

Multilateral development banking in a fragmented climate system: shifting priorities in energy finance at the Asian Development Bank

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Abstract Multilateral development banks (MDBs) are increasingly supporting climate change mitigation efforts. However, little is known about how and why this role in climate finance has evolved, and how MDBs are managing this change internally. This paper addresses these questions through an analysis of energy support provided by the Asian Development Bank (ADB). The paper maps trends in the number and monetary value of ADB energy projects and technical assistance activities, presenting descriptive statistics on five categories of energy between 2000 and 2014. The results indicate that ADB while decreased its support for fossil fuel interventions, this sector continues to enjoy substantial funding support. At the same time, support for sustainable energy projects has also increased, reflecting the Bank's evolving priorities and providing a rough proxy for its entry into the climate finance system. These new insights enhance understanding of the changing dynamics of multilateral climate finance and its complex relationship with development finance institutions. Given their financial resources and policy influence, it is essential for MDBs to support the goals of the new global climate finance architecture. But to be considered a serious actor in the climate finance system, ADB has to revisit its policy architecture, strengthen its accounting procedures, and coordinate its efforts with those of other actors across this fragmented system.

Keywords Climate finance · Multilateral development banks · Asian Development Bank · Mitigation finance · Sustainable energy

Abbreviations

ADB Asian Development Bank
AfDB African Development Bank
DMCs Developing member countries

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MDBs	Multilateral development banks
GHG	Greenhouse gas
MW	Megawatts
ODA	Official development assistance
OECD	Organization for Economic Cooperation and Development
SDGs	Sustainable Development Goals
SE4All	United Nations Sustainable Energy for All
UNFCCC	United Nations Framework Convention on Climate Change

1 Introduction

Along with a range of bilateral, multilateral and private institutions, multilateral development banks (MDBs) are becoming key actors in delivering climate finance. As MDBs move in this new direction, they have also evolved from being institutions strictly mandated to alleviate poverty (although some writers argue that MDBs, in reality, serve to maintain the hegemony of rich countries; see, for example, Nakhouda 2011) into active players in what has now become a fragmented and complex climate finance system (see special issue Editorial; Gomez-Echeverri 2013; Greene 2004; Keohane and Levy 1996; Zelli and Van Asselt 2013). The new position for MDBs will be further strengthened by the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement in 2015, both of which institutionalized support for climate finance. How has this changing role in climate finance evolved within MDBs? What are the causes and consequences of this shifting role? How do MDBs address this change internally?

In responding to these questions, this paper maps the changing role of MDBs in the evolving climate finance system. In Sect. 2, I present how MDBs transitioned from purely development-oriented institutions into significant actors intertwined with a fragmented climate finance system. In this section, I also examine how international climate change agreements have steered MDBs in this new direction. Furthermore, I describe the broader consequences of this change for MDBs, in particular how sustainable energy finance became almost synonymous with climate mitigation finance.

In Sect. 3, I focus on the Asian Development Bank (ADB), an MDB in the Asia–Pacific region, to study its development interventions in the energy sector. Just like other MDBs, ADB's initial primary mandate was solely oriented toward development, but it now includes environmental and climate impacts in its interventions (cf. Delina 2011). The choice of ADB as a case study is based on the following reasons. First, ADB is a major regional MDB in terms of its capitalization and geographical area of coverage. In 2013, ADB had a subscribed capital of \$162.8 billion and a membership of 67 countries, 48 of which are in the Asia–Pacific region (ADB 2015b). Second, ADB locates itself and conducts its development work in a region that is home to the largest number of energy poor people (cf. Sovacool 2013; Nakhouda 2011). Third, the Asia–Pacific region possesses huge potential for achieving climate mitigation via a sustainable energy transition (Sovacool 2013; Delina 2011). Fourth, the largest annual funding gap for sustainable energy investment in 2015 is located in this region (SE4All Advisory Board's Finance Committee 2015).

Through a close examination of the policy architecture that defines ADB's strategic orientation, I describe the ambiguities regarding ADB's own interpretation of various climate mitigation technologies. Afterward, I map the volume and trend of climate finance

at ADB to demonstrate whether indeed ADB has become a key actor in the climate finance system. I then use the changing volume of sustainable energy development interventions as a lens to analyze whether allocations in the energy sector have shifted away from greenhouse gas (GHG)-intensive interventions. I use this shifting pattern and the overall change in trends as proxies to ascertain ADB's contributions in an increasingly fragmented climate finance system. I conclude by summarizing the paper's key results, contributions, and limitations, while suggesting future research directions.

2 International agreements as drivers of changing roles for MDBs

Energy policy has come increasingly to the forefront of climate policy. The reason for this is straightforward. Since the energy sector represents the lion's share of global greenhouse gas (GHG) emissions—about 72% of total emissions in 2012 (World Resources Institute 2016), climate policy needs to address energy sector emissions. To avoid dangerous climate change, fossil fuel-based energy systems have to be retired and replaced with low-carbon, sustainable energy systems. In developing countries, energy systems have to be installed or modified to meet the ends not only of climate but also of development, that of universal energy access. Furthermore, this means that energy access in developing countries has to be made affordable, reliable, and sustainable (United Nations General Assembly 2015). This new dual purpose for energy sector development interventions—climate and development—has been, in most part, driven by dynamics at the international level, in particular by international agreements on development, through the SDGs (United Nations General Assembly 2015), and climate, through the Paris Agreement, (UNFCCC 2015).

The United Nations Framework Convention on Climate Change (UNFCCC) and subsequent decisions underscore the requirement for developed countries to mobilize climate finance for developing countries (UNFCCC 1992: Article 4(3); UNFCCC 2014: Decision 1/CP.21, paragraphs 114 and 53; see Editorial to Special Issue).

