



ENERGIZING FINANCE
RESEARCH SERIES



 south pole



ENERGIZING FINANCE:
MISSING THE MARK
2020

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FOREWORD

We know that 789 million people lack access to electricity and 2.8 billion lack access to clean cooking. These access gaps translate into a poor individual quality of life, a deepening climate crisis and countries' inability to protect their citizens and economies from the COVID-19 pandemic. The stakes are high for immediate progress on Sustainable Development Goal 7 (SDG7), which calls for affordable, reliable, sustainable and modern energy for all by 2030.

There are two sides to the financing challenge of closing energy access gaps. First, we need financial commitments made to programmes designed to close the gaps. Second, we need these funds to be disbursed. Until disbursements occur, there is no positive impact on the ground.

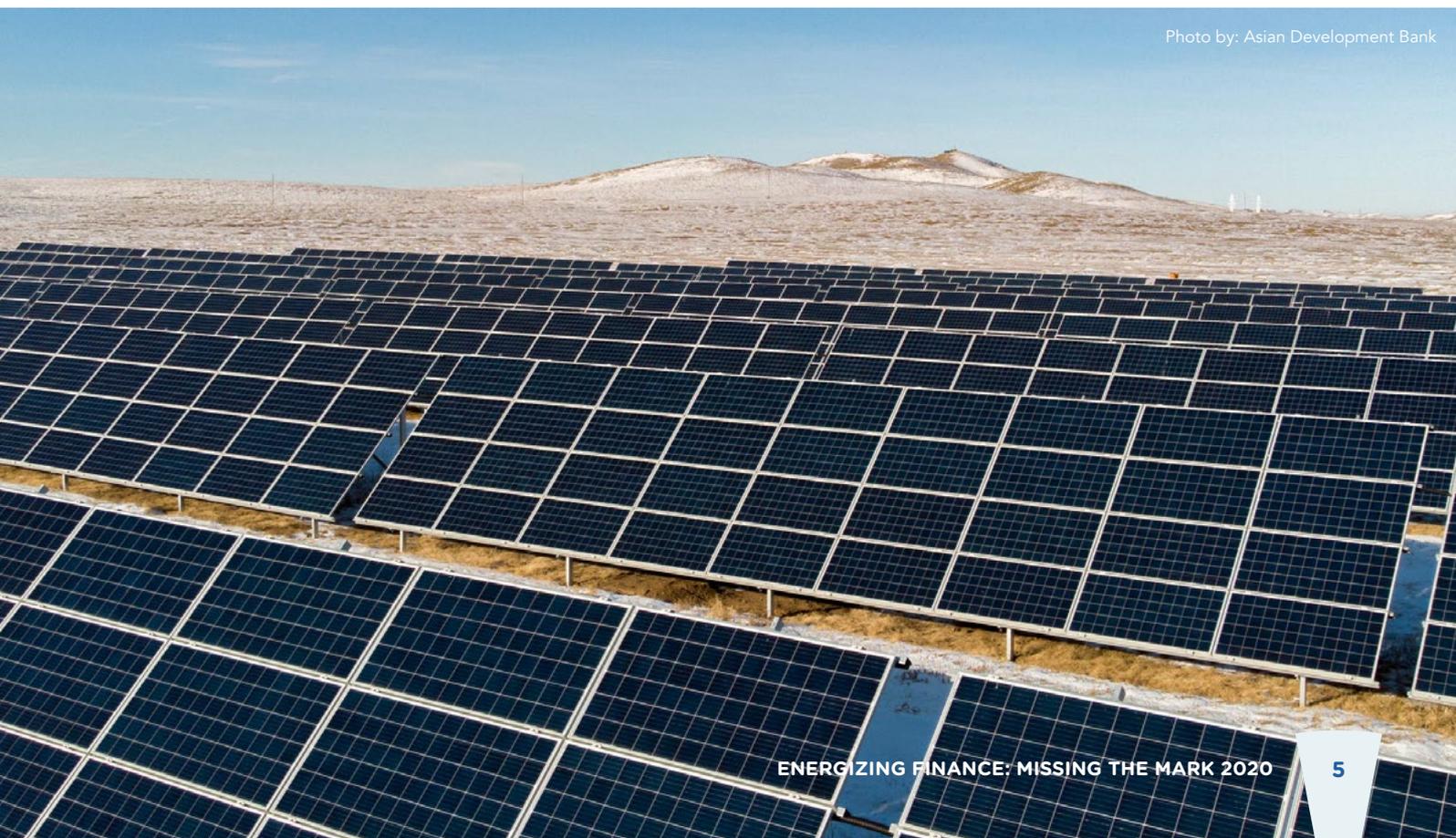
Energizing Finance: Missing the Mark 2020 identifies gaps between commitments and disbursements of development finance for energy in 20 countries in Africa

