning of emissions certificates as 'new and additional.' (BMU 2010).
	According to Oxfam (2011), Germany will count all its fast-start finance towards its 0.7% ODA commitment. Moreover, only €138.4m of the total pledge is actually new money, while the remaining amounts have been committed or pledged elsewhere before the fast-start finance pledge was announced.
Channeling Institution(s)	59.8 % of the mitigation funds were spent through multilateral institutions and 40.2 % by bilateral activities. The share of adaptation funds being transferred to multilateral agencies amounted to 37 %, and 49.7% for REDD+ funds.
	The funds will be administered by the German bilateral development cooperation, multilateral funds and the German Environment Ministry's International Climate Initiative.

	Bilateral in 2010: 63 bilateral cooperation projects. See BMU and BMZ 2011b.
	Multilateral commitments as of September 30, 2011:
	-CIF- CTF: €250mn
	-CIF-PPCR: €20mn
	-FCPF: €43mn
	-Adaptation Fund: €10mn
	-Special Climate Funds: €2.7mn
	-SCCF: €23mn
	-LDCF: €45mn
	Other funds channeled through multilateral institutions are listed at BMU and BMZ 2011b.
<b>Party</b>	<b>Ireland</b>
(mn us \$)	143
(mn in original currency)	€100
2010	n/a
2011	n/a
2012	n/a
Funding Objectives	Not Specified
New and Additional	Not Specified
Channeling Institutions	Not Specified
<b>Party</b>	<b>Luxemburg</b>
(mn us \$)	13
(mn in original currency)	€9
2010	4
2011	n/a
2012	n/a
Funding Objectives	Adaptation: ~€2mn
	REDD+: ~€1mn
New and Additional	This funding is additional to the existing ODA of 1.0% of GNI.

Channeling Institution(s)	Channels for 2010 Adaptation Fund: €1mn UN-REDD program: €1mn Global Facility for Disaster Reduction and Recovery: €1mn
<b>Party</b>	<b>Malta</b>
(mn us \$)	1
(mn in original currency)	€0.8
2010	0.2
2011	n/a
2012	n/a
Funding Objectives	2010 Adaptation (Capacity building for SIDS): €25,000 Energy Efficiency: €125,000
New and Additional	Not Specified
Channeling Institutions	Channels for 2010 Diplo Foundation: €25,000 Global Alliance for Clean Cook stoves: €125,000
<b>Party</b>	<b>Netherlands</b>
(mn us \$)	443
(mn in original currency)	€310
2010	n/a
2011	n/a
2012	n/a
Funding Objectives	2010-2012 Mitigation: At least €280mn
New and Additional:	This funding is new and additional to the existing ODA percentage of 0.8% of GNP. In addition to the €310mn for fast start finance, €350mn of the regular Dutch ODA budget has been earmarked for climate activities for the 2010•2012period: €

	95mn for renewable energy, € 195mn for REDD+ and € 60mn for adaptation. Capacity building and technology are integral components of most climate change activities.
<b>Channeling Institutions</b>	<b>Channels for 2010-2012</b>
	Bilateral: €147mn including
	-Energizing Development (Bangladesh, Benin and Bolivia): €68mn
	-Regional Program on renewable energy in the Great Lakes (Burundi, Congo, Rwanda): €50mn- National Programme on Renewable Energy in Rwanda: €40mn
	-National Program on Renewable Energy in Indonesia: €40mn
	-Africa Biogas Partnership Program (Senegal, Tanzania, Uganda): €30mn
	-Dutch fund for sustainable production of biomass for energy purposes (Brazil, Colombia, Indonesia): €28mn
	Public-private & NGO partnerships: €74mn
	Multilateral: €89mn, including €54mn for SREP (Ethiopia, Honduras and Kenya)
<b>Party</b>	<b>Portugal</b>
(mn us \$)	51
(mn in original currency)	€36
2010	17
2011	n/a
2012	n/a
<b>Funding Objectives</b>	Roughly equal split between adaptation & mitigation
<b>New and Additional</b>	Not Specified
<b>Channeling Institution(s)</b>	Not Specified
<b>Party</b>	<b>Slovenia</b>

(mn us \$)	11
(mn in original currency)	€8
2010	0.7
2011	4
2012	7
Funding Objectives	Not Specified
New and Additional	Not Specified
Channeling Institution(s)	Not Specified
<b>Party</b>	<b>Spain</b>
(mn us \$)	536
(mn in original currency)	€375
2010	191
2011	n/a
2012	n/a
Funding Objectives	2010-2012
	REDD: 20%
	2010
	Adaption: At least 45%
New and Additional	Climate finance commitments made before the fast-start commitment in December 2009 are not included to meet the goal of €375mn. For example, the pledge made in 2008 to contribute €80mn over 2008-2011 to the CIFs, which represents disbursements up to €50mn for 2010-2011, is not included.
Channeling Institutions(s)	Channels for 2010
	Multilateral
	-GEF Africa Sustainable Forestry Fund: €20mn
	-GEF Trust Fund: €13mn
	-SCCF: €4mn
	-UN-REDD Programme: €1mn
	-IADB: €28mn

	-CIF-FIP: €10mn
<b>Party</b>	<b>Sweden</b>
(mn US \$)	1,143
(mn in original currency)	€800
2010	406
2011	406
2012	406
Funding Objectives	2010
	Mitigation: €59mn
	Adaptation: €347mn
	REDD: €11mn
	Other: €4mn
	Not specified: €380mn
New and Additional	Swedish ODA is provided at 1% of GNI or approximately €3bn in 2010. Climate related activities form a substantial part of ODA funding.
Channeling Institution(s)	Channels
	Bilateral (year unspecified)
	-Periurban Water Sanitation: SEK 28mn
	-Cambodia Climate Change Alliance: SEK 26mn
	-Climate Change Initiative GEFEFOR (Mali): SEK 21mn
	-IUCN Adaptation Fund (Burkina Faso): SEK 20mn
	Multilateral (2010)
	-CIF-CTF: €22mn
	-GEF additional contribution for mitigation €17mn
	-GEF Replenishment: €15mn
	-GEF additional contribution for REDD+: €11mn
	-Adaptation Fund: €11mn
	-Consultative Group on International Agriculture and Research: 5mn
	-International Strategy for Disaster Reduction: €4mn
	-Various multilateral channels in support of

	adaptation: €30mn (For a more complete list of projects and programs, see: <a href="http://www.faststartfinance.org/contributing_country/sweden">http://www.faststartfinance.org/contributing_country/sweden</a> )
<b>Party</b>	<b>United Kingdom</b>
(mn US \$)	2,471
(mn in original currency)	€1,500
2010	936
2011	936
2012	n/a
<b>Funding Objectives</b>	2010-2012
	Adaptation: 50%
	Mitigation: 50%
	REDD+: €300 mn
	2010-2011 bilateral allocation
	Adaptation: 56%
	Low carbon development: 6%
	Cross-cutting 33%
	REDD+: 5%
New and Additional	Portions were previously by Prime Minister Gordon Brown in 2007, including €430mn to the World Bank (World Development Movement 2009).
	All the funding is part of the UK's rising aid budget, and comes from existing commitment to reach an ODA contribution of 0.7% GNI by 2013, International climate finance will continue to account for less than 10% of ODA. From 2011 to 2015, it will reach 7.5% of ODA. (DFID 2010).
	The UK is working to make all UK aid 'climate smart' – ensuring that climate change is taken into consideration in all of its programs. (DECC and UKAid 2011).
Channeling Institutions(s)	Bilateral investments in 2010-2011 total €57mn.

	Multilateral investments in 2010-2011 total €511mn, including
	CIF-PPCR: €202mn (of €225mn total)
	CIF-CTF: €155mn (of €385mn total)
	CIF-FIP: €63mn (of €75mn total)
	CIF-SREP: €35mn (of €50mn total)
	Congo Basin Forest Fund: €35mn
	GEF (climate change element: €11.7mn (of €35mn total)
	FCPF: €10mn (of €15mn total)
<b>Party</b>	<b>Remaining 12 EU Member States</b>
(mn us \$)	1,055
(mn in original currency)	n/a
2010	1,190
2011	2,734
2012	n/a
<b>Party</b>	<b>EU Aggregate Pledge</b>
(mn us \$)	10,283
(mn in original currency)	€7,200
2010	3,342
2011	3,342
2012	n/a
<b>Funding Objectives</b>	<b>All Funds requested/committed:</b>
	Adaptation: 31%
	Mitigation: 39%
	REDD +: 12%
	Multipurpose: 18%
	<b>2010 Only:</b>
	Adaptation: €735 (37%)
	Mitigation: €946 (47%)
	REDD +: €313 (16%)
New and Additional	A substantial part will be implemented through existing initiatives. ODA will continue to play a role in support for mitigation and especially for adaptation. The EU is committed to ensuring that

	climate finance neither undermines nor jeopardizes the fight against poverty and continued progress towards the MDGs.
Channeling Institution(s)	Channels for 2010
	Bilateral: 44%
	Multilateral: 56%
	For a detailed list of EU funding to multilateral channels, see the EU Fast-Start Finance Submission to the UNFCCC, May 2011
<b>Party</b>	<b>Australia</b>
(mn us \$)	641
(mn in original currency)	AUD 599
2010	533
2011	533
2012	533
Funding Objectives	2010-2011
	Adaptation: 52% / AUD 309 mn
	Low Emissions Growth: 24% / AUD 144mn
	REDD +: 24% / AUD 146 mn
	Focus on LDCs and SIDs, and on low carbon growth (clean technologies, capacity building, forest initiatives)
New and Additional	Australia's fast-start finance does not divert funds from existing aid priorities or programs (Department of Climate Change and Efficiency 2011).
Channeling Institution(s)	Channels for 2010
	Multilateral
	-LDCF: AUD 24mn
	-Global Green Growth Institute: AUD 10mn
	Bilateral
	-Caribbean AUD 16.5mn
<b>Party</b>	<b>Canada</b>
(mn us \$)	409

(mn in original currency)	CAD 400
2010	409
2011	409
2012	n/a
Funding Objectives	Adaptation: CAD 45mn
	Clean Energy: CAD 291.5mn
	Climate projects in the GEF: CAD 1805mn
	REDD +: CAD 40mn
	Small Scale projects and activities: CAD 5mn
New and Additional	CAD 400mn would be allocated above and beyond Canada's pre-Copenhagen estimate of planned international climate change support of \$41mn during the 2010/11 fiscal year (Government of Canada 2011).
Channeling Institution(s)	Adaptation:
	-LDCF: CAD 20mn
	-International Development Research Center: CAD 10 mn
	-Oxfam-Québec, Alliance Agricole Internationale, UNEP: CAD 4.5mn for three climate change adaption initiatives in Haiti
	-World Food Program: CAD 7mn for the Managing Environmental Resources to Enable Transitions to More Sustainable Livelihoods initiative in Ethiopia.
	-Vietnam's Target Program on Climate Change: CAD 3mn
	Clean Energy
	-IFC: CAD 285.7mn to be used as concessional financing for a broad portfolio of clean energy projects in developing countries
	-IFC: CAD 5mn for IFC's Advisory Services to help remove barriers to private clean energy investment
	Forests and Agriculture
	-World Bank: CAD 40mn for the FCPF Readiness

	Fund
	-World Bank: CAD 4.5mn to the BioCarbon Fund
	Other
	-UNFCCC Trust Fund for Participation: CAD 763,000
	-AOSIS: CAD 237,000
	-GEF: CAD 18.5mn

No source can or will leverage this amount of \$100 billion of annual capital alone. The U.N. Secretary-General Climate Financing Advisory Group<sup>114</sup> sees the multitude of these sources of financing being generated by:

- Public sources: grants and loans from multilateral development banks funded by revenues from:
  - International auctioning of emission allowances<sup>115</sup>
  - The auctioning of emission allowances in domestic emissions trading schemes<sup>116</sup>
  - Offset levies<sup>117</sup>
  - Taxes on international aviation and shipping<sup>118</sup>
  - A wires charge on electricity<sup>119</sup>
  - Freed by removing fossil energy subsidies or extraction royalties/licenses
  - Carbon taxes on tons of carbon emissions
  - A global financial transaction tax<sup>120</sup>

<sup>114</sup> See generally U.N. Secretary-General, *supra* note 4.

<sup>115</sup> These could be assigned amount units (AAU) under the Kyoto Protocol. *Id.* ¶ 53. “The governance of international auctioning would need to be resolved.” *Id.* ¶ 77.

<sup>116</sup> “The revenues would come from countries contributing a share of the revenues from auctioning AAU or ETS credits,” in the European Union Emission Trading Scheme phase III credits. *Id.* at 44, 15, ¶ 53. “In the case of revenues from domestic auctioning, a mechanism to allocate these revenues for international purposes would be needed in order for them to become a reliable source.” *Id.* ¶ 77.

<sup>117</sup> This could involve withholding a share of offset revenues as a global source, as currently done in the Clean Development Mechanism (CDM) under the Kyoto Protocol. *Id.* ¶ 53. CDM is the primary source for offsets for developed countries. *Id.* at 39. “The offset levy already exists in the CDM and therefore could be operationally scaled up in the short or medium term.” *Id.* ¶ 78. “[T]he magnitude of the revenues that would be generated would depend on the volumes of the carbon market, the levy applied to offsets and the carbon price.” *Id.*

<sup>118</sup> “A levy on maritime bunker/aviation jet fuels for international voyages or a levy on passenger tickets of international flights.” *Id.* ¶ 53.

<sup>119</sup> “This charge on electricity generation could either be on kWh produced or based on carbon emissions per kWh produced.” *Id.*

<sup>120</sup> The “financial transaction tax (Tobin tax) is driven by” “the base the tax is applied to,” “the tax rate,” “and the elasticity of the volume of respective transactions to the tax rate.” *Id.* ¶ 81.

- Direct Member budget contributions<sup>121</sup>
- Development bank instruments.

## 2. ACCESSIBLE INSTITUTIONAL FUNDS

Public finance will necessarily be limited under current economic conditions. “Recent estimates of current public and private financing from developed to developing countries, specifically targeted to mitigation activities, is around \$50 billion per year” (lower bound) accounting for less than one-sixth “of public and private financial flows to sectors where investment can lead to GHG emissions reduction.”<sup>122</sup> Public funding flowing from developed to developing countries for climate change is estimated to be much lower—on the order of \$12 billion per year.<sup>123</sup> Of this, funding for adaptation is only a fraction; annual financial flows for adaptation are estimated to be on the order of \$100 to \$200 million per year forthcoming.<sup>124</sup>

Public finance can be used “as a catalyst to leverage private investments wherever possible.” “Experience with the GEF”<sup>125</sup> funds illustrates that public funds expended as part of climate change mitigation can draw in an additional devotion of seven times that amount of private sector financing, which is made more secure by public sector guarantees and financial risk mitigation.<sup>126</sup> Three of the mechanisms

<sup>121</sup> Rather than be created as part of commerce, as the other levies do, this involves revenues provided through national budgetary decisions. *Id.* ¶ 53. “[A] proposal in the UNFCCC negotiations to dedicate between 0.5 per cent and 1 per cent of the gross domestic product (GDP) of developed countries to long-term climate financing, which would correspond to between US\$200 billion and US\$400 billion.” *Id.* ¶ 82.

<sup>122</sup> OECD, Financing Climate Change Action and Boosting Technology Change, at 2, <http://www.oecd.org/dataoecd/34/44/46534686.pdf> (last updated Mar. 10, 2011).

<sup>123</sup> Martin Parry et al., Assessing the Costs of Adaptation to Climate Change: A Review of the UNFCCC and Other Recent Estimates 16 (2009), [https://workspace.imperial.ac.uk/climatechange/public/Martin\\_Parry\\_Book\\_art\(web\).pdf](https://workspace.imperial.ac.uk/climatechange/public/Martin_Parry_Book_art(web).pdf); Jan Corfee-Morlot, Bruno Guay & Kate M. Larsen, Org. for Econ. Co-Operation and Dev. [OECD] & Int’l Energy Agency [IEA], FINANCING CLIMATE CHANGE MITIGATION: TOWARDS A FRAMEWORK FOR MEASUREMENT, REPORTING AND VERIFICATION, OECD Doc. COM/ENV/EPOC/IEA/SLT(2009)6 (Oct. 2009), available at <http://www.oecd.org/dataoecd/0/60/44019962.pdf>.

<sup>124</sup> Samuel Fankhauser, *The Range of Global Estimates*, in ASSESSING THE COSTS OF ADAPTATION TO CLIMATE CHANGE: A REVIEW OF THE UNFCCC AND OTHER RECENT ESTIMATES 1, 20 (Martin Parry et al., contrib., 2009), [https://workspace.imperial.ac.uk/climatechange/public/Martin\\_Parry\\_Book\\_art\(web\).pdf](https://workspace.imperial.ac.uk/climatechange/public/Martin_Parry_Book_art(web).pdf).