While international climate negotiations have contributed to driving the climate orientation of energy sector development, the developmental purposes of expanding energy access remain relevant to developing countries (Winkler et al. 2015; Aglietta et al. 2015). Goal 7 of the SDGs highlights universal access of sustainable energy as a key global development goal. SDG7 specifically provides the impetus to address energy poverty and the rapidly growing demand for energy, meet the need for modernizing and expanding energy systems, and provide this energy from sustainable sources (United Nations General Assembly 2015). By the end of 2015, following the SDGs and the Paris Agreement, sustainable energy development assistance has become a vital component for meeting both development and climate mitigation goals. These new international agreements, as a result, strengthened a climate finance system that has major implications for both donor and recipient countries.

However, in most developing countries, meeting the coupled development-climate ambition remains challenging because of the sheer scale and high investment cost required to finance new installations, to develop or strengthen capacity, and to replace high-carbon energy systems (Delina 2011; Miller 2008). Since the national budgets of many developing countries are already subject to funding stresses, financial and capacity building support is often sought externally through development assistance. In the post-Paris regime, interventions for climate mitigation through sustainable energy development need to be

increased to avoid lock-into high-carbon pathways (Aglietta et al. 2015). Such climate interventions also need to be based on the principle of “common but differentiated responsibilities and respective capabilities” as agreed in the UNFCCC [UNFCCC 1992: Article 3(1)] but also additional to traditional development-oriented assistance (see special issue Editorial).

The climate finance system, like the development finance system, comprises a proliferation of old and new channels and agencies that produce a substantial degree of institutional fragmentation and complexity (Zelli and van Asselt 2013; see Editorial to Special Issue). Within this proliferation of channels, MDBs have come to play an increasingly significant role. Over the years, MDBs have steadily been increasing their exposure to energy development interventions that are also beneficial to the natural environment (Delina 2011). In 2014, MDBs have committed up to \$28.3 billion¹ of their resources to climate finance in developing countries, of which 82% were for mitigation purposes (\$23.2 billion). The following MDBs provided the following volume of mitigation finance in 2014 (African Development Bank (AfDB) et al. 2015):

- European Investment Bank, \$5.1 billion (22% of total)
- World Bank, \$6.1 billion (26%)
- European Bank for Reconstruction and Development, \$3.9 billion (17%)
- International Finance Corporation, \$2.5 billion (10%)
- ADB, \$2.1 billion (10%)
- Inter-American Development Bank, \$2.4 billion (10%)
- AfDB, \$1.2 billion (5%)

MDB funding comes from paid-in capital contributions from member governments, and debt raised on capital markets. MDBs then provide development interventions through concessional loans and grants. In the climate finance system, MDBs have become key actors in a patchwork or polycentric system of international and domestic institutions for global environmental governance (Ostrom 2010; Biermann et al. 2009). As MDBs participate in climate finance delivery, they have started making efforts to disaggregate adaptation and mitigation-purposed development interventions, as well as to harmonize their methodologies to account for what constitutes climate finance (e.g., AfDB 2015). In the next section, I take a narrow approach—one that is focused on funding for climate change mitigation, yet not succinctly identified to be “new and additional” investment—to map out how ADB, an MDB in Asia–Pacific region, has been situating itself in this new system.

3 The ADB in a fragmented climate finance system

This section looks at how ADB supports development-climate goals through mapping its entry into the climate finance system. The term “support,” which is used interchangeably with development interventions in this paper, refers to ADB’s technical assistance activities, as well as financial assistance in physical projects (Delina 2011). These interventions are channeled to both public and private sector recipients in the shape of loans, grants, or combination of both. Although much smaller in monetary value compared to physical projects, technical assistance activities are considered since they are essential in early-stage demonstration, capacity development, and early preparatory works, including design of

¹ Monetary values reported in this article are in US dollars.

physical projects. Aside from their project-related uses, technical assistance activities are also important for influencing future investment flows in energy sector development, and in strengthening the capacity for development, operations, and maintenance of energy projects (cf. Delina 2011).

I employ a quantitative assessment to ascertain the extent of ADB development interventions in the energy sector and ADB's contributions to climate finance as seen through the volume of support toward sustainable energy projects. In Sect. 3.1, I outline the methods adopted in the analysis. I then describe the ambiguities in terms of what constitutes climate finance at ADB (Sect. 3.2). As with other development organizations, ADB is yet to adopt a single definition, signifying an internal lack of clarity about the scope of climate finance. Hall (this issue) shows that this kind of ambiguity has repercussions for the overall climate finance landscape. For the purposes of this paper, I interpret any positive improvements in the scale, volume, and trend of financing toward sustainable energy as proxies for ascertaining the extent to which ADB involves itself in a not only fragmented but also ambiguous climate finance system. In Sect. 3.3, I describe the evolution of ADB energy policy architecture informing when and how ADB entered the climate finance system. There, I describe the causes of the policy transition, the internal drivers of the shift toward greater sustainable energy investments, and how this shift is bringing ADB into the climate finance system. To show how this shift occurred, Sect. 3.4 presents the volume and trends of energy sector development interventions at ADB. The mapping exercise concludes in Sect. 3.5 with a discussion on the role of ADB in the climate finance system and its implications for ADB.

3.1 Case study methodology

To ascertain the evolving role of ADB as an actor in the fragmented climate finance system, I examined publicly available project and technical assistance activity documents from the ADB Project Database (ADB 2015a). For this assessment, I looked at 727 disaggregated energy sector development interventions that ADB approved between 2000 and 2014. In case of missing data, I sought clarification from ADB project officers through email. To make the data comparable across time, I have adjusted current dollar figures for inflation bringing them to their 2014 constant values.

The assessment considers only the approved amount and does not attempt to reconcile the data with specific and actual disbursements. While disbursements may reveal more insights, such as fund utilization rates from the perspective of the recipients, the major interest of this paper is in enhancing understanding of ADB's own behavior (this does not mean that understanding recipient/borrower behaviors is unimportant, but it is beyond the scope of this paper). Given this choice, the amounts reported in this paper do not tally with the figures provided in ADB Annual Reports, since the latter only present disbursed amounts. To keep the analysis manageable, I have ignored differences in funding sources, that is, whether the development assistance is a loan or a grant, and whether the assistance is concessional or non-concessional. Moreover, sustainable energy projects were not categorized according to their sources (e.g., wind, hydropower, solar). The paper concedes that these missing aspects are key to better understanding the climate finance system and thus merit future scholarly attention. An assessment that looks at sources of energy, for instance, could yield valuable information as to whether climate finance favors a particular sustainable resource and technology.