and Asia with the largest electricity and clean cooking access deficits, referred to as the high-impact countries (HICs). There are many reports that focus on the finance needed or committed to energy access; this report provides much-needed evidence on how efficiently committed energy finance is disbursed.

It shows that already insufficient levels of finance commitments for energy access are suffering from woeful lags in disbursement. This inhibits progress on SDG7, which, as we know, enables all other SDGs. While USD 52 billion in energy finance was committed to these countries between 2013 and 2018, disbursements totalled only USD 32 billion over the same period.

The cumulative effect of disbursement lags, combined with continuing shortfalls in commitments to financing energy access in the HICs, as identified in *Energizing Finance: Understanding the Landscape 2020*, means the world is on track to miss the 2030 SDG7 deadline by decades.

Photo by: Asian Development Bank



This report finds that while investment delays have declined overall since 2002, fully 58 percent of planned financing to the energy sector and 49 percent of projects in HICs were delayed from 2002 to 2018. This is both astonishing and unacceptable, and should galvanise a full range of stakeholders to devise solutions to ensure critical energy access initiatives receive the financing they need – on schedule – to proceed.

The true value of *Energizing Finance: Missing the Mark 2020* is not that it unearths disbursement lags. It also identifies the causes of these lags, which exist throughout the entire energy access ecosystem. By examining the experiences of projects and programmes in India, Madagascar, Myanmar, Nigeria and Rwanda, the report brings to light how factors such as a strong local financial services sector, well-organized administrative processes, robust institutions and regulations, and good coordination underpin efficient disbursement. These are valuable insights for policymakers, development financiers, donors and project developers alike.

This report gives these stakeholders a series of recommendations to act on, including improving initial project design, simplifying administrative processes, facilitating stakeholder interaction and creating an enabling environment to fast-track disbursements. It also stresses the need for stakeholders to collaborate on building standardized tracking indicators for energy finance disbursement, so that constraints can be identified and addressed swiftly.

The findings and advice contained in *Energizing Finance: Missing the Mark 2020* could not come at a more critical time for the international community, grappling as it is with strategies for how to best-respond to COVID-19 to ensure developing countries do not fall further behind economically. Increased access to sustainable energy should be a central part of those strategies, and access can only increase if we address current bottlenecks that delay the disbursement of energy access finance.



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EXECUTIVE SUMMARY

Access to affordable, reliable, clean, safe and sustainable energy is critical to improving the living conditions of people around the world. Today, an estimated 789 million people still do not have access to affordable and reliable electricity sources, and 2.8 billion people¹ are without clean cooking facilities,² greatly affecting their quality of life. **International climate and development finance can help reduce energy finance deficits for both electricity and clean cooking, but what happens if the funds are pledged but never disbursed?**

This report identifies the gaps between commitments and disbursements of development finance for energy,³ as tracked in the OECD Creditor Reporting System (CRS) database. This database consists of official development finance and private development finance from philanthropies. It assesses the efficiency of disbursement, both in terms of the percentage of financial commitments that suffer disbursement delays, and the number of projects that experience delayed implementation. Through a qualitative lens, the report also identifies reasons why development finance disbursement constraints occur.

Monitoring the disbursement gap is important because, while commitments reflect ambition, only disbursements actually deliver impact on the ground. Since Sustainable Development Goal 7 (SDG7) is heavily linked to finance — specifically the disbursement of funds — it is vital to examine the efficiency with which finance is actually disbursed to achieve energy targets.