<sup>125</sup> See *infra* Section IV for detailed discussion of GEF.

<sup>126</sup> OECD, Financing Climate Change Action and Boosting Technology Change, *supra* note 111, at 6.

described (in bullets) below create multipliers in fostering increased gross carbon financing flows:

- the multilateral development banks<sup>127</sup>
- bilateral risk-mitigating instruments<sup>128</sup>
- carbon offsets.<sup>129</sup>

Delivering on the Copenhagen Accord goals for financial support will need a significant scaling up of today's levels of support for climate finance to address both adaptation and mitigation in developing countries between now and 2030.<sup>130</sup> Climate change adaptation is becoming increasingly important; the World Bank reports that the costs of adaptation will be great and far-reaching.<sup>131</sup> OECD research shows that if all industrialized countries were to use economy-wide carbon taxes or auction all emission trading permits to achieve the emission reductions they pledged in Copenhagen, they could raise about 1 percent of GDP (\$400 billion USD) in revenue per year by 2020.<sup>132</sup> Just a fraction of this would make a significant contribution to the financing specified under the Copenhagen Accord.<sup>133</sup>

How are these resources to be managed, accounted for in the flows, and directed? This is the source of great controversy, discussed in the next Section of this article. For the moment, the interim agency to manage such funds is designated as the World Bank.<sup>134</sup> The Executive Directors of the World Bank are the top five countries that contribute the most U.N. annual funding.<sup>135</sup> Collectively, these 5 nations contribute

<sup>127</sup> Secretary-General's Advisory Group, *supra* note 4, ¶ 109. Multilateral development banks "have the capacity to translate one dollar of public capital into up to four dollars of gross lending," and "each dollar of lending is estimated to generate three dollars of private capital co-investment, of which approximately 50 per cent is mobilized from international sources." *Id.*

<sup>128</sup> "Each public dollar invested in such risk-mitigation instruments is estimated to generate three dollars of gross international resource flows." *Id.* ¶ 110.

<sup>129</sup> *Id.* ¶ 111. At an assumed US \$25/ton carbon price, offset volumes would be approximately 2 billion tons, which "generates up to US \$50 billion in gross flows, crowding in up to US \$75 billion in additional international private capital investment." *Id.*

<sup>130</sup> OECD, Financing Climate Change Action and Boosting Technology Change, *supra* note 111, at 3.

<sup>131</sup> See Nelson et al., The Costs of Agricultural Adaptation to Climate Change, The World Bank Discussion Paper No. 4 (Aug. 2010), [http://siteresources.worldbank.org/EXTCC/Resources/407863-1229101582229/D&CCDP\\_4-Agriculture9-15-10.pdf](http://siteresources.worldbank.org/EXTCC/Resources/407863-1229101582229/D&CCDP_4-Agriculture9-15-10.pdf).

<sup>132</sup> OECD, *Costs, Revenues and Effectiveness of the Copenhagen Accord Emission Pledges for 2020*, at 18, OECD Doc. ENV/WKP(2010)8 (Aug. 4, 2010).

<sup>133</sup> *Id.*

<sup>134</sup> David Bosco, *Who will Manage Climate Change Funds?*, FOREIGN POL'Y, Dec. 10, 2010, [http://bosco.foreignpolicy.com/posts/2010/12/09/who\\_will\\_control\\_climate\\_change\\_funds](http://bosco.foreignpolicy.com/posts/2010/12/09/who_will_control_climate_change_funds).

<sup>135</sup> See The World Bank, Executive Directors (2011), <http://go.worldbank.org/RRBDU3PQQ0>.

almost two-thirds of all U.N. funding, while representing 3 percent of all member nations.<sup>136</sup> Given that three of these five members also are members of the European Union, the nations of the European Union along with the United States and Japan contribute almost 80 percent of total Bank funding, while these nations constitute about 15 percent of total member nations.<sup>137</sup>

### **III. BANKING ON THE FUTURE: THE ALTERNATIVE INTERNATIONAL STRUCTURAL OPTIONS FOR CLIMATE CAPITAL FLOW MANAGEMENT**

There are palpable, apparent splits among world nations on how to structure, govern and fund these major carbon financing agencies, centering around:

- Voting control between developed and developing nations
- Funds from public or private sources
- Delivered through new or existing institutions
- Fiduciary obligations and duties imposed for financial management of billions of US dollars of financial transfer
- A single centralized institution or a decentralized approach to fund transfer
- The role of the United Nations Framework Convention on Climate Change (UNFCCC) institutions
- Control between donor and recipient countries

#### **A. OPTION 1: EMPLOYING THE TRADITIONAL DEVELOPMENT BANKS FOR THE CLIMATE CHANGE FUNDING STRUCTURE**

The decision to employ the multilateral development banks (MDBs) as trustees for the CIFs and other funding mechanisms has both advantages and disadvantages, depending on the perspective. An analysis by the United States Congressional Research Service identifies the perceived advantages to using the traditional MDBs as the funding mechanism for international climate change financing.<sup>138</sup> Donor countries

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<sup>136</sup> See *supra* Table 1. This table shows the top five country contributions.

<sup>137</sup> See Rosenberg, *supra* note 24.

<sup>138</sup> See generally RICHARD K. LATTANZIO, CONG. RESEARCH SERV., R41302, CLIMATE INVESTMENT FUNDS (CIFs): AN OVERVIEW (2010).

have identified “several advantages to financing climate programs through the institutional structure of the” existing MDBs, including:<sup>139</sup>

***“Commitment to Private Sector Development”***

“One aim of the MDBs is to help foster private sector development by leveraging donor funds. Historically, the United States administration has supported these efforts.”<sup>140</sup>

***“Economies of Scale, Coordination, and Co-Financing”***

“Specialized expertise” and lower “administration and coordination costs.”<sup>141</sup>

***“Responsiveness to Donors”***

MDBs governance “is weighted on the basis of the cumulative financial contributions and commitments by the donor countries. . .”<sup>142</sup>

***Application of Fiduciary Standards***

Proper internal safeguards to ensure accountability for large amounts of financing.<sup>143</sup>

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<sup>139</sup> *Id.* at 11–12.

<sup>140</sup> In a March 25, 2010 hearing before the House Appropriations Subcommittee on State, Foreign Operations, and Related Programs, the Treasury Department went on record stating that the United States invests in the MDBs because “they help generate new engines of growth that benefit the U.S. economy and the global economy as a whole.” *Id.* at 11.

<sup>141</sup> *Id.* At the March 25, 2010, hearing the Treasury Department stated that the MDBs serve as effective ways to increase global wealth, and that “[f]or every dollar the United States contributes to paid-in capital for the World Bank, six dollars of additional capital is generated by other donors. And, for every dollar we invest in the World Bank, \$26 worth of aid is delivered.” *Id.* at 11–12.

<sup>142</sup> *Id.* The Treasury Department stated at the March 25, 2010, hearings that the United States invests in the MDBs because they “promot[e] core American interests and values.” *Id.* at 12. “The United States retains the most influence on World Bank matters, with a 16.4% voting share and the ability to veto major policy decisions.” It is followed by Japan in second place, Germany in fourth, and France and the United Kingdom tied for fifth. The only developing or emerging country with as much voting interest is China, at third, with 4.4%.” *Id.*

<sup>143</sup> *Id.* As reported by the Department of Treasury, “the World Bank is an attractive trustee [for environmental funds] precisely because of its strong fiduciary standards and its extensive capacity to uphold them.” *Id.*

**“Possession of Institutional Expertise, Information, and Credibility”:**

“Larger and better trained staffs with greater technical expertise,” and the collection, interpretation, and dissemination of information with credibility.

Developed countries tend to favor existing institutions, primarily the multilateral development banks with more than a half century of experience in the international arena. Traditional development agencies have in place systems to measure and manage their investments, but existing centralized bureaucratic management has on some occasions frustrated developing countries.<sup>144</sup> Consequently, there is pressure to identify independent sources of revenue created automatically by transactional levies that are independent from the discretion of contributor governments.<sup>145</sup>

Proponents of the multilateral development banks’ role in environmental assistance emphasize several advantages to financing climate programs through the World Bank Group, including its commitment to private sector development, its capacity to leverage large co-financing arrangements, its responsiveness to donor countries, and its possession of fiduciary standards and institutional expertise.<sup>146</sup> At the request of the G8/G20 countries, the multilateral development banks<sup>147</sup> have expanded support for low-carbon and climate-resilient investments.<sup>148</sup> However, critics highlight several criticisms and concerns of traditional institutions, including a lack of transparency, coordination, “polluter pay” responsibilities, a potential for new lending conditions or requirements that investments be demonstrated to be “additional,” and resulting increased debt burdens on developing countries.<sup>149</sup> Critics also

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<sup>144</sup> Athena Ballesteros et al., Power, Responsibility, and Accountability: Re-Thinking the Legitimacy of Institutions for Climate Finance, at 5, (Dec. 2010), <http://www.wri.org/publication/power-responsibility-accountability>.

<sup>145</sup> *Id.*

<sup>146</sup> LATTANZIO, *supra* note 138, at summary.

<sup>147</sup> This includes the International Bank for Reconstruction and Development (World Bank), African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), Inter-American Development Bank Group (IDB), and the International Finance Corporation (the private sector wing of the IBRD).

<sup>148</sup> LATTANZIO, *supra* note 138, at 2. These include creating new, additional environmental funding resources, and leveraging their suite of financial instruments for greater private sector environmental investment. *Id.*

<sup>149</sup> *Id.* at summary.

express concern that prior economic development policies at the World Bank are evidence of a conflict of interest.<sup>150</sup>

## **B. OPTION 2: NOT EMPLOYING THE TRADITIONAL DEVELOPMENT BANKS, AND INSTEAD USING CIF OR NEW STRUCTURES FOR CLIMATE CHANGE FINANCING**

“A variety of recipient countries, nongovernmental organizations, and civil society groups”<sup>151</sup> have articulated arguments to not employ the traditional MDBs, or to adapt the CIFs that they currently administer with several donee-country changes, including:<sup>152</sup>

### *“Donor Centricism”*

Critics suggest CIFs reflect an “aid” framework based on a donor-donee relationship that runs contrary to the international climate change principles of “common but differentiated responsibilities.”<sup>153</sup> Hundreds of large and small NGOs around the world, including Friends of the Earth International, Grassroots International, People’s Health Movement, South Asian Alliance for Poverty Eradication, and the Rainforest Action Network USA, have called for a redistribution of control of the Climate Fund to enable developing nations to play a more central role.<sup>154</sup> These same organizations advocate for the UNFCCC to

<sup>150</sup> *Id.*

<sup>151</sup> *Id.* at 13; Smita Nakhoda, WRI Working Paper: Catalyzing Low Carbon Development? The Clean Technology Fund at 8 (May 2009), [http://pdf.wri.org/working\\_papers/development\\_clean\\_technology\\_fund.pdf](http://pdf.wri.org/working_papers/development_clean_technology_fund.pdf);

<sup>152</sup> LATTANZIO, *supra* note 138, at 13–15.

<sup>153</sup> *Id.*; “The World Bank’s governance structures are undemocratic, with representation dominated by governments of rich, industrialized countries. The Global Climate Fund should have a majority representation of South countries in its governance structure since they are the world’s majority and most affected by climate change. The needs and rights of communities impacted by climate change, and the transition to equitable and sustainable economies based on sovereign, democratic control and governance of natural resources must be at the center of decision-making on climate finance.” An Open Letter to the Governments of the World Meeting at the UNFCCC in Cancun [hereinafter Open Letter], *available at* [http://www.ifg.org/pdf/WB\\_out\\_of\\_climate\\_finance\\_IFG.pdf](http://www.ifg.org/pdf/WB_out_of_climate_finance_IFG.pdf).

<sup>154</sup> “Climate finance should be within the United Nations regime, and must be separated from and in addition to the Overseas Development Assistance (ODA). . . . [A]ny financial support on adaptation and mitigation must be in grants and NEVER IN LOAN.” *Say No to Climate Loan*, GLOBAL ALLIANCE OF COMMUNITY FORESTRY (Feb. 20, 2011), <http://www.gacfonline.com/2011/02/say-no-to-climate-loan-statement-from-civil-society-organization-of-nepal/>.

operate the Climate Fund, with involvement of affected populations, and direct access to financing.<sup>155</sup>

***“Lack of Transparency”***

Observers from GEF and UNFCCC are excluded from CIF “investment plan discussions, making it difficult to ensure complementary programs.”<sup>156</sup>

***“Lack of Coordination”***

Without harmonization between the CIFs and environmental finance from the UN, GEF, and bilateral sources, overlaps and lack of synergy may occur.

***“Potential Prejudice to UN Climate Provisions”***

Many developing countries have expressly stated that they do not consider funds contributed to the CIFs as meeting U.N. Kyoto Annex I obligations.<sup>157</sup> They are concerned that significant portions of the traditional aid budgets of donors may be diverted into the CIFs and double-counted as part of their aid commitments.<sup>158</sup>

***Potential for New Conditions on Developing Countries***

Some critics suggest that the CIFs “create onerous obligations on developing countries to comply with emission reduction targets and other rules. . .”; CIF loans or grants adhere to the investment lending policies and procedures of the MDBs, including their fiduciary standards and environmental and social safeguards.<sup>159</sup>

Concerns are raised regarding the form of the funds that the World Bank is distributing. Instead of loans, some argue developing

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<sup>155</sup> According to some critics, the World Bank has a longstanding history of using loans to subject South countries and populations to policy conditions and programs. Open Letter, *supra* note 153. There are concerns that if the World Bank is involved in climate finance, much of the funds will come in the form of loans and will have conditions.

<sup>156</sup> LATTANZIO, *supra* note 138, at 15.

<sup>157</sup> *Id.* at 13. The CIFs include a “sunset clause” stating that the CIFs will take steps to wrap up its work once a new [UNFCCC] financial framework is in place. *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

countries should be receiving grants as reparations for the climate change impacts they will experience, and not beholden to the Bank's conditions on use of funds<sup>160</sup> or Bank power and influence.<sup>161</sup> Friends of the Earth International argues that the Climate Fund is too centered on "private finance," thereby enabling financially driven interests to steer the funding of projects, to the detriment of communities.<sup>162</sup> In contrast, the United States emphasizes the need for a streamlined approach based on transparency and data.<sup>163</sup> Insurance products are proposed by some as a bridge between various country perspectives and disagreements.<sup>164</sup>

### "Lack of Polluter Responsibility"

<sup>160</sup> "Climate finance should be within the United Nations regime, and must be separated from and in addition to the Overseas Development Assistance (ODA). . . . [A]ny financial support on adaptation and mitigation must be in grants and NEVER IN LOAN." *Say No to Climate Loan*, GLOBAL ALLIANCE OF COMMUNITY FORESTRY (Feb. 20, 2011), <http://www.gacfonline.com/2011/02/say-no-to-climate-loan-statement-from-civil-society-organization-of-nepal/>.

<sup>161</sup> According to some critics, the World Bank has a longstanding history of using loans to subject South countries and populations to policy conditions and programs. Open Letter, *supra* note 139. There are concerns that if the World Bank is involved in climate finance, much of the funds will come in the form of loans and will have conditions. *Id.*

<sup>162</sup> "[T]here is concern that the GCF is too focused on 'private finance' options (through loan guarantees, publicly-provided insurance, or other risk sharing instruments) and thus risks putting too much power into the hands of profit-driven interests." PhilLee, *Bonn Climate Negotiations*, FRIENDS OF THE EARTH INTERNATIONAL, <http://www.foei.org/en/what-we-do/climate-and-energy/latest-news/bonn-climate-negotiations> (last modified Jun. 9, 2011).

<sup>163</sup> American climate envoy Todd Stern insisted that the agreement include a streamlined method for countries to report their emissions, communicate what they are doing to reduce them and provide specific information regarding economic assumptions and methodology. John M. Broder, *Climate Talks End With Modest Deal on Emissions*, N.Y. TIMES, Dec. 11, 2010, <http://www.nytimes.com/2010/12/12/science/earth/12climate.html?src=me&ref=science>. Initially, large developing countries like China, Brazil, and South Africa did not embrace the intrusive nature of the proposal, but Stern helped put together a compromise the countries could accept. *Id.*

<sup>164</sup> Some companies, such as MicroEnsure, an insurance company which offers small-scale policies to the poor in countries such as Malawi, Rwanda, Tanzania, the Philippines and India, and has received millions of dollars from the Bill and Melinda Gates Foundation see insurance-backed loans to farmers as key to addressing several issues, including climate change adaptation: A type of insurance called "index" enables farmers to receive an insurance payment when particular conditions are met, such as a certain number of days without rain, or a certain other weather-related incident. Laurie-Goering, *Insured Loans Help Small Farmers Reduce Hunger, Climate Risks*, ALERTNET (Dec. 10, 2010), <http://www.trust.org/alertnet/news/insured-loans-help-small-farmers-reduce-hunger-climate-risks>; The American Development Bank (IDB) provided a partial credit guarantee of up to \$5 million to Mexican financial institution Agrofinanzas S.A., for the purpose of issuing thousands of microloans to Mexican growers. *Mexico's Agrofinanzas Will Offer 2,000 Microloans to Small Sunflower Producers With IDB Guarantee*, MICROFINANCE AFRICA (Aug. 21, 2010), <http://microfinanceafrica.net/microfinance-around-the-world/mexico%E2%80%99s-agrofinanzas-will-offer-2000-microloans-to-small-sunflower-producers-with-idb-guarantee/>.