3.2 Sustainable energy finance as a proxy for climate finance at ADB

Sustainable energy, as used in this paper, refers to renewable energy technologies together with demand reduction accomplished through energy efficiency and energy conservation (Delina 2011). Sustainable energy development intervention refers to a development project or program that facilitates the introduction (or pilot demonstration), deployment (or installation or construction), and maintenance of sustainable energy systems. This description contrasts with the term “clean energy” as used in ADB. Although “clean energy,” in ADB parlance, refers to development interventions in the energy sector seeking to reduce anthropogenic GHG emissions, it also includes interventions in systems that are non-renewable such as nuclear energy, fossil gas, and fossil-based systems with carbon capture and storage (ADB 2015a). By adopting a normative definition for sustainable energy, which varies from the ADB definition, ambiguities about the different approaches to and variations in defining what constitutes, or what is meant by, sustainable or “clean” energy are reduced, if not eliminated.

Another point of contention in energy sector development is whether large hydropower should be classified as renewable or not. While ADB treats it as a separate category, other MDBs such as the World Bank consider it as a low-carbon solution. In this paper, I follow the ADB convention. By placing large hydropower as a category in itself, the analysis accounts for the critiques regarding huge risks associated with large hydropower resources in terms of its effects on the integrity of river ecosystems and the rights and livelihoods of people living in river basins (cf. Ziv et al. 2012; Stone 2011; Sovacool and Bulan 2011).

Nuclear energy is another contentious energy technology that has to be considered as a separate category. It can be considered non-sustainable because of the non-renewability property of its fuel and the perceived risks toward it, including options for nuclear waste disposal. No nuclear energy project, however, is included in this paper since ADB’s Energy Policy 2009 clearly states it “will not be involved in financing nuclear power generation” (ADB 2009: 4), although ADB acknowledges that nuclear power is “set to stage a comeback especially in the OECD countries and ADB’s larger developing member countries” (ADB 2009: 15). In addition to contention over risks, I argue elsewhere for the exclusion of nuclear energy technologies in climate mitigation since they compete for limited resources that are better spent for other proven and demonstrated sustainable energy installations (e.g., Delina and Diesendorf 2013). Considering the above, the types of energy development interventions at ADB, or from any development organizations, can be limited and grouped according to five categories (see Table 1; cf. Delina 2011).

3.3 Accession to the climate finance system: evolution of ADB energy policy architecture

Established in 1966, ADB seeks to promote regional cooperation through provision of financing for large infrastructure projects, including those for the energy sector in the Asia–Pacific region. From its original development orientation, energy policy at ADB, especially during the last 20 years, has evolved to reflect the emergence of both development and climate considerations in its interventions. The SDGs and the Paris Agreement are expected to further move ADB toward this dual orientation.

ADB policy for energy development intervention was first set out in a coherent policy document in 1995, 29 years after ADB’s founding (ADB 1995). The 1995 policy is generally silent about the environmental implications of energy projects, highlighting

Table 1 Typologies of energy sector development interventions. *Source:* Author

Category	Description
Fossil energy	Business-as-usual and conventional high-carbon, fossil fuel projects, including the extraction, refinement, transport, and distribution of coal, crude oil, or fossil gas that are contributors to anthropogenic emissions. This category also includes fossil fuel combustion for energy purposes with carbon capture and storage facilities
Sustainable energy	Renewable energy or energy efficiency and conservation, or a combination of both Renewable energy includes solar energy, wind energy, geothermal energy, wave energy, tidal energy, biomass energy, waste-to-energy, and hydropower energy of 10 MW or less per installation for electricity generation, heat, and/or transport Energy efficiency and conservation projects include supply-side and end-use thermal and electricity efficiency improvement activities such as: improvements in industry, transport, buildings and appliances; loss reduction in transmission and distribution; improvements in the efficiency of heating systems; and efficiency gained as a result of improved distribution lines
Large hydropower	Hydropower projects in which the installed capacity at a single facility exceeds 10 MW
Electricity transmission and distribution	Systems or networks for transmission and distribution of electric energy for sale to households and industrial and commercial users
Policy, reform, capacity development, and planning support	Development interventions to develop or strengthen energy policy and energy markets; to develop or strengthen human capacity and capability to operate, maintain and control energy technologies and systems, as well as to develop, implement and monitor energy policy; and to develop plans for energy sector development

instead its objective to attract private sector participation and its preferential treatment for public sector projects in countries willing to undertake restructuring reforms. In the year 2000, ADB reviewed its 1995 policy amidst growing recognition of environmental risks in investment decisions (Buntaine 2011). As a result of the review, ADB had begun integrating environmental considerations into its energy development interventions (Delina 2011; Nakhoda 2008).

From 2006 to 2008, ADB initiated another review to assess the relevance and effectiveness of its energy policy (ADB 2007). The review occurred conspicuously at a time of increasing international concern about climate change (e.g., Stern 2006; IPCC 2007). The climate connection was clear in the reference to “growing concerns about greenhouse gas emissions and their effects on global warming, and climate change” (ADB 2007: 5) as an impetus for the review. Furthermore, ADB highlighted the need for GHG emissions reduction initiatives through energy efficiency and renewable energy as a strategic objective (ADB 2007: 23, 27). The review resulted in a new policy called “Energy Policy 2009”. The policy document is built on three pillars: promoting energy efficiency and renewable energy; maximizing access to energy for all; and promoting energy sector reform, capacity building and governance (ADB 2009). The explicit mention of support for sustainable energy development in Energy Policy 2009 cemented the relationship between energy policy and climate change:

To help DMCs [developing member countries] move toward a low-carbon economy, ADB will provide assistance for mainstreaming climate change mitigation activities in DMCs, such as (1) financing greenhouse gas abatement projects, (2) conducting upstream analysis of options for meeting power sector expansion, (3) incorporating carbon footprints of the projects, and (4) providing support to build technical capacity to identify and evaluate low-carbon development strategies (ADB 2009: 5).