This *Energizing Finance: Missing the Mark 2020* report is a new edition of the *Energizing Finance: Missing the Mark 2017* report and focuses on 20 countries in Africa and Asia that are classified as high-impact countries⁴ (HICs) by Sustainable Energy for All (SEforALL). HICs are the countries with the most significant electricity and clean cooking access deficits and, therefore, need substantial international and national support. *Energizing Finance: Missing the Mark 2020* numbers are not directly comparable to the findings from the *Energizing Finance: Understanding the Landscape 2020* report, which tracks finance commitments to energy from a broader group of data sources, including private investment.⁵

MAIN FINDING 1



Disbursements for energy in HICs have increased much faster than overall development finance disbursements.

Disbursements for energy projects in HICs **increased by more than 61 percent between 2013 and 2018**. This is much faster than overall development finance disbursements over the same period in the same countries, which was about a 12 percent increase (see Figure 1).

¹ ESMAP's *State of Access to Modern Energy Cooking Services 2020* report, released in September 2020, finds that four billion people around the world still lack access to clean, efficient, convenient, safe, reliable and affordable cooking energy, with 1.25 billion considered in transition and the other 2.75 billion facing significantly higher barriers to access.

² "Access to affordable, reliable, sustainable and modern energy for all – Access to clean cooking", SDG7 – Data and projections, International Energy Agency (IEA), 18 May 2020, <https://www.iea.org/reports/sdg7-data-and-projections/access-to-clean-cooking>

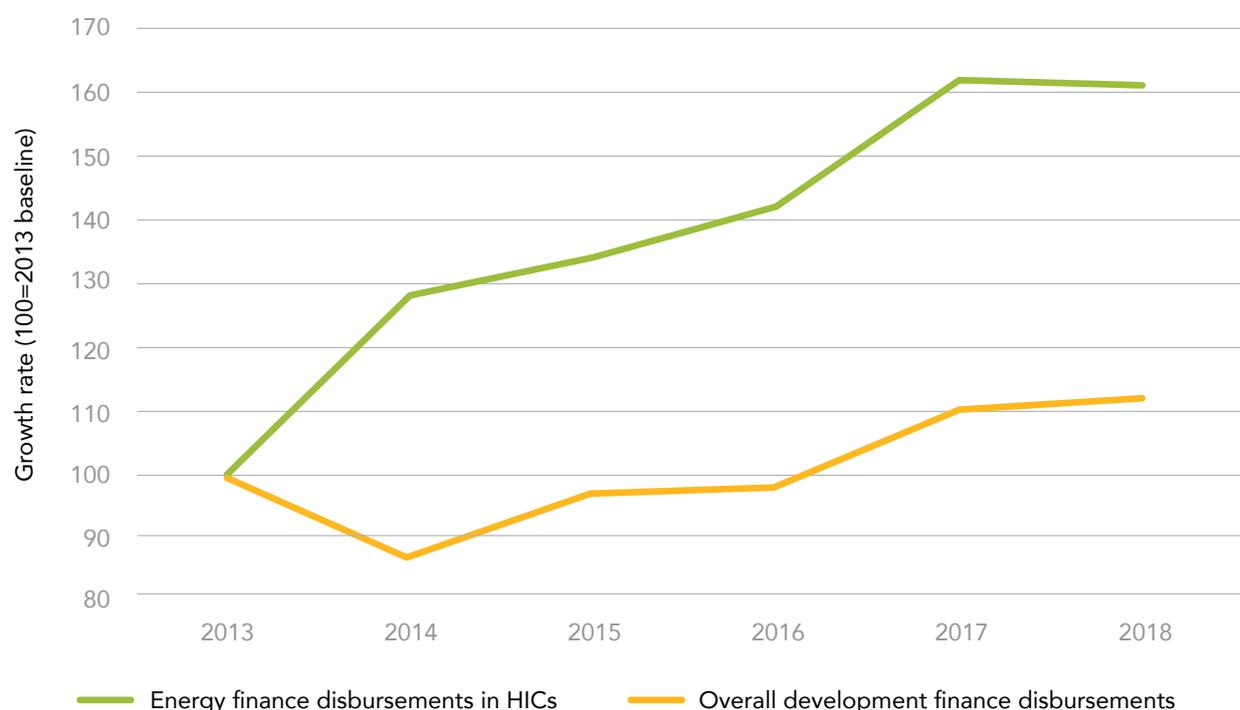
³ A clear and reliable distinction between electricity and clean cooking data was not possible due to CRS data classification constraints. As such, the report refers to energy rather than solely electricity.