Some commentators claim that the Rio Declaration's agreed principle of "polluters pay" is contradicted if, in addition to grants, loans must be repaid even if on a concessional basis.<sup>165</sup>

#### *Potential for 'Additionality':*

Some observers fear that the design of the CIFs does not result in new and additional resources.<sup>166</sup>

#### *Commercial Influence*

Some groups express concern that private sector involvement may be inconsistent for meeting the financial needs of the social, economic, and environmental dislocations brought on by climate change. Friends of the Earth International is among the groups criticizing the Bank's carbon credit approach.<sup>167</sup> There is concern with the Bank's reduction in the amount and value of credits it expects from its carbon funds; as of 2010, the amount of emission reductions anticipated to result from agreements and planned projects dropped 15 percent.<sup>168</sup> A contention by Bolivian officials is that it is unacceptable to allow industrialized countries to purchase carbon credits from forest preservation efforts instead of requiring them to reduce their own emissions.<sup>169</sup> Reduced emissions from Deforestation and Forest

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<sup>165</sup> LATTANZIO, *supra* note 138, at 15–16.

<sup>166</sup> LATTANZIO, *supra* note 138, at 14. "The UNFCCC provides that developed country signatories to the Convention 'provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties' in their efforts at mitigation and adaptation." *Id.*; See generally Steven Ferrey, *When 1 + 1 No Longer Equals 2: The New Math of Legal 'Additionality' Controlling World and U.S. Global Warming*, 10 MINN. J.L. SCI. & TECH. 591 (2009), for a treatment of the novel and ill-defined regulatory requirement of "additionality."

<sup>167</sup> Friends of the Earth International challenges the Bank's support for "carbon markets and offset programs," which it says privatize forests in developing countries. Takver, *World Bank Dirty Investments Fueling Climate Change Claims Friends of the Earth Report*, INDEPENDENT MEDIA CENTRE AUSTRALIA (June 13, 2011), <http://indymedia.org.au/2011/06/13/world-bank-dirty-investments-fueling-climate-change-claims-friends-of-the-earth-report>.

<sup>168</sup> Matthew Carr, *World Bank Cuts Volume Expected, Value of Emission Credits for Its Funds*, BLOOMBERG, June 13, 2011, <http://www.bloomberg.com/news/2011-06-13/world-bank-reduces-volume-value-forecast-from-its-carbon-funds.html>.

<sup>169</sup> In the last days of the Cancun negotiations, Bolivia did not support the idea of forest protection programs being part of carbon emissions trading systems. The country's government objected to the Cancun accord, and sought more significant greenhouse gas emission reductions by wealthy nations. *Climate Talks End, Deal Reached on \$100 Bln Fund*, INT'L BUS. TIMES, Dec. 12, 2010,

Degradation (REDD) is meant to provide incentives to tropical countries for forest preservation.<sup>170</sup>

### ***“Energy Policy at the Banks”***

“Many observers claim that the World Bank’s energy and infrastructure lending history undermines its credibility as an institution committed to combating the impacts of climate change.”<sup>171</sup> They note that while the Bank has increased financing for new renewable energy and energy efficiency in recent years, its fossil fuel lending still accounts for 54 percent of the energy sector share for fiscal years 2006 to 2008, and diverts staff effort.<sup>172</sup>

The World Bank receives criticism for its funding of fossil fuel based energy projects.<sup>173</sup> There were international protests in 2010 in response to the Bank’s approval of a \$3.75 billion USD loan to construct a sizable coal-fired power plant in South Africa.<sup>174</sup> The United States, the United Kingdom, the Netherlands, Italy and Norway demonstrated their apprehension to the loan by abstaining from the vote.<sup>175</sup> In FY 2010, the Bank provided the most funding yet to such projects, in the amount of \$6.6 billion USD, 116 percent more than the previous year.<sup>176</sup> According to one recent report, “fossil fuel lending continues to play a dominant role in the World Bank’s overall energy portfolio, despite recent increases in lending for new renewables and energy efficiency. . .[and] the Bank continues to make significant and growing investments in coal-

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<http://www.ibtimes.com/articles/91251/20101212/climate-talks-end-deal-reached-on-100-bln-fund.htm>.

<sup>170</sup> For an analysis of the challenges and opportunities of REDD, see generally Kathleen Lawlor & David Huberman, *Reduced Emissions From Deforestation and Forest Degradation (REDD) and Human Rights*, in RIGHTS-BASED APPROACHES: EXPLORING ISSUES AND OPPORTUNITIES FOR CONSERVATION 269 (Jessica Campese et al. eds., 2009), available at <http://www.indiaenvironmentportal.org.in/files/right-basedapproaches.pdf>.

<sup>171</sup> LATTANZIO, *supra* note 138, at 16.

<sup>172</sup> *Id.* at 15. This is compared to 10% for renewable energy, 15% for energy efficiency, and 21% for large hydropower). *Id.* “While observers generally agree that funding from the CIFs is unlikely to be used in coal-fired power generation projects, most agree that continued investment by the World Bank in fossil fuel energy and infrastructure may have several unintended effects.” *Id.*

<sup>173</sup> Suzanne Goldenberg, *World Bank’s \$3.75bn Coal Plant Loan Defies Environment Criticism*, THE GUARDIAN, Apr. 8, 2010, <http://www.guardian.co.uk/business/2010/apr/09/world-bank-criticised-over-power-station>.

<sup>174</sup> *Id.*

<sup>175</sup> *Id.*

<sup>176</sup> HEIKE MAINHARDT-GIBBS, BANK INFO. CENTER, WORLD BANK GROUP ENERGY SECTOR FINANCING UPDATE 1 (2010), available at <http://www.bicusa.org/en/Document.102339.aspx>.

fired power plants, locking developing countries into coal-based energy for decades to come.”<sup>177</sup> Since FY 2007, the World Bank Group has supplied \$6.5 billion USD for coal-based energy development, which is equivalent to the amount donor countries have pledged to the Bank’s Climate Investment Funds.<sup>178</sup>

Several NGOs have stated that such a high level of fossil fuel project funding is counterproductive to combating climate change and destroys the World Bank’s credibility as the future administrator of the Climate Fund.<sup>179</sup> The Bank has come under fire for a conflict of interest and inconsistency between message and action.<sup>180</sup> The Bank’s active funding of fossil fuel projects raises questions about its actual level of commitment to fighting climate change.<sup>181</sup>

In an open letter, critics stated:

We urge you to set up a Global Climate Fund under the authority of the UNFCCC that has an equitable governance structure, prioritizes the participation of affected communities, operates with full transparency and accountability, and provides direct access to funding. The World Bank and other multilateral development banks must not be given a role in establishing or governing the new Global Climate Fund nor in managing climate finance. Their nature, structure and track record stand in contradiction to what should be the principles of fair and effective climate finance, and the structure and operations of a new fund.<sup>182</sup>

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<sup>177</sup> BRETTON WOODS PROJECT, *FUELLING CONTRADICTIONS: THE WORLD BANK’S ENERGY LENDING AND CLIMATE CHANGE*, BRETTON WOODS PROJECT (2010), [http://www.brettonwoodsproject.org/doc/env/fuelling\\_contradictions.pdf](http://www.brettonwoodsproject.org/doc/env/fuelling_contradictions.pdf).

<sup>178</sup> MAINHARDT-GIBBS, *supra* note 176, at 1.

<sup>179</sup> “An institution that actively promotes the causes of global warming should not be given a role in global climate finance.” Open Letter, *supra* note 153.

<sup>180</sup> JANET REDMAN, *SUSTAINABLE ENERGY & ECON. NETWORK*, *WORLD BANK: CLIMATE PROFITEER* 3–4 (2008), available at <http://www.ips-dc.org/files/181/WPCP-SEEN%20April%209%2008.pdf>.

<sup>181</sup> The World Bank’s lending practices for fossil fuel energy projects, including coal, are not in line with its statements about the seriousness of climate change. Jack Duffy, *World Bank Pressured on Clean Energy*, N.Y. TIMES, Oct. 11, 2010, [http://www.nytimes.com/2010/10/12/business/energy-environment/12iht-renworld.html?\\_r=1&src=busln](http://www.nytimes.com/2010/10/12/business/energy-environment/12iht-renworld.html?_r=1&src=busln).

<sup>182</sup> Open Letter, *supra* note 153.

### C. CRITIQUE AND COMPARISON

There is a difference between the MDB traditional structure, the newer CIF structure, and a proposed new structure that critics advocate. Current negotiating positions reflect deep historical and ideological divisions between developed and developing countries. Developed countries prefer traditional institutions; developing countries are skeptical of these institutions which are structured to reflect donor power. Developing countries prefer new institutions without donor control.<sup>183</sup>

The United States has supported each of the various climate financing initiatives and structures now in place, even though it has not ratified the Kyoto Protocol. Several factors play a role in structuring the United States agenda, such as the selection of recipient countries, financial mechanism, level of funding, and type of program or technology, as well as the choice between bilateral or multilateral assistance. United States financial support for global environmental initiatives has increased substantially in recent years, as displayed in Table 10.<sup>184</sup>

**TABLE 10: RECENT U.S. BUDGET AUTHORITY FOR INTERNATIONAL ENVIRONMENTAL PROGRAMS<sup>185</sup>**

(In million USD)	YEAR		
	2009	2010	2011
Fund (Lead U.S. Agency)	Actual	Estimate	Request
CIF: Clean Technology Fund (Treasury)	0	\$300.0	\$400.0
CIF: Strategic Climate Fund (Treasury)	-	-	-
- Pilot Program for Climate Resilience	0	\$55.0	\$90.0
- Forest Investment Program	0	\$20.0	\$95.0
- Scaling-Up Renewable Energy	0	0	\$50.0
Global Environment Facility (Treasury)	\$80.0	\$86.5	\$175.0
Tropical Forest Conservation Act (Treasury)	\$20.0	\$20.0	\$20.0
Least Developed Countries Fund (State)	0	\$30.0	\$30.0

<sup>183</sup> Ballesteros et al., *supra* note 144, at viii.

<sup>184</sup> See LATTANZIO, *supra* note 138, at 2.

<sup>185</sup> Consolidated Appropriations Act, 2010, Pub. L. No. 111-117, 123 Stat. 3034 (2009); LATTANZIO, *supra* note 138, at 2.

Special Climate Change Fund (State)	0	\$20.0	\$20.0
World Bank Forest Carbon Partnership (State)	\$5.0	\$10.0	\$15.0
<b>Total</b>	\$105.0	\$541.5	\$895.0

Many organizations expressed questions about the Bank's leadership, believing that smaller, developing nations have insufficient involvement and influence. While each member country does have a representative on the World Bank Board of Governors, the Executive Directors are only from developed nations: the United States, Japan, Germany, France, and the United Kingdom.<sup>186</sup> It is the Boards of Governors and the Boards of Directors that are responsible for all major decision making on the part of the World Bank organizations.<sup>187</sup> Developing countries which will be significantly impacted by climate change, have less input on the use of funds,<sup>188</sup> prompting calls for more balanced representation of developing nations.<sup>189</sup>

The World Bank and the Regional Development Banks set up the Climate Investment Funds (CIF) to foster international cooperation on climate change.<sup>190</sup> The CIF is comprised of the Strategic Climate Fund (SCF), which will finance programs that seek to address a particular climate change challenge,<sup>191</sup> and the Clean Technology Fund (CTF),

<sup>186</sup> The World Bank Corporate Secretariat, Executive Directors and Alternates (Jan. 31, 2012), <http://siteresources.worldbank.org/BODINT/Resources/278027-1215526322295/BankExecutiveDirectors.pdf>.

<sup>187</sup> The World Bank, Member Countries, <http://go.worldbank.org/CFDWBOOR50> (last updated Jan.19, 2012).

<sup>188</sup> The poor are already being impacted by climate change and are expected to experience the most significant impact moving forward if developed countries fail to reduce emissions and help developing countries develop low carbon technologies and mitigation strategies. *See The Reality of Climate Change*, NEW NATION, Jan. 10, 2011, 2011 WLNR 525686.

<sup>189</sup> Osman Mohammed Saleh, Minister for Foreign Affairs of Eritrea, a small Eastern African country, formerly part of Ethiopia, noted that food, financial, and climate crises had negatively impacted the ability of least developed nations to grow; he commented that the Millennium Development Goals of the United Nations could only be achieved with the least developed nations and their hundreds of millions of people. Press Release, General Assembly, 'Don't Be a Crybaby,' Urges 'Graduate' of Least Developed Country Category at Istanbul Conference; 'We Have to Fend For Ourselves,' U.N. Press Release DEV/2890 (May 11, 2011). Bob McMullan, Minister and Special Envoy of the Prime Minister of Australia, stated that the least developed countries' vulnerability had to include the idea of climate vulnerability. He emphasized that a renewed effort was necessary to meet the needs of the poorest countries and individuals. *Id.*

<sup>190</sup> UNFCCC, Climate Investment Funds, [http://unfccc.int/adaptation/implementing\\_adaptation/adaptation\\_funding\\_interface/items/6013.php](http://unfccc.int/adaptation/implementing_adaptation/adaptation_funding_interface/items/6013.php) (last visited May 26, 2012).

<sup>191</sup> *Id.*

which is designed to provide scaled-up financing to support low-carbon technologies in energy efficiency, the power sector, and the transport sector that are expected to produce substantial long-term greenhouse gas emissions reductions.<sup>192</sup> The strategic orientation of the Clean Technology Fund (CTF) is guided by the principles of the United Nations Framework Convention on Climate Change (UNFCCC).<sup>193</sup> The organizational structure of the CTF is equally balanced between donor and developing countries.<sup>194</sup> All decisions are made by consensus.<sup>195</sup> With a governing structure that requires one representative from the World Bank, as trustee, and one representative from the group of remaining MDBs, as well as eight representatives from participating donor countries, the overall governance structure of the CTF has remained responsive to donor interests.<sup>196</sup> But since decisions are made by consensus, any group or block can veto decisions.<sup>197</sup>

Proponents of the CIF structure of governance point to several factors in support of the funds, including an innovative programmatic design, a country-led investment process, and a balanced governance structure with enhanced stakeholder engagement.<sup>198</sup> The CIF country-led approach aims to integrate funding into the country-owned development strategies consistent with the Paris Declaration.<sup>199</sup> The governing structure of the CIFs is equally balanced between donor and developing countries. All decisions are taken by consensus, with no provision for voting; if a consensus is not possible, the proposal is postponed or withdrawn.<sup>200</sup>

<sup>192</sup> Climate Investment Funds, Clean Technology Fund, <http://www.climateinvestmentfunds.org/cif/node/2> (last visited May 26, 2011).

<sup>193</sup> Climate Investment Funds, Clean Technology Fund – CTF Governance, [http://www.climateinvestmentfunds.org/cif/CTF\\_Governance](http://www.climateinvestmentfunds.org/cif/CTF_Governance) (last visited May 26, 2012).

<sup>194</sup> *Id.*

<sup>195</sup> CLIMATE INVESTMENT FUNDS, GOVERNANCE FRAMEWORK FOR THE CLEAN TECHNOLOGY FUND ¶ 27 (2008), available at [http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF\\_Governance\\_Framework\\_jan\\_0.pdf](http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF_Governance_Framework_jan_0.pdf).

<sup>196</sup> *Id.* ¶ 18.

<sup>197</sup> *Id.* ¶ 27.

<sup>198</sup> LATTANZIO, *supra* note 138, at summary.

<sup>199</sup> 2005 Paris Declaration was endorsed by over 100 countries. See OECD, The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action, at 12, (2005/2008), <http://www.oecd.org/dataoecd/11/41/34428351.pdf>.

<sup>200</sup> CLIMATE INVESTMENT FUNDS, GOVERNANCE FRAMEWORK FOR THE CLEAN TECHNOLOGY FUND 8 (Nov. 2008), [http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF\\_Governance\\_Framework\\_jan\\_0.pdf](http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF_Governance_Framework_jan_0.pdf).