Energy Policy 2009 aims to implement this vision by establishing an ADB annual lending target of \$2 billion from 2013 via additional installed capacity in what it calls the “clean energy” sector (ADB 2009). The shift toward substantial “clean energy” lending at ADB also grew out of recognition of calls from the international community “for drastic measures to significantly reduce and stabilize the concentration of greenhouse gas levels in the atmosphere” through, among others, financing “the transition to cleaner energy” (ADB 2009: 16).

Although the policy was established in recognition of the need to reduce emissions in the energy sector as a response to climate change, climate is but one of three motivations for this new investment direction. ADB also continues to aim for: energy security in the context of a foreseeable future where developing countries in Asia–Pacific increase their economic activities, living standards, and household consumption; and access to modern and reliable energy services as a factor for reducing poverty (ADB 2009: 2–3). Accordingly, ADB’s energy policy does not necessarily stop its development interventions for fossil energy, particularly coal and oil (ADB 2009: 4, 7, 8, 28–29).

Despite these contradicting objectives, Energy Policy 2009 was still able to situate ADB as an institution that brings together development and climate goals under one overarching policy orientation. By explicitly acknowledging the climate implications of its development interventions in its framework policy, and openly mentioning its intent to support climate mitigation efforts through increased financing, ADB has, in effect, joined several other actors in the climate finance system. In the next section, I provide a detailed discussion as to whether ADB has achieved this goal.

3.4 View from 15 years of energy sector development interventions

Using the energy development interventions typology described in Table 1, this section presents the volume and trends of ADB’s energy sector interventions between 2000 and 2014. The goal of the section is to illustrate shifting patterns in allocation priorities for sustainable energy in contrast to fossil energy. This way, the extent of ADB involvement in the climate finance system can be ascertained.

Viewed against total ADB portfolio on both concessional and non-concessional assistance, the energy sector has become prominent. During the period 2000–2014, ADB maintained and even increased its total development portfolio, including during the global financial crisis of 2008–2009. ADB’s total annual lending portfolio has always been in excess of \$12 billion since 2007 (Fig. 1). In 2009, in spite of the global financial crisis, ADB was still able to disburse close to \$16 billion of development interventions. That year’s disbursements even represented its highest volume since 2000.

Also during the period 2000–2014, the volume of disbursements for energy sector development has risen. On average, the energy sector received 20% of total annual ADB development interventions, ranging from a low of 12% in 2001 and 2003 to as high as 32% in 2011. Since 2008, ADB interventions for energy sector development have been in excess of \$2 billion per year—evidence of its strong support for the sector. In 2011, the volume of

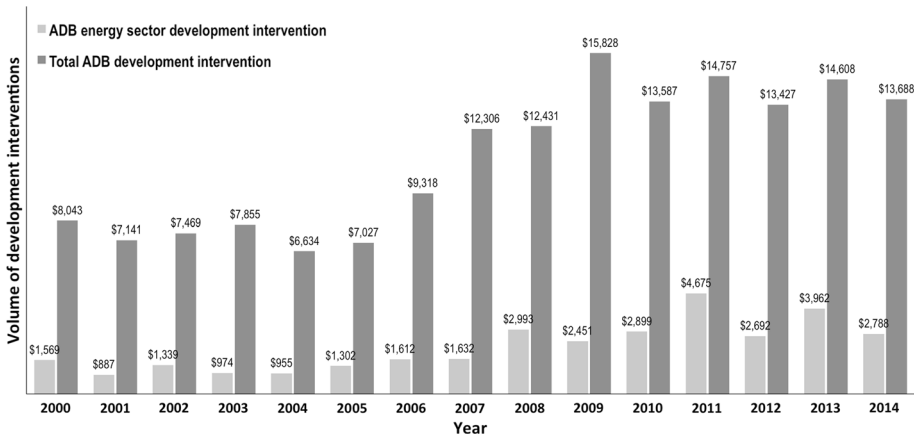


Fig. 1 ADB energy sector development interventions compared to total ADB interventions from 2000 to 2014, in 2014 \$ million. *Source:* Author calculations based on ADB Annual Reports 2000–2014

energy development interventions hit \$4.7 billion—the highest between 2000 and 2014. The growth of energy sector development interventions vis-à-vis total ADB disbursements shows that energy has become an important sector in ADB’s development efforts.

Between 2000 and 2014, ADB approved 224 physical projects and 503 energy-related technical assistance activities totaling \$40 billion. Figure 2 shows the distribution of these interventions, in terms of volume, while Fig. 3 shows the number of projects supported. Sustainable energy development interventions totaled \$10.2 billion (see Fig. 2) for 67 physical projects and 142 technical assistance activities (see Fig. 3). Interventions for fossil energy development amounted to \$9.8 billion (see Fig. 2) for 39 physical projects and 50 technical assistance activities. Large hydropower development, totaling \$2.8 billion, supported 17 physical projects and 28 technical assistance activities. Across the five