⁴ For electricity, the countries are: Angola, Bangladesh, Burkina Faso, Chad, Congo (DR), Ethiopia, India, Kenya, Korea (DPR), Madagascar, Malawi, Mozambique, Myanmar, Niger, Nigeria, Pakistan, Sudan, Tanzania, Uganda and Yemen. For clean cooking, the countries are: Afghanistan, Bangladesh, China, Congo (DR), Ethiopia, Ghana, India, Indonesia, Kenya, Korea (DPR), Madagascar, Mozambique, Myanmar, Nigeria, Pakistan, Philippines, Sudan, Tanzania, Uganda and Vietnam.

⁵ *Energizing Finance: Missing the Mark 2020* includes only the OECD's CRS data due to the report's focus on disbursement numbers, which only the CRS database provides. As a result, the energy sector commitment statistics from both reports are not directly comparable.

FIGURE 1

Growth of energy finance disbursements in HICs compared to overall development finance disbursements, 2013-2018



Source: South Pole 2020, based on OECD CRS data.

MAIN FINDING 2

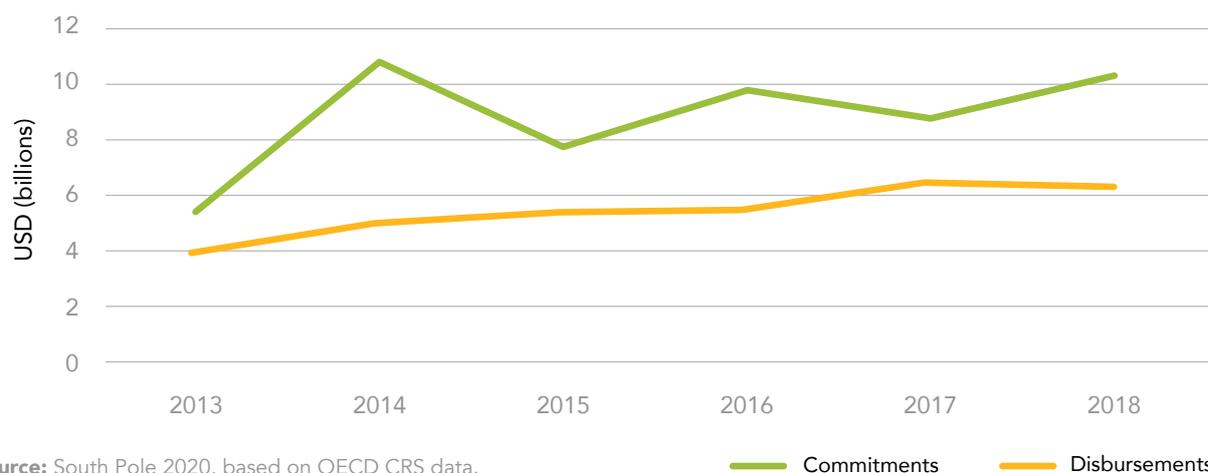


Energy finance disbursements continue to significantly lag behind commitments.

Despite a trend in growing energy finance disbursements, disbursements (USD 32 billion) still substantially lagged commitments (USD 52 billion) in the period 2013 to 2018 (see Figure 2). Given the continued low levels of commitments for energy finance, the lag in disbursements only compounds the lack of finance flowing to the sector, leaving many HICs further and further behind. The message is clear: significantly increased disbursements, at approximately USD 45 billion per year⁶ between 2020 and 2030, are urgently needed to meet SDG7 energy access targets. Aggregate disbursements from 2013-2018 (USD 32 billion) were insufficient to cover even one year of the annual investment need of USD 45 billion.

⁶ IEA, International Renewable Energy Agency, United Nations Statistics Division, World Bank, WHO (2020). *Tracking SDG 7: The Energy Progress Report*. World Bank, Washington DC.