However, the debate does not factor into central consideration the somewhat unique issues of timing, scope of impact, and irreversibility, that seem to characterize the science of climate. These disagreements that have dominated the debate focus on political preferences and a dispute over two imperfect models of international governance. While it would not be a “first” for international governance to disregard science or proper context for the problem being addressed, for climate change these factors are not ancillary elements, but at the core of sculpting effective international action. And that effectiveness also influences the choice of international public finance institutions. Section IV examines the various existing institutions available for public carbon finance flows; in Section V, we proceed to factor in the science, timing, scope and irreversibility of the current problem and institutional choice. It is only by regarding these four factors that decisions can be made with all information that we will not otherwise regret in five years when it could be too late to craft an effective international regulatory approach.<sup>201</sup>

#### **IV. INTERNATIONAL PUBLIC FINANCE BANKS AND AGENCIES’ EFFECTIVENESS**

##### **A. OPERATION OF THE TRADITIONAL MULTILATERAL PUBLIC BANK FINANCING**

###### **1. THE WORLD BANK**

The term “World Bank” refers to two entities: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA).<sup>202</sup> Concessional loans are made by the IDA and non-concessional loans are made by International Bank for Reconstruction and Development. The term “World Bank Group” includes five closely linked entities: the World Bank (IBRD and IDA), and three other agencies: the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the

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<sup>201</sup> James Hansen et al., *Target Atmospheric CO<sub>2</sub>: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217 (2011).

<sup>202</sup> THE WORLD BANK, THE WORLD BANK ANNUAL REPORT 2010 (2010), <http://siteresources.worldbank.org/EXTANNREP2010/Resources/WorldBank-AnnualReport2010.pdf>.

International Centre for Settlement of Investment Disputes (ICSID).<sup>203</sup> In mid-1999, the Executive Directors of the World Bank approved the establishment of the Prototype Carbon Fund (PCF)<sup>204</sup> with the operational objective of combating climate change and promoting sustainable development.<sup>205</sup>

So exactly who or what is the World Bank? It is administered by a Governing Board comprised of 187 countries,<sup>206</sup> along with Executive Directors.<sup>207</sup> Of note, this is the same number of countries that are members of the International Monetary Fund. The Board of Governors<sup>208</sup> consists of one Governor and one Alternate Governor appointed by each member country.<sup>209</sup> The office is usually held by the country's minister of finance, governor of its central bank, or a senior official of similar rank. The Governors and Alternates serve for terms of five years and can be reappointed.<sup>210</sup>

The recipient countries which receive support have a substantial stake in the governance of the Bank. Member countries govern the World Bank Group through the Boards of Governors and the Boards of Executive Directors. These bodies make all major decisions for the organizations.<sup>211</sup> The Executive Directors are from a smaller subset of countries, comprised of donor countries; the Executive Directors are from five countries that are among the three dozen Annex 1 countries under the Kyoto Protocol and members of the OECD: the United States, Japan, Germany, France, and the United Kingdom.

So while the Board of Governors represents all countries in the world, the Executive Directors represent just five major donor countries

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<sup>203</sup> *FAQs – About the World Bank*, THE WORLD BANK (Apr. 2011), <http://go.worldbank.org/1M3PFQQMD0>.

<sup>204</sup> The World Bank, Carbon Finance Unit, Prototype Carbon Fund Participants, <http://wbcarbonfinance.org/Router.cfm?Page=PCF&FID=9707&ItemID=9707&ft=About> (last visited Apr. 14, 2012).

<sup>205</sup> *Id.*

<sup>206</sup> The World Bank Corporate Secretariat, *Governors and Alternates* (Apr. 6, 2012), <http://siteresources.worldbank.org/BODINT/Resources/278027-1215526322295/BankGovernors.pdf>.

<sup>207</sup> The World Bank, *Executive Directors and Alternates of the World Bank and Their Voting Power* (June 2010), 30, [http://siteresources.worldbank.org/EXTANNREP2010/Resources/leadership2\\_ed-alt.pdf](http://siteresources.worldbank.org/EXTANNREP2010/Resources/leadership2_ed-alt.pdf).

<sup>208</sup> The World Bank, *Organization Chart of the World Bank* (Apr. 2, 2012), <http://siteresources.worldbank.org/EXTABOUTUS/Resources/bank.pdf>.

<sup>209</sup> The World Bank, *Board of Governors*, <http://go.worldbank.org/CETTKZ89X0> (last updated Jan. 19, 2012).

<sup>210</sup> *Id.*

<sup>211</sup> *See* The World Bank, *supra* note 207.

that are OECD countries. In some ways, this is not dissimilar to the governance of the United Nations, where there is a General Assembly representing all member nations,<sup>212</sup> as well as a Security Council<sup>213</sup> representing a cross-section of nations, including many of those who underwrite the major expenses of UN operations.

Investments by the Bank require that the funded projects address direct poverty reduction, country fiscal stabilization, governance and private sector development, and environmental sustainability.<sup>214</sup> The bank recently increased Development Policy Loan financing to \$20.7 billion USD on average in FY 2009 and 2010, up from \$6.7 billion per year the previous three years.<sup>215</sup> The World Bank Group committed \$58.8 billion USD in fiscal year 2009 to help countries reacting to the global economic crisis, a 54 percent increase over the previous fiscal year and a record high for the global development institution.<sup>216</sup>

*a. INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (IBRD)*

The IBRD Governing Board is comprised of 187 member countries.<sup>217</sup> Therefore, since this is essentially almost all of the 196 countries in the World, both donor and recipient countries are on the Governing Board.<sup>218</sup> IBRD provides loans with 3-5 year grace periods included before loan repayment begins,<sup>219</sup> grants, and credit guarantee

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<sup>212</sup> See United Nations, General Assembly of the United Nations, <http://www.un.org/en/ga/> (last visited Apr. 14, 2012).

<sup>213</sup> See United Nations, U.N. Security Council, <http://www.un.org/Docs/sc/> (last visited Apr. 14, 2012).

<sup>214</sup> STEVEN FERREY & ANIL CABRAAL, RENEWABLE POWER IN DEVELOPING COUNTRIES: WINNING THE WAR ON GLOBAL WARMING 224 (2006). The World Bank uses Development Policy Loans (DPLs) to provide financing that is disbursed rapidly to help countries address actual or anticipated development financing needs. *Id.* Such lending typically supports a program of policy and institutional actions. *Id.* Examples include operations that improve the investment climate, create employment, strengthen public sector governance, establish or strengthen social safety net programs, modernize tertiary education, and develop a policy framework to deal with adaptation to climate change. *Id.*

<sup>215</sup> The World Bank, *supra* note 176, at 8 tbl.2.

<sup>216</sup> The World Bank, World Bank Group Support to Crisis-Hit Countries at Record High (July 1, 2009), <http://go.worldbank.org/O4729N4MC0>; see also World Bank, Climate Change, <http://beta.worldbank.org/overview/strategic-framework-development-and-climate-change>;

<sup>217</sup> See The World Bank, International Bank for Reconstruction and Development (2011), <http://go.worldbank.org/SDUHVGE5S0>; see also The World Bank, IBRD Members (June 25, 2010), <http://go.worldbank.org/ND017L2DH0>.

<sup>218</sup> See Rosenberg, *supra* note 24.

<sup>219</sup> FERREY & CABRAAL, *supra* note 214, at 225.

programs that cover risks that private financiers are unable to mitigate, including partial risk guarantees<sup>220</sup> and partial credit guarantees. IBRD annual funding is \$11.2 billion USD for operations in thirty seven countries (2003),<sup>221</sup> and in FY 2010 lending of \$44.2 billion USD for 164 new operations in forty six countries.<sup>222</sup> The majority of IBRD's funds are raised on the world's financial markets, including from the return on its equity and from its margin from lending.<sup>223</sup> In addition to covering IBRD's operating expenses, these funds are used for reserves and an annual transfer to the International Development Association (IDA).<sup>224</sup> Table 11 illustrates IBRD funding and disbursement levels over five recent fiscal years.

**TABLE 11: IBRD FISCAL YEAR FUNDING<sup>225</sup>**

IBRD (Millions of US Dollars)	FY 2010	FY 2009	FY 2008	FY 2007	FY 2006
Commitments	44,197	32,911	13,468	12,829	14,135
Of which development policy lending	20,588	15,532	3,967	3,635	4,906
Gross disbursements	28,854	18,564	10,490	11,055	11,833
Of which development policy lending	17,425	9,138	3,485	4,096	5,406
Principal repayments (including prepayments)	11,624	10,217	12,610	17,231	13,600
Net disbursements	17,230	8,347	(2,120)	(6,176)	(1,767)
Loans outstanding	120,103	105,698	99,050	97,805	103,004
Undisbursed loans	63,574	51,125	38,176	35,440	34,938
Operating income <sup>a</sup>	800	572	2,271	1,659	1,740
Usable capital and reserves	36,106	36,328	36,888	33,754	33,339
Equity-to-loans ratio	29%	34%	38%	35%	33%

<sup>220</sup> *Id.* Partial risk guarantees cover specified project risks; long maturities (15-20 years). *Id.* The guarantees cover both principal and interest, but only for debt instruments. *Id.* The guarantees agreement involves the bank and the lender. *Id.* Guarantees can either be repaid up-front or in installments. *Id.*

<sup>221</sup> *Id.*

<sup>222</sup> THE WORLD BANK, *supra* note 202, at 5.

<sup>223</sup> The World Bank, How IBRD is Financed, <http://go.worldbank.org/LAG4BZ1VD1> (last visited May 6, 2012).

<sup>224</sup> *Id.*

<sup>225</sup> THE WORLD BANK, *supra* note 202, at 8 tbl.2.

*b. INTERNATIONAL DEVELOPMENT AGENCY (IDA)*

Established in 1960, IDA provides interest-free credits and grants for programs.<sup>226</sup> Eligibility for IDA support depends on “a country’s relative poverty, defined as GNI per capita below an established threshold and updated annually (in FY 2011: \$1,165 USD). . . IDA also supports some countries, including several small island economies, which are above the operational cutoff but lack the creditworthiness needed to borrow from IBRD.”<sup>227</sup>

India and Pakistan are examples of “blend countries,” meaning they are creditworthy for IBRD borrowing, while also having per capita income levels that are IDA-eligible based on per capita income levels, but are also creditworthy for some IBRD borrowing. They are referred to as “blend” countries.<sup>228</sup> Eighty-one countries are currently eligible to receive IDA resources.<sup>229</sup> These countries have a combined population of 2.5 billion people, comprising half the population of the developing world.<sup>230</sup> Worldwide, it is estimated that 1.4 billion people worldwide, over 20% of the world’s population, do not have access to electricity.<sup>231</sup>

Most IDA funds come from contributions from wealthier member countries.<sup>232</sup> In addition, IBRD’s income and borrowers’ repayments of IDA credits contribute to the pool of funds.<sup>233</sup> Unlike in the case of concessional lending, however, multilateral development banks do not borrow to fund IDA; rather, the largest contribution comes from direct donor grants.<sup>234</sup>

In FY 2011 (which ended June 30, 2011), IDA commitments amounted to \$16.3 billion USD, with 17 percent being provided in the form of grants.<sup>235</sup> Close to 230 operations were supported by new commitments.<sup>236</sup> IDA credits approved after July 1, 2011 have maturities of twenty-five or forty years, with either a five or ten-year grace period

<sup>226</sup> International Development Association [IDA], What is IDA? (2011), <http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/IDA/0,,contentMDK:21206704~menuPK:83991~pagePK:51236175~piPK:437394~theSitePK:73154,00.html>.

<sup>227</sup> *Id.*

<sup>228</sup> *Id.*

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

<sup>231</sup> INTERNATIONAL ENERGY AGENCY (IEA), WORLD ENERGY OUTLOOK 2009 128 (2010).

<sup>232</sup> *See* IDA, *supra* note 226.

<sup>233</sup> *See id.*

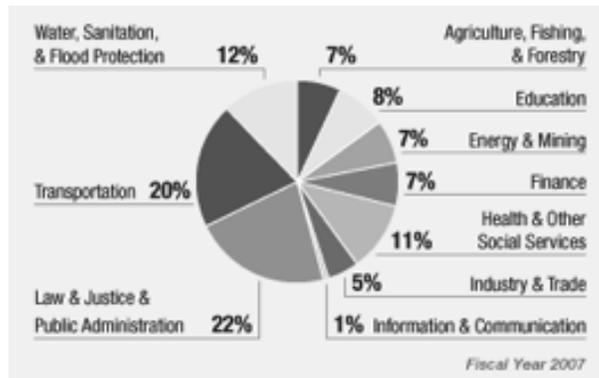
<sup>234</sup> U.N. Secretary-General, *supra* note 4, at 41.

<sup>235</sup> IDA, *supra* note 226.

<sup>236</sup> *Id.*

before repayments of principal begins.<sup>237</sup> Types of IDA project funding are displayed in Figure 3. Table 12 illustrates IDA budgets in recent fiscal years.

**FIGURE 3: IBRD PROJECT EXPENDITURES<sup>238</sup>**



**TABLE 12 : IDA EXPENDITURES IN RECENT FISCAL YEARS<sup>239</sup>**

IDA (Millions of Dollars)	FY 2010	FY 2009	FY 2008	FY2007	FY2006
Commitments	14,550	14,041	11,235	11,867	9,506
Of which development policy lending	2,370	2,820	2,672	2,645	2,425
Gross disbursements	11,460	9,219	9,160	8,579	8,910
Of which development policy lending	3,228	1,872	2,813	2,399	2,425
Principal repayments (including prepayments)	2,349	2,209	2,182	1,753	1,680
Net disbursements	9,111	7,010	6,978	6,826	7,230
Credits outstanding	113,474	112,894	113,542	102,457	127,028
Undisbursed credits	30,696	29,903	27,539	24,517	22,026
Undisbursed grants	5,837	5,652	5,522	4,642	3,630
Development grant expenses	2,583	2,575	3,151	2,195	1,939

<sup>237</sup> See IDA, *supra* note 226.

<sup>238</sup> The World Bank, *Projects – Our Focus* (2011), <http://go.worldbank.org/SH36X77BF0>.

<sup>239</sup> See THE WORLD BANK, *supra* note 202, at 8 tbl.2 (showing more detailed lending data).

## 2. MULTILATERAL INVESTMENT GUARANTEE AGENCY (MIGA)

MIGA seeks to foster foreign direct investment (FDI) in developing countries to advance economic growth, decrease poverty, and improve quality of life.<sup>240</sup> The agency's total membership is 54 countries.<sup>241</sup> MIGA provides political risk insurance for projects in developing member countries, when such investment is made by a member in another member's country, or in certain cases an investment made by a national of the host country if the funds originate from outside that country and the host government specifically approves the investment.<sup>242</sup> In FY 2011, MIGA issued \$2.1 billion USD in investment guarantees (insurance) for thirty-eight projects in developing countries, a higher dollar amount and number of projects than in previous years.<sup>243</sup>

Eligibility for MIGA guarantee coverage is extended to investments by: corporations or financial institutions that are either incorporated in and have their principal place of business in a member country or are majority-owned by nationals of member countries, state-owned corporations working on a commercial basis, and non-profit organizations, where the investments are undertaken on a commercial basis.<sup>244</sup> Currently, MIGA offers guarantee coverage through three trust funds: Afghanistan Investment Guarantee Facility, The Environmental and Social Challenges Fund for Africa and The West Bank and Gaza Investment Guarantee Trust Fund.<sup>245</sup> MIGA insures eligible projects against losses pertaining to: Currency transfer restrictions, expropriation, war and civil disturbance, breach of contract, and sovereign financial risk on obligations.<sup>246</sup>

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<sup>240</sup> *Overview*, MIGA (MULTILATERAL INVESTMENT GUARANTEE AGENCY), [http://www.miga.org/about/index\\_sv.cfm?stid=1736](http://www.miga.org/about/index_sv.cfm?stid=1736) (last visited Apr. 14, 2012).

<sup>241</sup> World Bank Group, Multilateral Investment Guarantee Agency, 2009 Annual Report, at 5, (June 30, 2009), [http://www.miga.org/documents/09ar\\_highlights.pdf](http://www.miga.org/documents/09ar_highlights.pdf).

<sup>242</sup> *Guarantees Overview*, MIGA (MULTILATERAL INVESTMENT GUARANTEES AGENCY), [http://www.miga.org/guarantees/index\\_sv.cfm?stid=1546](http://www.miga.org/guarantees/index_sv.cfm?stid=1546) (last visited Apr. 14, 2012).