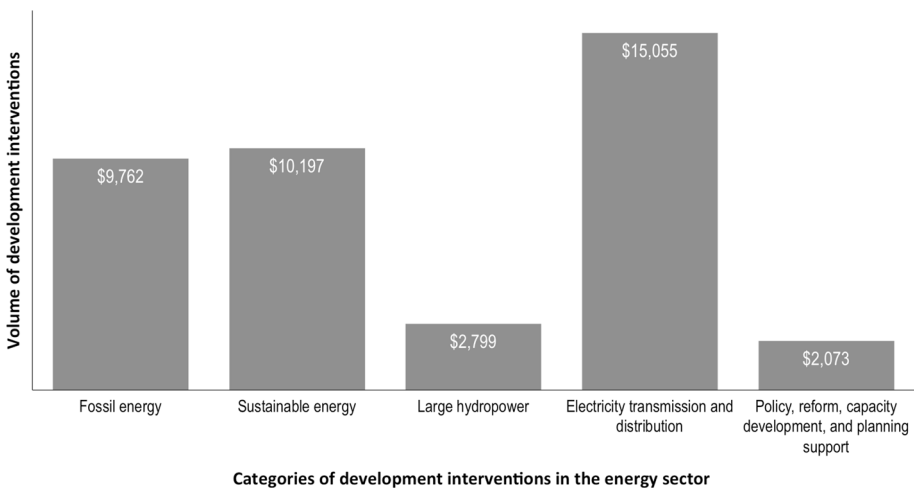


Fig. 2 Volume of ADB’s energy sector development interventions, in 2014 \$ million. *Source:* Author calculations based on ADB (2015a)

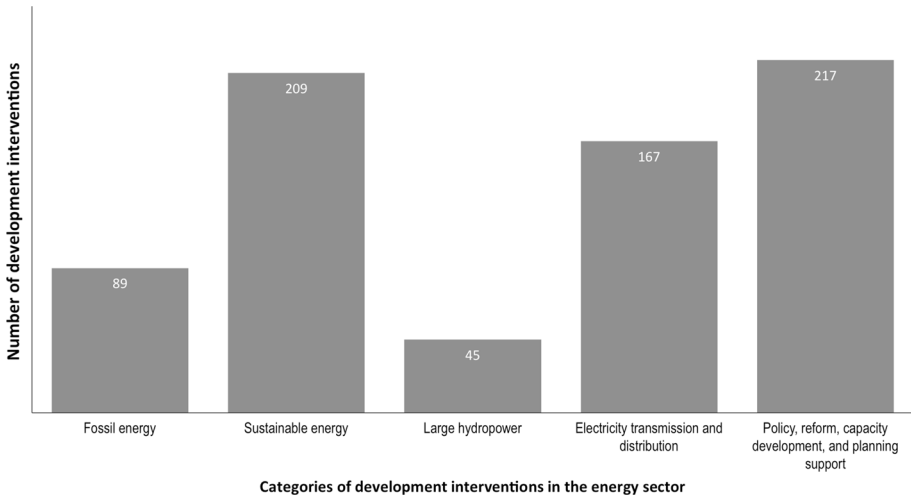


Fig. 3 Number of projects of ADB's energy sector development interventions according to category. *Source:* Author calculations based on ADB (2015a)

categories, the electricity transmission and distribution category took the lion's share of approved funding (\$15 billion, see Fig. 2). However, interventions for policy development, policy and market reform, capacity development, and energy planning topped the five categories in terms of number of approvals (217 in total, see Fig. 3). The focus on grid development and maintenance underlines ADB's aim to bring energy access to industries and to as many people as possible. Between 2000 and 2014, this category received an approved amount of \$15 billion or 38% of the total.

From only eight physical projects and 18 technical assistance activities in the energy sector in the year 2000, annual approvals for physical projects in the sector have reached a level in excess of 20 per year since 2010, while the number of technical assistance activities has exceeded 50 per year since 2011. The number of activities supporting the energy sector, disaggregated according to category, also shows a relative increase (see Fig. 4). Sustainable energy development interventions, which started with only two projects in 2000 (Delina 2011), reached their peak in 2012 with 33 projects approved. The number of fossil energy and large hydropower projects, by contrast, peaked in 2005 and either moved downhill or maintained their 2005–2006 levels. Averaged annually for the last 15 years, the approved number of interventions for sustainable energy stood at fourteen, while only six were approved for fossil energy.

ADB's energy sector development interventions have generally increased; nonetheless, a different picture emerges when trends are looked at according to category (see Fig. 5). Beginning in 2008, sustainable energy development interventions increased considerably, and even exceeded the \$2 billion mark in 2013 (Fig. 4). This rise is attributable largely to the approval of a \$660 million loan for the Sarulla geothermal power generation project in Indonesia and a \$1644 million loan for NRL Renewable Power Private Ltd. in India to develop renewable energy projects. However, ADB failed to maintain this level of support in 2014; instead, both the number (see Fig. 4) and volume (see Fig. 5) of interventions dived.

Despite the climate imperative, development interventions for fossil energy had been steadily making a mark in ADB's energy portfolio. Between 2000 and 2014, ADB

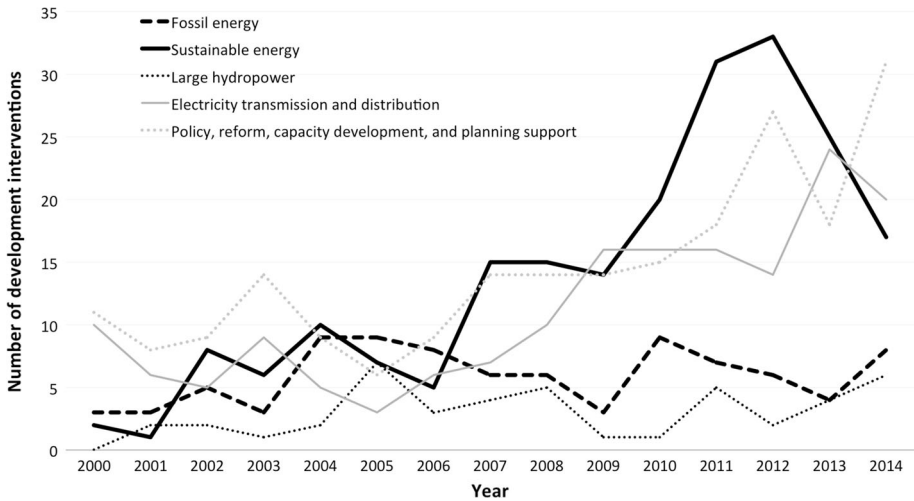


Fig. 4 Trend in the number of ADB’s energy sector development interventions according to category, 2000–2014. *Source:* Author calculations based on ADB (2015a)