FIGURE 2
Energy finance commitments and disbursements for HICs, 2013-2018

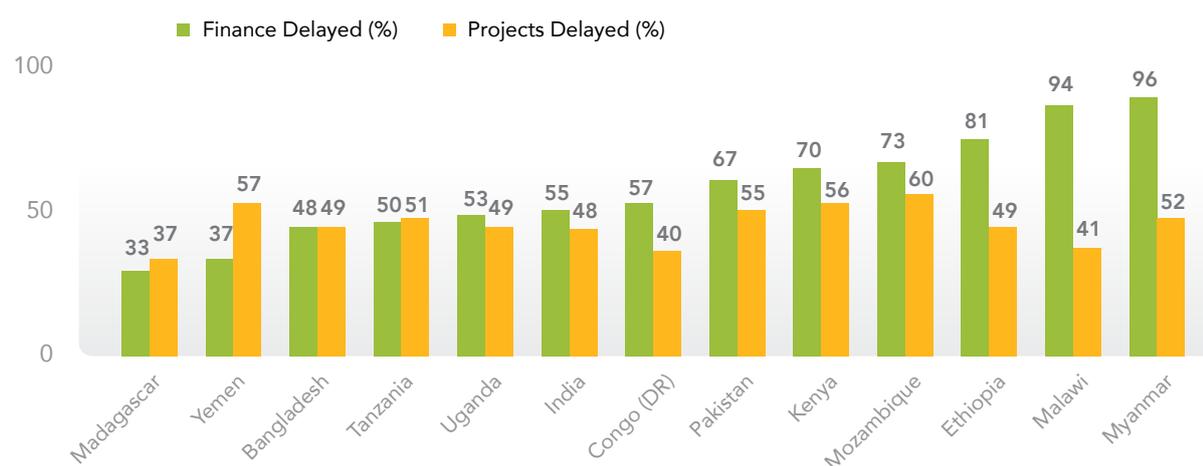


MAIN FINDING 3

On average, disbursement delays have declined since 2002.

Project delays and delayed disbursements were often seen as interlinked. While there has been a slight decline in disbursement delays, they remain substantial; 58 percent of planned disbursements to the energy sector and 49 percent of projects in HICs were delayed in the period 2002–2018. This is a slight improvement on the findings in *Energizing Finance: Missing the Mark 2017*, which reported that 69 percent of planned disbursements were delayed and 52 percent of projects were affected by disbursement delays.

FIGURE 3
Energy projects delayed and financing delayed by recipient, 2002-2018



Source: South Pole 2020, based on OECD CRS data.

Note: Six of the 20 HIC countries are not shown here as incomplete data on commitments accounted for more than 50 percent of total commitments.

These delays seem pervasive as they do not stem only from a few large projects: almost half of all energy sector projects (49 percent) in HICs since 2002 were delayed. In the 13 countries with sufficient data, Myanmar had the longest average delay and Madagascar had the shortest (see Figure 3).

MAIN FINDING 4



Project-specific factors such as sound project design, including consideration for limited local financial services and good coordination among key actors, are crucial to efficient disbursement.

To understand disbursement delays better, this study looked at evaluation reports and databases, and conducted interviews and surveys as part of deep-dives in five countries (India, Madagascar, Myanmar, Nigeria and Rwanda). These countries were selected for their geographic diversity, different stages of development, and different income and energy access levels.

Survey respondents highlighted the significance of project-related factors for low disbursements, including:

- **Cumbersome administrative processes and lack of capacity among donors and implementing entities.** For example, a Global Environment Facility (GEF)-UNDP project aimed at reducing greenhouse gas (GHG) emissions in the Indian states of Jharkhand and Manipur was not as successful as expected because of significant delays due to administrative processes (delayed clearance) at the federal level, notably from the Department of Economic Affairs.
- **Design flaws that hinder project execution.** For example, the Promoting Renewable Energy Programme (PREP) in Rwanda, and particularly its sub-project on biodigesters, faced disbursement delays because the initial project design was not adapted to local end users' capacity and consumption habits. Failing to consider potentially limited local access to financial and banking services in project design may also present disbursement and implementation constraints.