<sup>243</sup> *2009 Annual Report*, MIGA (MULTILATERAL INVESTMENT GUARANTEE AGENCY), [http://www.miga.org/news/index\\_sv.cfm?aid=2412](http://www.miga.org/news/index_sv.cfm?aid=2412) (last visited Apr. 14, 2012).

<sup>244</sup> *Eligibility*, MIGA (MULTILATERAL INVESTMENT GUARANTEE AGENCY), [http://www.miga.org/guarantees/index\\_sv.cfm?stid=1548](http://www.miga.org/guarantees/index_sv.cfm?stid=1548) (last visited Apr. 14, 2012). A commercial basis is when the funding source -- much like a commercial lender -- evaluates the project risk and return, and acts in a market participant capacity.

<sup>245</sup> *Trust Funds*, MIGA (MULTILATERAL INVESTMENT GUARANTEE AGENCY), <http://www.miga.org/investmentguarantees/index.cfm?stid=1809> (last visited Apr. 14, 2012).

<sup>246</sup> *Guarantees Overview*, MIGA (MULTILATERAL INVESTMENT GUARANTEE AGENCY), <http://www.miga.org/investmentguarantees/index.cfm> (last visited Apr. 14, 2012).

### 3. INTERNATIONAL FINANCING CORPORATION (IFC)

IFC is the private sector arm of the World Bank Group.<sup>247</sup> IFC assistance may come in the form of loans, grants, credit guarantees, equity, structured finance, trade finance, and risk management products.<sup>248</sup> IFC's 184 member countries provide its authorized share capital of \$2.4 billion USD, collectively determine its policies, and approve investments.<sup>249</sup>

There are several foundations and companies that help fund projects in which IFC invests<sup>250</sup> and several donor governments.<sup>251</sup> IFC investments typically range from \$1 million to \$100 million USD, with a limited number of investments in the \$100,000 to \$1 million USD range. To ensure the participation of investors and lenders from the private sector, "IFC typically finances no more than 25 percent of the total estimated project costs."<sup>252</sup> The amount of annual funding in FY 2011 commitments was \$19 billion in over 500 projects in 102 countries.<sup>253</sup>

<sup>247</sup> *About IFC*, INTERNATIONAL FINANCE CORPORATION [IFC], [http://www1.ifc.org/wps/wcm/connect/corp\\_ext\\_content/ifc\\_external\\_corporate\\_site/about+ifc](http://www1.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc) (last visited Apr. 14, 2012).

<sup>248</sup> *IFC Investment Services*, INTERNATIONAL FINANCE CORPORATION [IFC], [http://www1.ifc.org/wps/wcm/connect/CORP\\_EXT\\_Content/IFC\\_External\\_Corporate\\_Site/What+We+Do/Investment+Services](http://www1.ifc.org/wps/wcm/connect/CORP_EXT_Content/IFC_External_Corporate_Site/What+We+Do/Investment+Services) (last visited Apr. 14, 2012).

<sup>249</sup> INTERNATIONAL FINANCE CORPORATION, MANAGEMENT'S DISCUSSION AND ANALYSIS AND CONDENSED CONSOLIDATED FINANCIAL STATEMENTS 6 (Sept. 30, 2011), *available at* <http://www1.ifc.org/wps/wcm/connect/f6306880496c81d09feddf336b93d75f/IFC%2B-%2BFY12%2BQ1-%2BMD%26A%2Band%2BConsolidated%2BFinancial%2BStatements%2B-%2BFINAL.pdf?MOD=AJPERES>.

<sup>250</sup> *Foundations*, INTERNATIONAL FINANCE CORPORATION [IFC], [http://www1.ifc.org/wps/wcm/connect/corp\\_ext\\_content/ifc\\_external\\_corporate\\_site/about+ifc/partners+and+stakeholders/about+ifc++foundations](http://www1.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc/partners+and+stakeholders/about+ifc++foundations) (last visited Apr. 14, 2012).

<sup>251</sup> *Donors*, INTERNATIONAL FINANCE CORPORATION [IFC], [http://www1.ifc.org/wps/wcm/connect/corp\\_ext\\_content/ifc\\_external\\_corporate\\_site/about+ifc/partners+and+stakeholders/about+ifc--donors](http://www1.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc/partners+and+stakeholders/about+ifc--donors) (last visited Apr. 14, 2012).

<sup>252</sup> *IFC Projects Database—Frequently Asked Questions*, INTERNATIONAL FINANCE CORPORATION [IFC], [http://www1.ifc.org/wps/wcm/connect/CORP\\_EXT\\_Content/IFC\\_External\\_Corporate\\_Site/IFC+Projects+Database/Projects/AIP+Policy+in+Detail/ProjectFAQs](http://www1.ifc.org/wps/wcm/connect/CORP_EXT_Content/IFC_External_Corporate_Site/IFC+Projects+Database/Projects/AIP+Policy+in+Detail/ProjectFAQs) (last visited May 26, 2012).

<sup>253</sup> The World Bank, *The World Bank Annual Report 2010 – Year in Review*, [http://siteresources.worldbank.org/EXTANNREP2010/Resources/7074178-1285788609189/finance0313\\_lending.ppt](http://siteresources.worldbank.org/EXTANNREP2010/Resources/7074178-1285788609189/finance0313_lending.ppt).

#### 4. ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM (ESMAP)

Formed in 1983, the Energy Sector Management Assistance Program (ESMAP) is a global, multi-donor technical assistance trust fund administered by the World Bank and cosponsored by specified bilateral donors, to achieve environmentally sustainable energy solutions.<sup>254</sup> ESMAP is currently supported by eleven donor countries whose pledges in FY 2009 were \$13.9 million USD, with about half of the funds coming from the Netherlands and Germany.<sup>255</sup>

#### 5. MULTILATERAL DEVELOPMENT BANKS

The multilateral development banks (MDBs), other than the World Bank, are regional equivalent credit institutions supporting a capital flow agenda similar to the World Bank. They have invested heavily in infrastructure in developing countries since they were established. For example, the Asian Development Bank (ADB), headquartered in Manila and established in 1966, is owned and financed by its sixty seven regional members, of which forty eight are from the region and nineteen are from other areas.<sup>256</sup> ADB's instruments include loans and technical assistance.<sup>257</sup> But today, the ADB's annual investment level of approximately \$22 billion USD is relatively small compared to the hundreds of billions of dollars that developing countries are trying to attract.<sup>258</sup> A relatively small number of MDB projects address many of the elements of sustainable energy.<sup>259</sup>

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<sup>254</sup> *Overview of ESMAP*, ESMAP, <http://www.esmap.org/esmap/overview> (last visited Apr. 14, 2012).

<sup>255</sup> Energy Sector Mgmt. Assistance Program, 2009 Annual Report, at 9, (Dec. 2009), [http://www.esmap.org/esmap/sites/esmap.org/files/FINAL%20ESMAP\\_AR09.pdf](http://www.esmap.org/esmap/sites/esmap.org/files/FINAL%20ESMAP_AR09.pdf).

<sup>256</sup> *FAQs*, ASIAN DEVELOPMENT BANK (ADB), <http://www.adb.org/about/faqs> (last visited Apr. 14, 2012).

<sup>257</sup> *Overview*, ASIAN DEVELOPMENT BANK (ADB), <http://www.adb.org/about/overview> (last visited Apr. 14, 2012).

<sup>258</sup> See Asian Development Bank [ADB], ADB Key Facts, <http://www.adb.org/about/key-facts> (last visited May 26, 2012).

<sup>259</sup> Smita Nakhoda & Athena R. Ballesteros, Investing in Sustainable Energy Futures: Multilateral Development Banks' Investments in Energy Policy, at viii (2010), [http://pdf.wri.org/investing\\_in\\_sustainable\\_energy\\_futures.pdf](http://pdf.wri.org/investing_in_sustainable_energy_futures.pdf).

## 6. EXPORT-IMPORT BANKS

Export credit agencies (ECAs) “provide government-backed funds in the form of direct loans, guarantees, credits, and insurance to private” companies from their country to conduct business internationally.<sup>260</sup> The Working Party on Export Credits and Credit Guarantees, as an entity of the OECD, oversees OECD work in the area of export credits.<sup>261</sup> Export credits provided officially by or on behalf of OECD governments are reported through the OECD rules, designed to limit predatory unfairness.<sup>262</sup> The proportion of such capital flows going to low-carbon projects for renewable energy represent only \$0.7 billion USD, or less than 1 percent, of the total of such capital flows.<sup>263</sup> The Export-Import Bank of the United States provides working capital guarantees (pre-export financing), export credit insurance, loan guarantees and direct loans (buyer financing).<sup>264</sup>

### B. THE NEW INTERNATIONAL CARBON FINANCING STRUCTURES

There are various recent operating funding models which take individual country donor dollars and reallocate them to various climate change global warming mitigation or adaptation projects in developing countries. They have distinct international funding, funding levels, and basic operational and governance structures. Each of these funds is a relatively recent creation to address various aspects of climate change. The various recent funds discussed below, illustrate that fund governance can be split between developed and developing countries, or in some instances, with majority control of the fund vested in developing

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<sup>260</sup> *International NGO Campaign on Export Credit Agencies*, ECA [EXPORT CREDIT AGENCIES] WATCH: INTERNATIONAL NGO CAMPAIGN ON EXPORT CREDIT AGENCIES, [http://www.eca-watch.org/eca/ecas\\_explained.html](http://www.eca-watch.org/eca/ecas_explained.html) (last visited May 26, 2012).

<sup>261</sup> OECD, The Export Credit Group, [http://www.oecd.org/document/15/0,3746,en\\_2649\\_34169\\_1844760\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/15/0,3746,en_2649_34169_1844760_1_1_1_1,00.html) (last visited May 26, 2012).

<sup>262</sup> OECD, Trade and Agriculture Directorate: Export Credits—About, [http://www.oecd.org/about/0,3347,en\\_2649\\_34169\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/about/0,3347,en_2649_34169_1_1_1_1,00.html) (last visited May 26, 2012).

<sup>263</sup> Corfee-Morlet et al., *supra* note 123, at 7.

<sup>264</sup> *Mission*, EXPORT-IMPORT BANK OF THE UNITED STATES, <http://exim.gov/about/mission.cfm> (last visited Apr. 14, 2012).

countries. Each of these funds is much smaller in funding than the \$100 billion USD in annual funding committed in the Copenhagen Accord.<sup>265</sup>

## 1. ADAPTATION FUND

Created under the Kyoto Protocol, the Adaptation Fund is funded by an automatic set-aside of 2 percent of Certified Emissions Reductions (CERs) certified by the Kyoto Protocol Clean Development Mechanism (CDM).<sup>266</sup> This amounted to \$38.7 million USD from the sale of 5 million CERs through 2009, which also was augmented by \$71 million USD in donor contributions received in 2010 from Spain and Germany.<sup>267</sup> It is administered by an Adaptation Fund Board (AFB) of sixteen members, with the majority constituted by non-Annex I countries.<sup>268</sup> Therefore, recipient developing countries control the most positions on the AFB. The GEF Secretariat<sup>269</sup> serves as the interim Secretariat for administrative support.<sup>270</sup>

## 2. MONTREAL PROTOCOL FUND<sup>271</sup>

Another international environmental finance mechanism is the Montreal Protocol on Substances That Deplete the Ozone Layer, which from 1990 through 2010 administered approximately \$2.7 billion USD, contributed by all “non-Article 5” Protocol Parties.<sup>272</sup> This fund supports phasing out emissions of chlorofluorocarbons (CFCs) and hydro

<sup>265</sup> U.N. Secretary-General, *supra* note 4, at 2.

<sup>266</sup> See UNFCCC, Adaptation Fund, [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/adaptation\\_fund/items/3659.php](http://unfccc.int/cooperation_and_support/financial_mechanism/adaptation_fund/items/3659.php).

<sup>267</sup> Ballesteros et al., *supra* note 144, at 7. Voluntary contributions by Spain are USD \$58 million, and Germany contributed USD \$13 million. *Id.*

<sup>268</sup> *Id.* Two from each of five U.N. Regional Groups, one from a Small Island Developing States (SIDS), one from Least Developed Country (LDC), two from Annex I Parties, and two from non-Annex I Parties. *Id.*

<sup>269</sup> See *infra* pp. 67–68 for a discussion of GEF.

<sup>270</sup> *About the Adaptation Fund*, ADAPTATION FUND, <http://www.adaptation-fund.org/about> (last visited Apr. 14, 2012).

<sup>271</sup> The Montreal Protocol on Substances That Deplete the Ozone Layer, a protocol to the Vienna Convention for the Protection of the Ozone Layer, ratified by 196 countries, is an international treaty entered into force on January 1, 1989, designed to protect the ozone layer by phasing out the production of numerous substances. It has been revised in 1990, 1991, 1992, 1993, 1995, 1997, and 1999. See Multilateral Fund for the Implementation of the Montreal Protocol, <http://www.multilateralfund.org/default.aspx> (last visited Apr. 14, 2012).

<sup>272</sup> Ballesteros, *supra* note 144, at 7.

chlorofluorocarbons (HCFCs), which have an additional benefit of reducing chemicals that contribute to global warming.<sup>273</sup> The Kyoto Protocol's clean development mechanism (CDM) has led to the destruction of large volumes of the potent greenhouse gas HFC-23, a by-product of the production of the coolant HCFC-22, which is sought to be reduced and phased-out under the Montreal Protocol.<sup>274</sup> The Protocol is governed by the Meeting of the Parties (MoP), and an Executive Committee, with decisions reached by two-thirds majority vote. It has four Implementing Agencies: UNEP,<sup>275</sup> UNDP, UNIDO, and the World Bank.

### 3. GLOBAL ENVIRONMENT FACILITY (GEF)<sup>276</sup>

Since its formation in 1991, The Global Environment Facility (GEF), has served as the *de jure* interim financial mechanism of the United Nations Framework Convention on Climate Change (UNFCCC), making it the longest serving operating entity of the UNFCCC financial mechanism.<sup>277</sup> GEF, the largest funder of projects to benefit the global environment, is structured as a trust fund that works with three implementing agencies: UNDP, UNEP, and the World Bank.<sup>278</sup>

There are 182 participating countries,<sup>279</sup> which is only slightly smaller than the number of member countries in the IMF or World Bank.<sup>280</sup> It is administered by the assembly of representatives of member countries with meets every 3–4 years, and a council with thirty-two members comprised of sixteen from developing countries, fourteen from

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<sup>273</sup> Multilateral Fund for the Implementation of the Montreal Fund, About the Multilateral Fund, <http://www.multilateralfund.org/aboutMLF/profile/default.aspx> (last visited May 26, 2012).

<sup>274</sup> Press Release, UNFCCC, The Montreal Protocol and the Kyoto Protocol Mutually Supportive Say Top UN Officials (Sept. 17, 2007), [http://unfccc.int/files/press/news\\_room/press\\_releases\\_and\\_advisories/application/pdf/070917\\_hcfc\\_pressrel.pdf](http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/070917_hcfc_pressrel.pdf).

<sup>275</sup> The United Nations Environment Programme (UNEP) has been part of the U.N. system since 1972. *Id.*

<sup>276</sup> See GEF Secretariat, GEF-5 Programming Document, GEF Doc. GEF/R.5/31 (May 3, 2010).

<sup>277</sup> Global Environment Facility [GEF], About GEF—What is the GEF, <http://www.thegef.org/gef/whatisgef> (last visited May 26, 2012).

<sup>278</sup> GEF SMALL GRANTS PROGRAMME [GEF SGP], About GEF, <http://sgp.undp.org/index.cfm?module=ActiveWeb&page=WebPage&s=AboutGEF> (last visited Apr. 14, 2012).

<sup>279</sup> Global Environment Facility [GEF], Participants, [http://www.thegef.org/gef/member\\_countries](http://www.thegef.org/gef/member_countries) (last visited Apr. 14, 2012).

<sup>280</sup> See *supra* Section V.

developed, two from Economies in Transition (EITs), acting by double majority vote if no consensus is attained.<sup>281</sup>

GEF has total resources after its GEF-5 Replenishment, of a cumulative \$15.9 billion USD.<sup>282</sup> In 2010, the GEF funded \$8.7 billion USD in projects through the Trust Fund and the Least Developed Country Fund (LDCF) and Special Climate Change Fund (SCCF), leveraging approximately \$33 billion USD in co-financing.<sup>283</sup> It is funded by donations from approximately thirty countries, known as Contributing Participants.<sup>284</sup> Funding from the GEF is approximately \$401 million USD, plus \$407 million USD from other partners.<sup>285</sup> GEF administers several special subprograms that can fund climate change mitigation projects:

- The Small Grant Program has a presence in 122 countries and more than 12,000 grants awarded worldwide to support projects of non-governmental and community-based organizations in developing countries<sup>286</sup> focused on climate change and other issues.<sup>287</sup>
- The Special Climate Change Fund (SCCF) was established under the UN Framework Convention on Climate Change UNFCCC in 2001 to finance activities relating to climate change that are complementary to those funded by the resources allocated to the Climate Change Focal Area of the GEF and by bilateral and multilateral funding<sup>288</sup>

<sup>281</sup> See GEF, Assembly, <http://www.thegef.org/gef/print/40> (last visited Apr. 14, 2012); See GEF, GEF Council, <http://www.thegef.org/gef/print/42> (last visited Apr. 14, 2012).