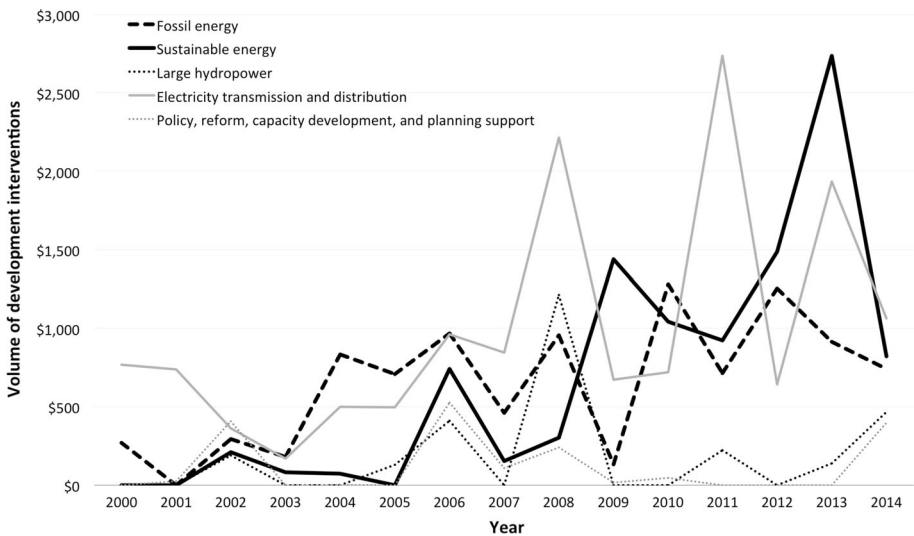


Fig. 5 Volume and trend of ADB’s energy sector development interventions, in 2014 \$ million. *Source:* Author calculations based on ADB (2015a)

provided, on average, \$651 million of development interventions for fossil energy projects per year. In 2009, support for this kind of project dipped in both number (see Fig. 4) and volume (see Fig. 5). While this dip signaled a shift in investment direction following the issuance of Energy Policy 2009, some sort of renaissance in fossil energy support was still evident. Only a year after, in 2010, the volume of interventions for this category had even eclipsed those for sustainable energy (see Fig. 5). Three major approvals made that year contributed to the increase: Bangladesh’s \$266 million gas sector development project; China’s \$116.8 million Tianjin Integrated Gasification Combined Cycle Power Plant

Project; and Pakistan's \$100 million Uch-II power project. In 2012, the level of support for fossil fuel energy was once again apparent with major approvals consistent with the 2010 volume, including: Viet Nam's \$931 million Mong Duong 1 Thermal Power Project, and Uzbekistan's \$650 million Talmarjan Energy Development Project.

One point of interest is the difference between the volume of fossil energy funding and that of sustainable energy funding. Between 2000 and 2014, fossil energy projects received \$9.7 billion worth of development interventions, while sustainable energy received \$10 billion: a margin of 3%. In 2013, this margin stood at \$1.8 billion (or 67%) in favor of sustainable energy (with large hydro involved)—the largest gap in 15 years. Such a huge gap resulted from the approval of India's \$1.64 billion hydropower and wind power project. In 2014, the margin was only \$87 million (or 10%) in favor of sustainable energy. This was the second lowest margin in the last 15 years, with the lowest registered in 2002 at \$79 million (or -38%) in favor of fossil energy. The year 2014 was an interesting year for approvals of energy sector development interventions at ADB. During this year, ADB approved a \$100 million distributed solar project for India's ACME Solar Private Energy Ltd. and, at the same time, coal-based power plant projects in Uzbekistan and India (with \$300 million each). There are several reasons for ADB's continuing support for the discovery, extraction, and distribution of fossil fuels on the one hand, while supporting sustainable energy on the other. One reason was the clear stipulation in the Energy Policy 2009, where ADB mentioned that while it will support projects for their climate benefits, it will also support projects that ensure reliable access to energy. Another probable reason could include ADB's interest to maintain its financial viability—one that ADB may find to be easily achievable by investing in coal-based investments that have traditionally been considered low risk (cf. ADB 2009).

It is also worth examining approvals for large hydropower projects. Despite some evidence of the risks posed by this kind of projects to communities and ecosystems, ADB approved a total of \$2.8 billion for this category or 7% of its entire energy sector portfolio between 2000 and 2014. The highest approved development intervention for this category occurred in 2008 through an \$800 million loan for physical investments in hydroelectric power generation in the Indian state of Himachal Pradesh. Development interventions for large hydropower projects continued in 2014 with the approval of four projects totaling \$469 million. These included projects in Bhutan (\$118 million), Laos (\$150 million), Kyrgyzstan (\$110 million), and Georgia (\$90 million). It is also worth noting, nonetheless, that despite ADB's continuing appetite for supporting large hydropower, ADB has also been providing development interventions for small-scale, often run-of-the-river hydro-power projects, with a number of projects located in small island states in the Pacific region.

While trend and volume analysis is important in mapping ADB's contribution to sustainable energy finance, it is also vital to ascertain how ADB has shifted its allocation priorities away from investments in fossil-based energy systems. To determine whether this shift has occurred, I have averaged the volume of ADB energy sector development interventions over three periods: 2000–2004, 2005–2009, and 2010–2014. Averaging helps to show longer-term trends by smoothing out fluctuations in individual years (see Fig. 6). The point here is to compare the evolution of fossil energy vis-à-vis sustainable energy development interventions.