<sup>282</sup> These include the Pilot Program Funds of USD \$0.8 billion, GEF-1 funds of USD \$2 billion, GEF-2: funds of USD \$2.75 billion, GEF-3: USD funds of \$3 billion, GEF-4 funds of USD \$3.13 billion, and GEF-5 USD \$4.2 billion. Ballesteros et al., *supra* note 144, at 7.

<sup>283</sup> *Id.*

<sup>284</sup> GLOBAL ENVIRONMENT FACILITY TRUST FUND, FINANCIAL STATEMENTS AND INDEPENDENT AUDITORS' REPORT 16 (June 30, 2010 & 2009), <http://www.thegef.org/gef/sites/thegef.org/files/publication/GEF%20-%20Audited%20Fin.Stmt-%202010.pdf>.

<sup>285</sup> GEF SMP, SGP at a Glance, <http://sgp.undp.org/index.cfm?module=ActiveWeb&page=WebPage&s=AboutSGP> (last visited Apr. 14, 2012). Grants are made directly to community-based organizations (CBOs) and non-governmental organizations (NGOs) in recognition of the key role they play as a resource and constituency for environment and development concerns. The maximum grant amount per project is US\$50,000, but averages around US\$20,000. Grants are channeled directly to CBOs and NGOs.

<sup>286</sup> *Id.*

<sup>287</sup> *Id.*

<sup>288</sup> See GEF, Special Climate Change Fund (SCCF), <http://www.thegef.org/hef/SCCF> (last visited Apr. 14, 2012).

- The Least Developed Countries Fund (LDCF) was established under the United Nations Framework Convention on Climate Change UNFCCC at its seventh session in Marrakech in 2001, managed by the GEF, to address the special needs of the Least Developed Countries (LDCs).<sup>289</sup>
- The Nagoya Protocol Implementation Fund (NPIF) was established at the tenth meeting of the Conference of the Parties (COP 10) to the Convention on Biological Diversity, held in Japan in 2010.<sup>290</sup> This fund, which became operational in 2011, is meant to facilitate ratification and implementation of the Protocol.<sup>291</sup>

#### 4. FOREST CARBON PARTNERSHIP FACILITY<sup>292</sup>

Another climate change oriented fund is the FCPF, which administers \$115 million USD against a \$200 million goal.<sup>293</sup> It is governed by a Participant Committee, which, for 2011-12, is comprised of fourteen financial contributor countries and fourteen recipient country participants.<sup>294</sup> The World Bank serves as Trustee.<sup>295</sup> FCPF works with developing countries to reduce emissions from deforestation and forest degradation and advance conservation, a partnership known as REDD+.<sup>296</sup> The program estimates that financial flows for GHG emission reductions from REDD+ could amount to \$30 billion USD per year.<sup>297</sup>

<sup>289</sup> See Global Environment Facility (GEF), Least Developed Countries Fund (LDCF), <http://www.thegef.org/hef/LDCF> (last visited Apr. 14, 2012).

<sup>290</sup> Global Environment Facility [GEF], GEF-Administered Trust Funds, [http://www.thegef.org/gef/trust\\_funds](http://www.thegef.org/gef/trust_funds) (last visited May 26, 2012).

<sup>291</sup> *Id.*

<sup>292</sup> See BENOIT BOSQUET & KEN ANDRASKO, FOREST CARBON PARTNERSHIP FACILITY, INTRODUCTION AND EARLY LESSONS—BRIEFING TO GUYANA CIVIL SOCIETY (2010), [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/FCPF\\_Intro\\_Early\\_Lessons\\_Guyana\\_Final%20\\_04-21-10.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/FCPF_Intro_Early_Lessons_Guyana_Final%20_04-21-10.pdf).

<sup>293</sup> Ballesteros et al., *supra* note 144, at 9.

<sup>294</sup> The Forest Carbon Partnership Facility, Members and Observers of the Fourth FCPF Participants Committee (2011 – 2012), <http://www.forestcarbonpartnership.org/fcp/node/259> (last visited May 26, 2012).

<sup>295</sup> The Forest Carbon Partnership Facility, About FCPF—Introduction, <http://www.forestcarbonpartnership.org/fcp/node/12> (last visited May 26, 2012).

<sup>296</sup> UN-REDD Programme, About REDD+, <http://www.un-redd.org/AboutREDD/tabid/582/Default.aspx> (last visited Feb. 26, 2012).

<sup>297</sup> *Id.*

## 5. THE CLIMATE INVESTMENT FUNDS (CIFs)

Two of the larger and more recently instituted mechanisms, the Climate Investment Funds (CIFs),<sup>298</sup> were created in February 2008,<sup>299</sup> at the behest and funding of Japan, the United Kingdom, and the United States, to help developing countries “bridge the gap between dirty and clean energy.”<sup>300</sup> The CIFs are investment programs administered by the World Bank Group that help finance developing countries’ transitions toward low-carbon technologies.<sup>301</sup> The Trustee for the CIF is the International Bank of Reconstruction and Development (IBRD).<sup>302</sup>

The CIFs are composed of two trust funds—the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF).<sup>303</sup> The SCF, itself, is a suite of three separate funds: the Pilot Program for Climate Resilience (PPCR), the Forest Investment Program (FIP), and the Scaling Up Renewable Energy Program in Low Income Countries (SREP)—each with a specific scope, objective, and governance structure.<sup>304</sup> Each of the CIFs is governed by a Trust Fund Committee (TFC) composed of sixteen participants, with an equal number of representatives of donor governments and developing country governments.<sup>305</sup> Decisions are taken by consensus, which is different governance than in some other organizations.<sup>306</sup>

<sup>298</sup> See Climate Investment Funds, <http://www.climateinvestmentfunds.org/cif> (last visited Apr. 14, 2012).

<sup>299</sup> On May 23, 2008, representatives from 40 developing and industrialized countries reached agreement on the CIF funds’ design, which was approved by the World Bank’s Board of Directors on July 1, 2008. LATTANZIO, *supra* note 138, at summary; The World Bank, Climate Investment Funds: Piloting Low Emissions Growth and Climate-Resilient Development, <http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1308067795667/cif-timeline-final.htm> (last visited May 26, 2012).

<sup>300</sup> Henry Paulson, Alistair Darling & Fukushima Nukaga, *Financial Bridge from Dirty to Clean Energy*, FIN. TIMES, Feb. 7, 2008, <http://www.ft.com/cms/s/0/97a1e850-d598-11dc-8b56-0000779fd2ac.html>.

<sup>301</sup> See LATTANZIO, *supra* note 138, at summary.

<sup>302</sup> Climate Investment Funds, Trustee, <http://www.climateinvestmentfunds.org/cif/trustee> (scroll to “About Us” hyperlink, and scroll to “Governance” hyperlink).

<sup>303</sup> Climate Investment Funds, History, <http://www.climateinvestmentfunds.org/cif/designprocess> (last visited Apr. 14, 2012).

<sup>304</sup> *Id.*

<sup>305</sup> Climate Investment Funds, About Us—Directory, [http://www.climateinvestmentfunds.org/cif/directory#ctf\\_tfc](http://www.climateinvestmentfunds.org/cif/directory#ctf_tfc) (last visited May 26, 2012).

<sup>306</sup> Climate Investment Funds, Trust Fund Committees, [http://www.climateinvestmentfunds.org/cif/Trust\\_Fund\\_Committees](http://www.climateinvestmentfunds.org/cif/Trust_Fund_Committees) (last visited May 26, 2012).

Since 2008, fourteen donor countries have pledged a total of \$6.5 billion USD to the funds, administered through multilateral channels.<sup>307</sup> The bulk of these funds (approximately \$4.5 billion) are dedicated to the CTF, and the rest to the Strategic Climate Funds.<sup>308</sup> The US pledge is \$2 billion.<sup>309</sup>

*a. CLEAN TECHNOLOGY FUND*<sup>310</sup>

The CTF has \$4.91 billion USD pledged.<sup>311</sup> As of fall 2011, the Trust Fund Committee has approved funding for thirty two projects, totaling \$1.7 billion USD.<sup>312</sup> All eight of the governments contributing funds to the CTF are represented on its governing trust fund committee, and include: Australia, France, Germany, Japan, Spain, Sweden, United Kingdom, and United States.<sup>313</sup>

It makes grants, concessional loans, and guarantees. The CTF provides financing to foster the use of low-carbon technologies that have the potential for long-term reductions of greenhouse gas emissions.<sup>314</sup>

Developing country members of the World Bank selected the governments of Brazil, China, Egypt, India, Morocco, Nigeria, South Africa, and Turkey.<sup>315</sup> Representatives of the World Bank and each of the partnering regional development banks are also represented, but do not

<sup>307</sup> Climate Investment Funds, About Us, Finances, <http://www.climateinvestmentfunds.org/cif/funding-basics> (last visited May 26, 2012).

<sup>308</sup> Smita Nakhoda, *Getting to Work: A Review of the Operations of the Clean Technology Fund*, at 2, (World Res. Inst., Working Paper, Nov. 2010).

<sup>309</sup> See Consolidated Appropriations Act, Pub. L. No.111-117, 123 Stat. 3340. "For FY 2010, the U.S. government approved \$375 million for the CIFs" and "FY 2011, the Administration requested an additional \$635 million for the program." LATTANZIO, *supra* note 138, at summary.

<sup>310</sup> See generally Climate Investment Funds, *Design Document for the Program on Scaling-Up Renewable Energy in Low Income Countries (SREP, A Targeted Program Under the Strategic Climate Fund* (June 1, 2009), available at [http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/SREP\\_design\\_Document.pdf](http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/SREP_design_Document.pdf); Climate Investment Funds, *Criteria for Selecting Country and Regional Pilots Under the Program for Scaling Up Renewable Energy in Low Income Countries* (Mar. 14, 2010), available at <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/>

<sup>311</sup> Ballesteros et al., *supra* note 144, at 48.

<sup>312</sup> Represented on the committee, but not participating in funding decisions are the World Bank, IFC, and the multilateral development banks (MDBs include the Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development, and Inter-American Development Bank).

<sup>313</sup> Climate Investment Funds, Clean Technology Fund, Governance, <http://www.climateinvestmentfunds.org/cif/node/2> (last visited May 26, 2012).

<sup>314</sup> *Id.*

<sup>315</sup> *Id.*

vote.<sup>316</sup> Decisions are exercised by consensus.<sup>317</sup> The CTF Trustee is The International Bank of Reconstruction and Development (IBRD), —and holds in trust the funds, assets, and receipts that comprise the Trust Fund, according to the terms entered into with the contributors.<sup>318</sup>

*b. STRATEGIC CLIMATE FUNDS (SCF)*

The programming of the SCF is less advanced than that of the CTF. There are three elements of the Strategic Climate Fund (“SCF”) that operate to advance funds to developing countries.<sup>319</sup> These are overseen by a SCF Trust Fund Committee which decides on operations and activities, composed of eight representatives of contributor countries, which are currently Australia/UK (rotating), Canada, Denmark/Switzerland (rotating), Germany, Japan, Netherlands, Norway, and the United States.<sup>320</sup> There are also eight recipient countries, which are currently Bolivia, Guyana, Indonesia, Kyrgyz Republic, Maldives, Senegal, Tunisia, and Yemen, plus a representative of the World Bank and one representative for the other MDBs.<sup>321</sup>

1. FOREST INVESTMENT PROGRAM (FIP)<sup>322</sup>

First, among the SCF, the Forest Investment Program (FIP) provides financing to countries to help them prepare for and participate in programs that aim to reduce deforestation.<sup>323</sup> Funds can be used for managing forests and for educating indigenous and local communities about forest policies.<sup>324</sup> Governance is equally split between donors (currently Australia, Denmark, Japan, Norway, United Kingdom, United States) and recipients (currently Brazil, Democratic Republic of Congo,

<sup>316</sup> Nakhooda, *supra* note 308, at 4.

<sup>317</sup> *Id.*

<sup>318</sup> Climate Investment Funds, Trustee, <http://www.climateinvestmentfunds.org/cif/trustee> (last visited May 26, 2012).

<sup>319</sup> Climate Investment Funds, Strategic Climate Fund, Governance, <http://www.climateinvestmentfunds.org/cif/node/3> (last visited May 26, 2012).

<sup>320</sup> Climate Investment Funds, SCF Governance, [http://www.climateinvestmentfunds.org/cif/scf\\_governance](http://www.climateinvestmentfunds.org/cif/scf_governance) (last visited May 26, 2012).

<sup>321</sup> *Id.*

<sup>322</sup> *See generally* BENOÎT BOSQUET & KEN ANDRASKO, INTRODUCTION AND EARLY LESSONS -- BRIEFING TO GUYANA CIVIL SOCIETY (Forest Carbon Partnership Facility, Apr. 21, 2010).

<sup>323</sup> Climate Investment Funds, Forest Investment Program, <http://www.Climateinvestmentfunds.org/cif/node/5> (last visited May, 2, 2012).

<sup>324</sup> *See id.*

Indonesia, Mexico, Nepal, Yemen), with decision-making by consensus.<sup>325</sup> As of spring 2011, the pledging level to the FIP is \$577 million USD, \$404 million of which will be provided in the form of grant contributions, with the remaining \$173 million provided as capital contributions.<sup>326</sup>

## 2. PILOT PROGRAM ON CLIMATE RESILIENCE (PPCR)<sup>327</sup>

Second, the Pilot Program for Climate Resilience (PPCR) supports ways to integrate climate risk and resilience into the development strategies of low-income countries.<sup>328</sup> The PPCR became operational in January 2009.<sup>329</sup> Funds can be used to provide technical assistance to help with capacity building, policy reform, and sector investment.<sup>330</sup> As of spring 2011, pledges to the PPCR amount to \$987 million USD, \$615 million of which will be grant contributions, with the remaining \$372 million going toward capital contributions.<sup>331</sup> It is governed by six donor countries (currently Australia/United Kingdom, Canada, Denmark/Norway, Germany, Japan, and United States) and an equal number of recipient countries (currently Bolivia, St. Lucia, Nepal, Niger, Tajikistan, and Zambia), selected on a regional basis.<sup>332</sup>

### c. SCALING-UP RENEWABLE ENERGY PROGRAM FOR DEVELOPING COUNTRIES (SREP)

Third, the Scaling Up Renewable Energy Program in Low Income Countries (SREP), which became operational in 2009, help slow-income countries adopt renewable energy solutions to aid in the

<sup>325</sup> Climate Investment Funds, FIP Sub-Committee, <http://www.climateinvestmentfunds.org/cif/FIP-Sub-Committee> (Last visited May 2, 2012).

<sup>326</sup> Climate Investment Funds, Semi-Annual Report on FIP Operations 3 (June 29–30, 2011), *available at* <http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/FIP%203%20Semi-Annual%20Operational%20Report%2067.pdf>.

<sup>327</sup> Climate Investment Funds, Strategic Climate Fund, *available at*: <http://www.climateinvestmentfunds.org/cif/node/3> (last visited May 25, 2012).

<sup>328</sup> Climate Investment, Pilot Program for Climate Resilience, <http://www.climateinvestmentfunds.org/cif/ppcr> (Last visited May 2, 2012).

<sup>329</sup> *Id.*

<sup>330</sup> *See id.*

<sup>331</sup> Climate Investment Funds, *supra* note 273, at 3.

<sup>332</sup> Climate Investment Funds, PPCR Sub-Committee, [http://www.climateinvestmentfunds.org/cif/ppcr\\_subcommittee](http://www.climateinvestmentfunds.org/cif/ppcr_subcommittee) (last visited May 2, 2012).

development of their power generation sectors.<sup>333</sup> Funds can be used to provide policy support, technical assistance, financial management, and sector investment.<sup>334</sup> As of fall 2011, SREP had \$352 million USD pledged for grants and concessional loans for deployment of proven “new” renewable energy technologies.<sup>335</sup> Governance is from up to six donor countries (currently Japan, Netherlands, Norway, Switzerland, United Kingdom, and United States) with an equal number of recipient countries (currently Armenia, Ethiopia, Honduras, Kenya, Nepal, and Yemen).<sup>336</sup>

## V. APPLYING UNIQUE ASPECTS OF NEW INTERNATIONAL PUBLIC LEGAL GOVERNANCE

### A. A ‘TRUE’ COMPASS

The current need for climate change international capital flows is different in design and function than traditional foreign aid which is provided for multiple purposes and various ends. These capital flows have sometimes been diverted, and are controversial.<sup>337</sup> There are many reports of donor countries freezing tens and hundreds of billions of dollars in financial accounts associated with countries in political transitions.<sup>338</sup> When bilateral aid is diverted within a recipient country from one beneficiary to another, it may still achieve its general objective of helping development.

Climate change funding, because it serves an urgent international objective, rather than only national interests, cannot be subject to diversion among effective and ineffective projects. For example, a deviation with funding of aid from its intended purposes to some

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<sup>333</sup> Climate Investment Funds, *Scaling Up Renewable Energy Program in Low Income Countries*, <http://www.climateinvestmentfunds.org/cif/srep> (last visited May 2, 2012).

<sup>334</sup> *Id.*

<sup>335</sup> *Scaling-Up Renewable Energy Program for Low Income Countries*, CLIMATE FUNDS UPDATE, <http://www.climatefundsupdate.org/listing/scaling-up-renewable-energy-program> (last visited Feb. 26, 2012).

<sup>336</sup> Climate Investment Funds, SREP Sub-Committee, [http://www.climateinvestmentfunds.org/cif/SREP\\_Sub-Committee](http://www.climateinvestmentfunds.org/cif/SREP_Sub-Committee) (last visited May 2, 2012).

<sup>337</sup> *See Corruption and Aid*, TRANSPARENCY INTERNATIONAL, [http://www.transparency.org/global\\_priorities/poverty/corruption\\_aid](http://www.transparency.org/global_priorities/poverty/corruption_aid).

<sup>338</sup> Deborah Ball & Cassell Bryan-Low, *Banks Scrutinise Regimes' Assets*, WALL ST. J., Feb. 13, 2011, reprinted in FINANCIAL TIMES, available at <http://www.efinancialnews.com/story/2011-02-23/swiss-banks-freeze-assets>; Helene Cooper, *U.S. Freezes a Record \$30 Billion in Libyan Assets*, N.Y. TIMES, <http://www.nytimes.com/2011/03/01/world/africa/01assets.html>.

alternative application, which pumps money into the local economy but does not reduce GHG emissions and does not satisfy core objectives of carbon finance, may help national development while actually exacerbating international warming. More than just national development is involved with carbon financing. Such financing is designed to satisfy demanding international objectives, not only to facilitate national development. Limiting global warming to a no more than 2.5 degrees Centigrade increase from pre-Industrial Revolution levels will require stabilizing carbon dioxide concentrations in the atmosphere to no more than 450 ppm.<sup>339</sup>

Therefore, climate funding must ensure that expenditures yield absolute results, and that there is no deviation, displacement, or so-called “leakage” of carbon generation from one source or region to another. An official with the Intergovernmental Panel on Climate Change (IPCC) concluded that developed nations will need to slash CO<sub>2</sub> emissions almost entirely by 80 to 90 percent by 2050 to hold GHGs to 450 ppm in the atmosphere.<sup>340</sup> Complicating this, CO<sub>2</sub> lingers in the atmosphere, thus causing concentrations to hold steady for decades,<sup>341</sup> perhaps even hundreds of years.<sup>342</sup> If climate policies do not reduce greenhouse gas emissions, it is expected the global average temperature will rise by 2 to 11.5°F by the end of the 21st century (compared to 1980–1999).<sup>343</sup>

According to some scientists, it may be necessary to limit the increase in Earth “surface temperature to no more than 2–2.5 degrees Centigrade above. . .the fifteen degree Centigrade” Earth temperature.<sup>344</sup>

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<sup>339</sup> See STEVEN FERREY, ENVIRONMENTAL LAW: EXAMPLES AND EXPLANATIONS 236 (5th ed. 2010). At such modest levels, the degree of warmings is not expected to result in radical loss of ice sheet, sea level rise, and shift of agricultural areas. *Id.*

<sup>340</sup> Steven Ferrey, *The Failure of International Global Warming Regulations to Promote Needed Renewable Energy*, 37 B.C ENVTL. AFF. L. REV. 67, 72 (2010) (citing Rick Mitchell, *IPCC Official Says Industrialized Nations Must Cut Emissions Up to 95 Percent*, 39 ENV'T REP. (BNA) 1917 (2008)).

<sup>341</sup> NAT. ACAD. OF SCI. ET AL., UNDERSTANDING AND RESPONDING TO CLIMATE CHANGE 16 (2006).

<sup>342</sup> See Susan Solomon et al., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, 106 PROC. NAT. ACAD. SCI. 1704, 1704 (2009) ( Instead of lasting 100 years, CO<sub>2</sub> warming impact could last 1,000 years or more).

<sup>343</sup> United States Global Change Research Program, Global Climate Change, <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/global-climate-change#key4> (last visited May 31, 2012).

<sup>344</sup> See Michael MacCracken, *Prospects for Future Climate Change and the Reasons for Early Action*, 58 J. AIR & WASTE MGMT. ASS'N 735, 735 (2008); see also TONY BLAIR, THE CLIMATE GROUP, BREAKING THE CLIMATE DEADLOCK: A GLOBAL DEAL FOR OUR LOW-CARBON FUTURE 9 (2008).

Over the past 10,000 years, mean temperature has only varied by about one degree Celsius (less than 2 degrees Fahrenheit).<sup>345</sup> This will require a sharp reduction of emissions over the next generation, and to “near zero by 2100.”<sup>346</sup>

Members of the worldwide 350 campaign, which includes climate leaders such as Dr. James Hansen, Archbishop Desmond Tutu, Bill McKibben, and Ross Gelbspan, advocate that 350 parts per million is the safe upper limit for CO<sub>2</sub> in our atmosphere.<sup>347</sup> Scientists have noted that we are currently at 390 ppm and continuing at this level will mean risking reaching tipping points after which irreversible consequences are expected, such as the melting of the Greenland ice sheet and significant methane releases from heightened permafrost melt.<sup>348</sup> In 2012, the United Nations Environment Programme noted that 2011 broke records for extreme climate and weather events.<sup>349</sup> Carbon sinks absorb more carbon than they release, and include forests, soils, and oceans.<sup>350</sup> Scientists have reported that carbon sinks are not keeping up with the pace of emissions.<sup>351</sup>

The existing international carbon agreement, the Kyoto Protocol, applies to regulate only twenty percent of the nations that signed the Protocol.<sup>352</sup> The United Nations Framework Convention on Climate Change (UNFCCC)<sup>353</sup> has 193 member countries and the EU.<sup>354</sup>

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<sup>345</sup> U.N. Env't Programme, Temperature and CO<sub>2</sub> concentration in the atmosphere over the past 400 000 years, <http://www.grida.no/publications/vg/climate/page/3057.aspx> (last visited May 26, 2012).

<sup>346</sup> MacCracken, *supra* note 344, at 735.

<sup>347</sup> 350 Science, 350.ORG, <http://www.350.org/en/about/science> (last visited May 31, 2012).

<sup>348</sup> *Id.*

<sup>349</sup> 2012 U.N. Env't Programme Y.B. 21 U.N. Doc. UNEP/GC.25/INF/2, at 1, *available at* <http://www.unep.org/yearbook/2012>.

<sup>350</sup> *What are carbon sinks?*, FERN, <http://www.fern.org/campaign/carbon-trading/what-are-carbon-sinks> (last visited May 31, 2012).

<sup>351</sup> *Carbon Sinks Losing The Battle With Rising Emissions*, SCIENCE DAILY (Mar. 17, 2009), <http://www.sciencedaily.com/releases/2009/03/090317094729.htm>.

<sup>352</sup> Only 39 of the 193 signatories (~20%) are Annex 1 countries which have carbon limitations imposed, with the United States and Canada not electing to join as of this date. *See* UNFCCC, List of Annex I Parties to the Convention, *supra* note 56. For a list of 151 nations that are not Annex I parties see UNFCCC, List of Non-Annex I Parties to the Convention, [http://unfccc.int/parties\\_and\\_observers/parties/non\\_annex\\_i/items/2833.php](http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php) (last visited June 5, 2012).

<sup>353</sup> *See* U.N. Framework Convention on Climate Change [UNFCCC], Essential Background, *available at* [http://unfccc.int/essential\\_background/items/2877.php](http://unfccc.int/essential_background/items/2877.php) (last visited May 26, 2012).

<sup>354</sup> *See* UNFCCC, Status of Ratification of the Kyoto Protocol, *available at* [http://unfccc.int/kyoto\\_protocol/status\\_of\\_ratification/items/2613.php](http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php) (last visited May 26, 2012).

Nonetheless, most of these 193 signatory and ratifying nations are not Annex 1 countries and thus have no carbon reduction amount imposed on them under the Protocol. As discussed *supra*,<sup>355</sup> only 36 of 196 world countries, responsible for less than 40 percent of world carbon emissions, are subject to any Kyoto controls. According to former UK Prime Minister Tony Blair, “the vast majority of new power stations in China and India will be coal-fired; *not* ‘*may be* coal-fired,’ *will be*.”<sup>356</sup> In 2007 alone, China built more new coal-fired power plants than Britain—the seat of the coal-fired industrial revolution—ever built in its entire history.<sup>357</sup>

Precise targeting and accountability of international fund use is important in climate change funding to a degree not experienced in many other kinds of lending and grants. Unless used precisely for the intended projects and accounted for, not only will internal country welfare be altered, but world welfare may be irreversibly altered. The compass must direct all funds to intended purposes to effectively address climate change, and the world needs to quickly find the ‘true’ orientation and the institutional mechanism for administering this unprecedented commitment.

## B. ENERGY AT THE CENTER OF THE CARBON UNIVERSE

Fossil fuel energy is the core source of GHG emissions now and in the future: ninety-eight percent of anthropogenic CO<sub>2</sub> emissions are from combustion of fossil fuels.<sup>358</sup> Fossil fuel generation results in 64 percent of total atmospheric CO<sub>2</sub>, and this amount has increased significantly since 1990.<sup>359</sup> Power derived from burning gaseous, liquid and solid fossil fuels used to create electric power releases copious quantities of CO<sub>2</sub> into the environment.<sup>360</sup> Approximately 40 percent of

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<sup>355</sup> See *supra* note 56.

<sup>356</sup> BLAIR, *supra* note 344, at 6 (emphasis added).

<sup>357</sup> Keith Bradsher, *China's Green Energy Gap*, N.Y. TIMES, Oct. 24, 2007, <http://www.nytimes.com/2007/10/24/business/worldbusiness/24/power.html>; see also Mark Clayton, “*Global Boom in Coal Power – and Emissions*,” CHRISTIAN SCI. MONITOR, Mar. 22, 2007, at 1, available at <http://www.csmonitor.com/2007/0322/p01s04-wogi.htm>.

<sup>358</sup> ENERGY INFO. ADMIN., U.S. DEPT. OF ENERGY, EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 1998 13 (1999).

<sup>359</sup> See Energy INFO. ADMIN., U.S. DEPT. OF ENERGY, EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2005 xi (2006); *Frequently Asked Global Change Questions*, CARBON DIOXIDE INFO. ANALYSIS CENTER (Apr. 30, 2008), available at <http://cdiac.ornl.gov/faq.html>.

<sup>360</sup> The amount of carbon released per unit of usable energy decreased each time as human population moved from wood to coal as the dominant CO<sub>2</sub>-releasing fuel in the late 19th century,

all CO<sup>2</sup> emissions are attributable to the electric power sector.<sup>361</sup> Energy use, and the construction of fossil-fuel fired power generation facilities, is increasing as population growth and development continue, particularly in developing nations.<sup>362</sup>

Recent trends give no indication of near-term change in developing countries' energy use unless international mechanisms are employed to alter course. GHG annual emissions increased about 70 percent during 1970-2004, with the combustion of fossil fuels accounting for 70 percent of GHG emissions, electric power generation responsible for 40 percent of these CO<sup>2</sup> emissions, and coal-fired electric power generation accounting for about 70 percent of the emissions in this sector.<sup>363</sup> The International Energy Agency forecasts that by 2030, world demand for energy will grow by 60 percent and fossil fuel sources will still supply 82 percent of the total, with non-carbon renewable energy sources supplying only 6 percent.<sup>364</sup> Global energy-related emissions are expected to increase 57 percent from 2005 to 2030.<sup>365</sup> Electric power demand is continuing to increase.<sup>366</sup> At current rates of energy development, energy-related CO<sub>2</sub> emissions in 2050 would be 130 percent of their current levels under the existent pattern.<sup>367</sup>

The future of greenhouse gas emissions is a function of the choice of future electric power production technologies, which is one of the few determinants among those of population, consumption, and

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and again moved from coal to oil in the mid-20th century, and will move toward natural gas in the future. See STEVEN FERREY, *THE LAW OF INDEPENDENT POWER: ENVIRONMENTAL LAW SERIES* (Reuters/Thomson/West ed., 29th ed. 2011).

<sup>361</sup> ENERGY INFO. ADMIN., *supra* note 304, at xiii.

<sup>362</sup> World Bank Statement, Ministerial Segment – COP11 – Montreal 4, available at <http://siter.esources.worldbank.org/ESSDNETWORK/Resources/MINISTERIALSEGMENTCOP11Montreal.pdf>; see generally INT'L ENERGY AGENCY, ORG. FOR ECON. COOP. & DEV., *WORLD ENERGY OUTLOOK 2004* (2004), available at <http://www.iea.org/weo/docs/weo2004/WEO2004.pdf>; INT'L ENERGY AGENCY, ORG. FOR ECON. COOP. & DEV., *WORLD ENERGY OUTLOOK 2010* (2010), available at <http://www.worldenergyoutlook.org/2010.asp>.

<sup>363</sup> Joëlle de Sépibus, *The Liberalisation of the Power Industry in the European Union and its Impact on Climate Change 2* (Swiss Nat'l Centre of Competence in Research, Working Paper No. 2008/10, 2008), available at [http://papers.ssm.com/sol3/papers.cfm?abstract\\_id=1137823](http://papers.ssm.com/sol3/papers.cfm?abstract_id=1137823).

<sup>364</sup> INT'L ENERGY AGENCY (2004), *supra* note 362, at 58–60.

<sup>365</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-151, *INT'L CLIMATE CHANGE PROGRAMS: LESSONS LEARNED FROM THE EUROPEAN UNION'S EMISSIONS TRADING SCHEME AND THE KYOTO PROTOCOL'S CLEAN DEVELOPMENT MECHANISM 48* (2008).

<sup>366</sup> See, e.g., INT'L ENERGY AGENCY (2004), *supra* note 362, at 191.

<sup>367</sup> INT'L ENERGY AGENCY, ORG. FOR ECON. COOP. & DEV., *ENERGY TECHNOLOGY PERSPECTIVES: SCENARIOS & STRATEGIES TO 2050* 55 (2008), available at <http://www.iea.org/textbase/nppdf/free/2008/etp2008.pdf>.

technology choice that can be influenced significantly by international law and policy. If developing nations do not use international financial assistance to control the choice of renewable power options in lieu of conventional reliance on fossil fuel power technologies, the war on global warming cannot be won. Otherwise, the “business-as-usual” increase in electrification in developing countries will negate the cuts that would be accomplished if the Kyoto Protocol were to achieve its targets in the developed nations that it affects.

GHGs in the twenty-first century predominately are about power generation. The single-point nature of power plants’ emissions, the centralized control over most power plant decisions in developing nations, and the rapidly increasing demand for electricity, make electricity generating plants the logical focus for direction of international climate change assistance. A doubling from historic levels of the use of renewable power in developing countries will have to occur by 2035 to hold the line on warming.<sup>368</sup>

Why, given warming imperatives, are fossil fuel projects still funded? The lending of the World Bank to coal-fired power projects does not occur because the Bank pursues an agenda to promote fossil fuel use. Rather, it occurs because the applicant countries, and member countries of the World Bank Board, choose fossil-fuel fired power and defer to the wishes of the recipient member country, in contrast to the renewable energy policies of the Annex I countries, OECD, and other NGOs. It is country self-determination and choice, not international policy, which is still constructing additions to the fossil-fuel economy.

Choices made in the next few years for new power generation technology translate directly to the size of tomorrow’s carbon footprint. The GHG emissions mix resulting from power generation is within legal control of national government policies and international financial incentives necessary to finance developing country electrification. Whether or not governments in developing countries will utilize climate change aid to invert the traditional fossil fuel vector toward renewable electric energy deployment, and do so in time to avert a global warming tipping point, is critical to the Planet.