ADB's development interventions for fossil energy evidently contracted from 31% of total support in 2000–2004 to 24% of total support in 2010–2014. By contrast, approvals for sustainable energy expanded from 7% of total support in 2000–2004 to 19% of total support in 2005–2009, and finally to 34% of total support in 2010–2014. These changing

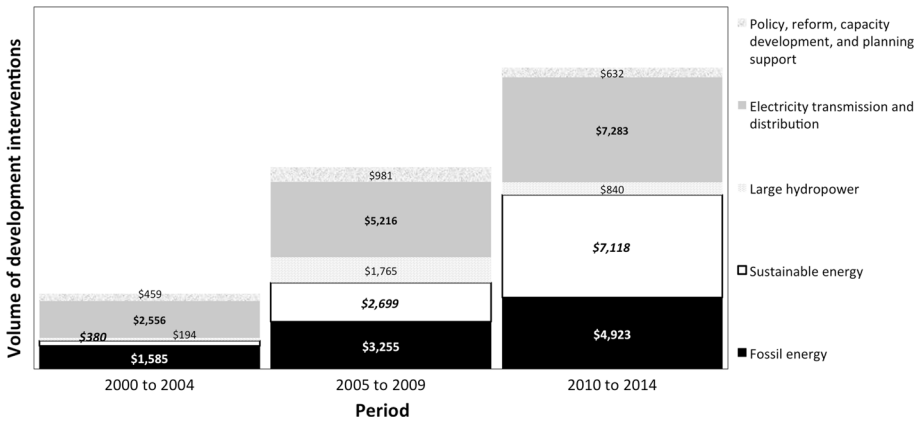


Fig. 6 Shifting priorities in ADB energy sector development interventions from 2000 to 2014, in 2014 \$ million. *Source:* Author's calculation from ADB (2015a)

allocations reveal declining support for fossil fuel-based technologies, and growing interventions for sustainable energy projects. Development interventions for sustainable energy, especially in 2010–2014 increased 2.64 times compared to the previous 5 years (2005–2009). During 2009–2014, when the Energy Policy 2009 has been in effect, there was an apparent leapfrogging of support for sustainable energy as its volume jumped significantly from \$380 million in 2000–2004 to \$7.1 billion. By contrast, development interventions for fossil energy only increased 1.5 times during these two periods.

Despite a contraction in the share of fossil energy, high-carbon investments have nevertheless continued to enjoy substantial support from ADB. Between 2010 and 2014, ADB approved close to \$5 billion in high-carbon projects, up from \$1.6 billion in 2000–2004. This shows that while ADB has joined the climate finance system, ensuring its viability as a financial institution remains a priority.

3.5 ADB in a fragmented climate finance system: Future and prospects

The overall trend in ADB energy sector development interventions shows that ADB has become an increasingly active participant in the climate finance system—a functional overlap that ADB shares with other traditional development actors that similarly evolved toward this new orientation (cf. Zelli and van Asselt 2013). As shown above, there are multiple causes for this shift in focus—indeed in a leapfrogging fashion—but the most obvious is growing recognition of the climate imperative, particularly as a consequence of the rapid and dynamic evolution of international climate change agreements, increased public knowledge of climate change, and the focus on the role of sustainable energy in the global development agenda (see Sect. 3.2).

Beyond these factors, however, ADB also had to contend with the growing role of external non-state actors in the climate finance system, and its effects on ADB's investment decisions. These private players include investors in: socially responsible investments; fixed income investments; utility equities; insurance companies and pension funds; and philanthropic capital (SE4All Advisory Board's Finance Committee 2015). Given the presence of these actors, is ADB's entry into the climate finance system evidence of it following large flows of private energy finance in the Asia–Pacific region? This question is

key, since new private players are fast becoming significant contributors to the growing plurality, fragmentation, and complexity of the system. Moreover, since private firms tend to have larger capital funds and resources than multilateral institutions such as ADB, how could multilateral actors in the climate finance system sustain their position?

In 2015, ADB became the first MDB to be accredited by the Green Climate Fund, the central global vehicle for climate finance. Although the accreditation signals ADB's commitment to becoming a key player in the climate finance system, ADB still has to face, front-and-center, key challenges:

- *Identifying ADB's explicit role in the system.* The climate finance system being ambiguous at best presents an opportunity for ADB to clarify its own role. To what extent could and should ADB contribute to the system? Should ADB cooperate or compete with its multilateral peers in climate finance delivery? How should ADB coordinate its own interventions with its multilateral peers especially as more and more actors populate the climate finance system in ways consistent with internationally agreed norms, processes, and mechanisms (see special issue Editorial)?
- *Sustaining and increasing multilateral funding for sustainable energy development interventions.* Sustained and increased climate finance has implications in the post-Paris and SDGs era where—absent an international mechanism for resource allocation—competition for donor funds among multilateral organizations and other actors is expected. Related to this challenge is maintaining the level of support ADB receives from its donors, whose budgets are subject to their own fiscal and political constraints.
- *Reducing the volume of development interventions for fossil energy.* Given that these investments contradict ADB's climate finance role, and considering the rapid reduction of risk and uncertainty perception toward sustainable energy investments, the challenge now for ADB is how to quickly divest from fossil fuels.
- *Ensuring ADB's financial viability.* ADB as a development bank needs to sustain its financial viability so that it can continue to provide support for development. How should ADB reconcile its role in climate finance with its role as a viable, solvent, and liquid financial institution?
- *Accounting for "new and additional" climate finance.* As discussed above, sustainable energy finance does not necessarily constitute climate finance. Using sustainable energy finance as proxy for climate finance has, in itself, very limited implications. How should ADB help in accounting for climate finance as a separate consideration from poverty alleviation (cf. Winkler et al. 2015)? How should ADB account for GHG emissions produced or reduced following its interventions (cf. Aglietta et al. 2015)?

These are all key questions only partly within the scope of the current paper, but addressing them would improve our understanding of the role of ADB in the climate finance system, as well as the extent of its contribution to system fragmentation.