Low GHG-emission technology exists to accomplish this. Ultimately, the challenge is legal and regulatory: The missing link is the

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<sup>368</sup> Lutz Weischer et al., *Grounding Green Power: Bottom-Up Perspectives on Smart Renewable Energy Policy in Developing Countries 1* (World Resources Inst., Climate & Energy Paper Series 2011, 2011), available at <http://www.wri.org/publication/grounding-green-power>.

institutional mechanism and model to steer and implement proper expenditure of climate funds in developing countries to implement sustainable technologies: “The stakes, for all life on the planet, surpass those of any previous crisis.”<sup>369</sup> The focus must be on the power sector and international mechanisms to affect the choices made therein.

### CONCLUSION. INTERNATIONAL TRANSFORMATIONS AT THE CROSSROADS

The world stands at a crossroad: in the next decade, there will be an unprecedented, massive investment in electrification in developing nations. Once installed, those generation facilities will remain in place, contributing to global warming -or not- for decades and in many cases longer. According to Rajendra Pachauri, United Nations International Panel on Climate Change Chairman: “What we do in the next two to three years will determine our future.”<sup>370</sup> These choices in energy technology, made now, will be the signature of the world carbon footprint for the remainder of this century, during which the Earth may pass the point of no return in terms of global warming impacts.<sup>371</sup> Concerns abound that economic growth combined with reliance on fossil fuels position countries such as China to contribute astronomical emissions amounts.<sup>372</sup>

The urgent and interdependent nature of the problem has implications for how international climate aid is managed and channelled. Each false step disadvantages not only the recipient country, but the world strategy to limit global warming. In order to meet the intensifying climate challenge, the global energy system must undergo a fundamental transformation, with a rapid increase of renewable energy resources applied worldwide.<sup>373</sup> The cost-effective and most accessible place to do this is at the margin, in developing countries where the need for new energy infrastructure is increasing most rapidly and the nature of

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<sup>369</sup> James Hansen et al., *Target Atmospheric CO<sub>2</sub>: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 229 (2008).

<sup>370</sup> See *U.N. Chief Seeks more Climate Change Leadership*, N.Y. TIMES, Nov. 18, 2007, <http://www.nytimes.com/2007/11/18/science/earth/18climatenew.html?pagewanted=all>.

<sup>371</sup> See James Hansen et al., *supra* note 369, at 25–26; Bill McKibben, *Civilization's Last Chance*, L.A. TIMES, May 11, 2008, <http://www.latimes.com/news/printededition/opinion/la-op-mckibben11-2008may11,0,2392815.story>.

<sup>372</sup> *China's projected fossil fuel use 'shocking'*, THE WASH. TIMES (Sept. 17, 2009), <http://www.washingtontimes.com/news/2009/sep/17/study-warns-of-shocking-fossil-fuel-use/>.

<sup>373</sup> See Lutz Weischer et al, *supra* note 368, at 1.

the grid is still changing and expanding. Developing countries are at the forefront of this challenge, since they are expected to add around 80 percent of all new electric generation capacity worldwide in the next two decades.<sup>374</sup> Deferring to recipient countries regarding use of donated funds, without any international institutional controls, may not yield the most long-term lifecycle efficient means to ensure that cost-effective projects are funded to limit additional carbon emissions. For example, if donor countries intend their committed funds to be devoted to new low-carbon renewable power supply infrastructure expansion, they will ask for accountability and enforceability of the eventual expenditure of these funds and the longevity of the investment.

Therefore, international structure and accountability matter. The Kyoto Protocol and World Bank are each as broad in membership as any world initiative and institution. The World Bank has 187 member countries, while the UNFCCC has 191 Parties,<sup>375</sup> and its 1997 Kyoto Protocol has to date only 175 member Parties,<sup>376</sup> and only about 20 percent of these have mandatory GHG emission levels as Annex I countries.<sup>377</sup> Nonetheless, these levels of participation are greater than for any of the other divisions of the World Bank Group, any other MDBs, the GEF or other international institutions.<sup>378</sup>

The conventional focus on developed country abatement of GHGs is not the only focus. The average annual growth rate in primary energy use in developing countries from 1990 to 2001 grew by 3.2 percent per year, more than twice the rate in industrialized countries where growth over the same period was 1.5 percent annually.<sup>379</sup> The US Department of Energy forecasts that energy demand in developing Asia will double over the next twenty five years.<sup>380</sup> Within a decade or two, developed nations will dominate the share of CO<sup>2</sup> emissions, increasing over time.

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<sup>374</sup> See *id.*

<sup>375</sup> See UNFCCC, Kyoto Protocol, [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php) (last visited May 26, 2012).

<sup>376</sup> *Id.*

<sup>377</sup> LARRY PARKER & JOHN BLODGETT, CONG. RESEARCH SERV., RL32721, GREENHOUSE GAS EMISSIONS: PERSPECTIVES ON THE TOP 20 EMITTERS AND DEVELOPED VERSUS DEVELOPING NATIONS 2–3 (2010), available at [http://op.bna.com/hl.nsf/id/thyd-7zhq46/\\$File/CRS%20-%20Comparing%20GHG%20Emissions.pdf](http://op.bna.com/hl.nsf/id/thyd-7zhq46/$File/CRS%20-%20Comparing%20GHG%20Emissions.pdf).

<sup>378</sup> See *supra* Section VI.

<sup>379</sup> See INT'L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2004 39 (2004), available at <http://www.iea.org/weo/docs/weo2004/WEO2004.pdf>

<sup>380</sup> See ENERGY INFO. ADMIN., U.S. DEPT. OF ENERGY, INT'L ENERGY OUTLOOK 2007 (2007), available at <http://www.eia.gov/FTP/ROOT/forecasting/0383%282007%29.pdf>.

“It is expected that global energy use will double by 2040 and triple by 2060, creating a tremendous demand on existing fuel sources.”<sup>381</sup> Unabated, this exponential increase in power demand could tip the global environment thermostat to run-away global warming risk, regardless of what the United States, the European Union, and other developed nations do to reign in their carbon emissions.<sup>382</sup> The International Energy Agency projected that it will require an investment of \$16 trillion USD by 2030 to meet the world’s energy requirements, with \$5 trillion of that amount allocated to electric power production, primarily in Asia and Africa.<sup>383</sup>

The majority of energy and power generation expansion will occur just in Asia over the next decades.<sup>384</sup> Approximately 60 percent of all new power generation capacity financed in developing countries will be in Asia.<sup>385</sup> Some projections estimate that by 2030, Asia alone will emit 60 percent of the world’s carbon emissions.<sup>386</sup>

There are already-demonstrated solutions with implementation of renewable electric power generation technologies.<sup>387</sup> “A handful of developing Asian nations have pioneered new regulatory systems to encourage renewable electric energy programs to reduce the emission of greenhouse gases.”<sup>388</sup> A recent book profiles best practices in countries with different forms of government and different sources of predominant energy use to generate electric power.<sup>389</sup>

In a fast-changing world where burning fossil fuels is the dominant electric energy signature, intensified use of electric power

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<sup>381</sup> Ferrey, *infra* note 386, at 515; INT’L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2004 (2004), available at <http://www.iea.org/textbase/nppdf/free/2004/weo2004.pdf>; Richard A. Bradley, Head, Energy Efficiency & Environment Div. of the International Energy Agency (Dec. 13, 2007), available at [http://www.iea.org/textbase/speech/2007/Bradley\\_IPCC\\_Bali\\_Side-Event2.pdf](http://www.iea.org/textbase/speech/2007/Bradley_IPCC_Bali_Side-Event2.pdf).

<sup>382</sup> See *id.*

<sup>383</sup> INT’L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2003, CHAPTER 7 – ELECTRICITY 339–40 (2003), available at [http://www.iea.org/weo/database\\_electricity/WEO2003-Chapter%207.pdf](http://www.iea.org/weo/database_electricity/WEO2003-Chapter%207.pdf).

<sup>384</sup> See *id.* at 39.

<sup>385</sup> R. David Gray & John Schuster, *The East Asian Financial Crisis – Fallout for Private Power Projects*, PUB. POL’Y FOR THE PRIVATE SECTOR 1 (1998).

<sup>386</sup> See generally Deborah E. Cooper, Note, *The Kyoto Protocol and China: Global Warming’s Sleeping Giant*, 11 GEO. INT’L ENVTL. L. REV. 401, 405 (1999); see also Steven Ferrey, *Power Paradox: The Algorithm of Carbon and International Development*, 19 STAN. L. & POL’Y REV. 510, 515 (2008).

<sup>387</sup> See FERREY, *supra* note 339, at § 2:11.

<sup>388</sup> Ferrey, *supra* note 386, at 526; see generally STEVEN FERREY, RENEWABLE POWER IN DEVELOPING COUNTRIES: WINNING THE WAR ON GLOBAL WARMING (2006).

<sup>389</sup> See generally *id.*

foretells a direct increase in carbon emissions. The future is directly dependent on whether high-carbon fossil fuels or zero-carbon or low-carbon renewable technologies are chosen now to generate power to meet this new, more intensive electricity demand. These choices in sustainable energy technology made now certainly will be the future signature of our carbon footprint during the crucial period of the next half century during which we may pass the point of no return in terms of global warming.

The donor funding roles and inputs are not identical for different carbon finance mechanisms. Many of the new carbon and environmental funding structures—GEF specialty funds, ESMAP, the Forest Carbon Partnership Facility, and the CIF and the SCFs—are funded by a small subset of world nations – in some instances only 8 countries, constituting less than 5 percent of the 196 world nations.<sup>390</sup> With a limited funding base, especially in a time of recession, it is important to choose funding apparatuses that meet the need for sustainability and accountability.

To be successful to limit severe climate change, every country needs to turn the energy base to more renewable sources of electric power and more sustainable solutions. In the calculation of success, every molecule of GHGs, no matter where emitted, has equal detriment in terms of environmental impact on world temperature and the many related consequences. Unlike other environmental pollution, proximity to the source of emissions is not a factor with GHGs which have world-wide impact once emitted. This is truly a world issue, and a problem of the commons.<sup>391</sup>

Therefore, it matters that international capital flows designed to mitigate GHG emissions effectively find their targeted applications. Where aid to a country may typically be equally effective, regardless of whether the country, an MDB, or a donor country determines its use, this is not true with aid for climate change. If this aid is not devoted to GHG emission limitation or adaptation, the entire world loses, not just the recipient country. This is a fundamentally different calculus, and a critical metric in designing the internal public finance structure to manage climate change capital flows.

And this climate change aid is of unprecedented amounts, scope, and duration: \$100 billion USD in “additional” annual capital flow commitment is unprecedented in size. This capital flow involves not just

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<sup>390</sup> See *supra* Section IV.

<sup>391</sup> See generally Garrett Hardin, *The Tragedy of the Commons*, Science, 162 Sci. 1243 (1968).

specific, but almost all, countries in the world. That is an extensive administrative responsibility. All of the 191 members of the Kyoto Protocol involve the entire world of nations. Most United Nations or Kyoto parties are either a donor country expected under the Copenhagen Accord and Cancun Agreements to contribute capital, or a recipient country targeted to make discretionary efforts. In duration, the problem of climate change shows every sign of being a long-term international issue for decades to come, with warming gases, once emitted, lasting from 100 to several thousand years.<sup>392</sup>

Because the demonstrable increase in GHGs will be in developing countries, if an institutional arrangement on climate change is to be effective, it will need to be perceived as legitimate and effective by both donors and recipients of financing. Advocates of use of existing agencies and structures may have to accept the counter-position which involves a degree of duplication of existing capacity through the creation of new mechanisms and a greater role for the UNFCCC Conference of the Parties. On the other hand, those calling for the creation of new institutions may need to concede the counter-position that it may waste precious resources to replicate the staff and services provided by existing international agencies. Many developing countries will likely struggle to convince contributors that their national institutions have the capacity to manage large-scale development finance without the support of development agencies.

Transforming the energy system on this scale will require significantly increased support from developed countries, channeled through bilateral assistance as well as multilateral institutions, as well as philanthropic initiatives. The multilateral development banks can play a significant “multiplier” role and leverage additional investments: For every \$10 billion USD in additional resources, multilateral development banks could deliver \$30 billion to \$40 billion in gross capital flows or more if private capital flows are encouraged or leveraged.<sup>393</sup> The regional development banks, the World Bank, the United Nations system, other multilateral institutions and coordinated bilateral programs are key players for a successful Copenhagen Green Climate Fund.<sup>394</sup> They have a track record of providing instruments to share risk with domestic and international investors and they have experience to support projects.

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<sup>392</sup> See Susan Solomon, *supra* note 289, at 1 (Instead of lasting 100 years, CO2 warming impact could last 1,000 years or more).

<sup>393</sup> U.N. Secretary General, *supra* note 4, at 6.

<sup>394</sup> See *id.* at 7, 17.

Given the immediate fast-start commitment for \$30 billion USD,<sup>395</sup> the multilateral development banks and the regional development banks, together with the United Nations system and bilateral agencies, could respond relatively quickly to a substantial increase in demand for climate-related finance.<sup>396</sup>

With global warming, the metric to guarantee effective international organizational structure is different than for traditional foreign assistance. As Table 9 illustrates, to date, those countries that have committed to finance the \$30 billion USD of fast-start international climate funding have chosen different international organizations to administer the funds and explicit countries to receive the funds for different GHG mitigation and adaptation activities. Many of the thirty-four donor countries have reserved some of their funding for bilateral aid rather than multilateral assistance.<sup>397</sup> Having almost mobilized \$30 billion USD over a three-year period, no country will leverage the pledged amount of \$100 billion USD of additional annual capital alone. With thirty-four donor countries, there must be an international organization which will satisfy requirements for accountable administration, in order for such large sums of international financing to be made available on an ongoing basis.

The urgency of the climate issue, the necessity to address climate mitigation in every nation and especially in developing nations, its magnitude and irreversibility, militate for use of international mechanisms that are proven, reliable, accountable, and can scale-up to massive cash management quickly. This is not an issue on which there is time to experiment. With the World Bank operating as the interim international administrator of the climate funds and CTF since early 2010, a permanent solution acceptable to donors and recipients now must be implemented if world institutions are to deal effectively with a massive assault on climate change. International structure must now be formalized, normalized and coordinated. Under the microscope of world scrutiny and political disagreement on the structure of international and multilateral institutions, form can be everything on climate. Form matters.

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<sup>395</sup> Over the period 2010-2012, developed countries have committed to provide resources approaching US\$30 billion, most of which will probably be direct budget contributions. See *id.* at 5-6.

<sup>396</sup> See *id.* at 6.

<sup>397</sup> See *supra* Table 9.

The most recent events are starting to shape this international climate change fund. The December 2011 United Nations COP-17 climate negotiations in Durban, South Africa, established a new directive for generating a binding agreement by 2015.<sup>398</sup> One of the key products of the conference was the Durban Platform for Enhanced Action, which calls for the participating 194 countries to create over the next four years “a protocol, another legal instrument or an agreed outcome with legal force” to lower greenhouse gas emissions, minimize temperature rise and assist developing countries in pursuing clean energy.<sup>399</sup> The platform will not distinguish between wealthy and developing countries, in that actions by all countries will be included.<sup>400</sup> The European Union, United States, and many developing nations that are most vulnerable to the impacts of climate change pushed to ensure that all countries will be legally bound by the agreement.<sup>401</sup>

The governments at the Conference established that they will finalize the details of the platform before the 2012 summit in Qatar.<sup>402</sup> In order for the period of the new platform to begin in January 2013, the countries will need to solidify the oversight board for the \$100 billion USD Green Climate Fund.<sup>403</sup> There is still a paucity of details regarding how the Green Climate Fund will be financed,<sup>404</sup> with only the size of the commitment and its indefinite duration yet to be determined. The devil is in the details. However, this “devil” can be managed, once some of the governing principles discussed herein are adopted and established.<sup>405</sup>

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<sup>398</sup> John M. Broder, *Signs of New Life as U.N. Searches for a Climate Accord*, N.Y. TIMES, Jan. 24, 2012, <http://www.nytimes.com/2012/01/25/business/global/signs-of-new-life-as-un-searches-for-a-climate-accord.html>.

<sup>399</sup> *Id.*

<sup>400</sup> *Id.*

<sup>401</sup> Jake Schmidt, *Important Progress at Global Warming Negotiations in Durban; Major Work Ahead*, HUFFINGTON POST, Dec. 13, 2011, [http://www.huffingtonpost.com/jake-schmidt/important-progress-at-glo\\_b\\_1144183.html](http://www.huffingtonpost.com/jake-schmidt/important-progress-at-glo_b_1144183.html).

<sup>402</sup> Will Nichols, *UN Chief Calls on Business to Build on Durban Summit Success*, BUSINESSGREEN, Jan. 19, 2012, <http://www.businessgreen.com/news/2139946/chief-calls-business-build-durban-summit-success>.

<sup>403</sup> *See id.*

<sup>404</sup> *Id.*

<sup>405</sup> *See id.*