4 Conclusion

In assessing the volume and number of ADB development interventions in the sustainable energy sector in developing Asia and the Pacific over a period of 15 years, I have shown the substantial and sustained increase in development interventions toward this sector. Viewed from within ADB, sustainable energy has apparently become a paramount

investment interest. The shift in allocation priorities toward supporting climate mitigation, while pursuing energy development at the same time (that is, if sustainable energy interventions could be taken as a proxy to describe climate finance within ADB), marks its entry into a multidimensional, fragmented, and complex climate finance system. ADB thus is no longer solely a development funding institution, but has morphed into a multi-purpose international organization. This study of ADB and its sustainable energy development interventions partly provides evidence that the goals of climate change mitigation and poverty reduction can be complementary and integrated into the operational portfolio of MDBs. International climate agreements have been partially responsible for driving ADB toward this new orientation. However, it is still key to separate both interventions to account for “new and additional” climate finance that the UNFCCC, alongside its attendant agreements, have originally stipulated.

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References

- ADB. (1995). *Bank policy for the energy sector*. Manila: ADB.
- ADB. (2007). *Energy policy 2000 review: energy efficiency for a better future*. Manila: ADB. <http://www.adb.org/sites/default/files/evaluation-document/35439/files/ses-reg-2007-05.pdf>. Accessed 10 May 2016.
- ADB. (2009). *Energy policy*. ADB. <http://www.adb.org/sites/default/files/institutional-document/32032/energy-policy-2009.pdf>. Accessed 10 May 2016.
- ADB. (2015a). *ADB Project Database*. ADB. www.adb.org/projects. Accessed between 1 Dec 2014 and 28 Feb 2015.
- ADB. (2015b). *ADB key facts*. ADB. <http://www.adb.org/about/key-facts>. Accessed 10 May 2016.
- African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank, International Finance Corporation, & World Bank (2015). *2014 joint report on multilateral development banks' climate finance*. <http://www.worldbank.org/content/dam/Worldbank/document/Climate/mdb-climate-finance-2014-joint-report-061615.pdf>. Accessed 10 May 2016.
- Aglietta, M., Hourcade, J.-C., Jaeger, C., & Fabert, B. (2015). Financing transition in an adverse context: climate finance beyond carbon finance. *International Environmental Agreements: Politics, Law and Economics*, 15(4), 403–420.
- Biermann, F., Pattberg, P., Van Asselt, H., & Zelli, F. (2009). The fragmentation of global governance architectures: a framework for analysis. *Global Environmental Politics*, 9(4), 14–40.
- Buntaine, M. T. (2011). Does the Asian Development Bank respond to past environmental performance when allocating environmentally risky financing? *World Development*, 39(3), 336–350.
- Delina, L. L. (2011). Asian Development Bank's support for clean energy. *Climate Policy*, 11(6), 1350–1366.
- Delina, L. L., & Diesendorf, M. (2013). Is wartime mobilisation a suitable policy model for rapid national climate mitigation? *Energy Policy*, 58, 371–380.
- Gomez-Echeverri, L. (2013). The changing geopolitics of climate change finance. *Climate Policy*, 13(5), 632–648.
- Greene, W. (2004). Aid fragmentation and proliferation: can donors improve the delivery of climate finance?. *IDS Bulletin*, 35(3), 66–75.
- IPCC. (2007). *Climate change 2007: synthesis report. Contribution of working groups I, II and III to the fourth assessment report of the intergovernmental panel on climate change*. Geneva: IPCC.
- Keohane, R., & Levy, M. (Eds.). (1996). *Institutions for Environmental Aid: Pitfalls and Promise*. Cambridge, Massachusetts: The MIT Press.
- Miller, A. (2008). Financing the integration of climate change mitigation into development. *Climate Policy*, 8(2), 152–169.

- Nakhooda, S. (2008). *Correcting the world's greatest market failure: climate change and the multilateral development banks*. Washington, D.C: Issue Brief (June), World Resources Institute.
- Nakhooda, S. (2011). Asia, the multilateral development banks and energy governance. *Global Policy*, 2(S1), 120–132.
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20(4), 550–557.
- SE4All Advisory Board's Finance Committee (2015). *Scaling up finance for sustainable energy investments*. http://www.se4all.org/2015_07_08_scaling-up-finance-for-sustainable-energy-investments. Accessed 10 May 2016.
- Sovacool, B. (2013). *Achieving sustainable energy for all in the Asia-Pacific*. Bangkok, Thailand: United Nations Development Program.
- Sovacool, B., & Bulan, L. C. (2011). Behind an ambitious megaproject in Asia: the history and implications of the Bakun hydroelectric dam in Borneo. *Energy Policy*, 39(9), 4842–4859.
- Stern, N. (2006). *The economics of climate change: the Stern review*. Cambridge: Cambridge University Press.
- Stone, R. (2011). Hydropower: the legacy of the three gorges dam. *Science*, 333(6044), 817.
- UNFCCC. (1992). United Nations Framework Convention On Climate Change. Document FCCC/INFORMAL/84.
- UNFCCC. (2015). Decision 1/CP.21. Paris Agreement. Document FCCC/CP/2015/L.9.
- United Nations General Assembly (2015). Transforming our world: the 2030 Agenda for sustainable development. Document A/RES/70/1.
- Winkler, H., Boyd, A., Torres Gunfaus, M., & Raubernheimer, S. (2015). Reconsidering development by reflecting on climate change. *International Environmental Agreements: Politics, Law and Economics*, 15(4), 369–385.
- World Resources Institute (2016). *Climate analysis indicators tool (CAIT), Version 7.0*. Washington D.C: World Resources Institute. <http://cait.wri.org/>. Accessed 10 May 2016.
- Zelli, F., & Van Asselt, H. (2013). Introduction: the institutional fragmentation of global environmental governance: causes, consequences, and responses. *Global Environmental Politics*, 13(3), 1–13.
- Ziv, G., Baran, E., Nam, S., Rodriguez-Iturbe, I., & Levin, S. A. (2012). Trading-off fish biodiversity, food security, and hydropower in the Mekong River Basin. *PNAS*, 109(15), 5609–5614.

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