In summary, insufficient committed investment, coupled with continued disbursement delays and project-specific weaknesses jeopardize achievement of SDG7 targets and the provision of energy for the most vulnerable in society. Not only is there a pressing need to significantly increase finance commitments to the energy sector, as set out in SEforALL's report *Energizing Finance: Understanding the Landscape 2020*, **it is also imperative to increase the speed of disbursing energy finance. It bears repeating that only disbursed money can have an impact on the ground.**

POLICY RECOMMENDATIONS

This report recommends that national policymakers, bilateral and multilateral development agencies, and financial institutions take the following steps to accelerate the disbursement of energy finance:

- **It is imperative that national policymakers improve the country-level factors that can accelerate disbursements for energy projects**, including policies and programmes that improve access to local finance.
- Donors and development finance institutions (DFIs) should **combine investment programmes with technical assistance and capacity building** for recipient countries and institutions to increase the efficiency of disbursement at country level.
- **Donors and their agencies, and DFIs and recipient countries, should invest more in sound project feasibility assessment and design, and simplify administrative processes to make them more efficient.**
- **The OECD and its members, particularly multilateral development banks, should introduce more precise and standardized tracking indicators for energy access finance disbursements** to better measure progress. This will help the global community identify underlying reasons for inefficient disbursement and will inform mitigation actions.



CHAPTER 1 INTRODUCTION



BACKGROUND

Access to affordable, reliable, clean, safe and sustainable energy is an integral component of the UN Sustainable Development Goals (SDGs). In 2020, it is estimated that 789 million people do not have access to an affordable and reliable electricity source, and 2.8 billion people are without clean cooking facilities.⁷ There is an urgent need to address this critical lack of access to electricity and clean cooking to improve living conditions for people around the world and meet the targets set out in SDG7.

The flow of international climate and development finance targeting electricity and clean cooking access in developing countries is a key component in supporting action toward SDG7.

In this context, SEforALL and its partners produce a series of reports under the auspices of the *Energizing Finance* research series, which provide a systematic analysis of finance flows and market trends in developing countries. The reports include:

- *Understanding the Landscape (Tracking Finance for Electricity and Clean Cooking in High-Impact Countries)*
- *Missing the Mark (Identifying Gaps and Lags in Disbursement of Development Finance for the Energy Sector)*
- *Taking the Pulse (Understanding Energy Access Market Needs in Five High-Impact Countries)*

These reports were first published in 2017. New editions of *Energizing Finance: Understanding the Landscape* have been published annually since 2017, and a second edition of *Taking the Pulse* was published in 2019. This is the second edition of the *Energizing Finance: Missing the Mark* report.

The reports focus on 20 countries in Sub-Saharan Africa and Asia with the highest energy access deficits (referred to as high-impact countries (HICs)). These countries are facing important difficulties in accessing electricity and clean cooking solutions and are consequently those most in need of international and national development finance.

SCOPE OF THE REPORT

In this context, *Energizing Finance: Missing the Mark 2020* provides an updated understanding of the gaps between public sector development finance commitments and disbursements relating to energy projects in HICs, while also identifying the barriers that prevent efficient disbursements, based on a six-year period of analysis (2013–2018). **The ultimate goal is to inform policy and finance decision-makers to enable them to take action to improve disbursement efficiency, and thereby accelerate the deployment of funds for energy projects.**

This report builds on *Energizing Finance: Missing the Mark 2017*. Section 2 summarizes the approach and methodology, then Sections 3 and 4 present energy and clean cooking commitment and disbursement trends. Section 5 investigates disbursement delays and how they differ by country, sector and recipient.

Finally, Section 6 examines additional quantitative and qualitative inputs to aid the understanding of disbursement gaps and provides policy recommendations to facilitate disbursements. Specifically, the analysis tests the strength of the correlation between the World Bank's Regulatory Indicators for Sustainable Energy (RISE) scores and disbursement rates, and reviews disbursement efficiency through an analysis of evaluation reports, databases, and the results of semi-structured interviews and surveys.

⁷ Tracking SDG7: The Energy Progress Report 2020 Accessible at: <https://trackingsdg7.esmap.org/downloads>



CHAPTER 2 APPROACH



STATISTICAL ANALYSIS

This report's statistical analysis is based on data from the OECD's Creditor Reporting System (CRS) database, which contains data on development finance commitments and disbursements for energy and energy access projects. While the *Energizing Finance: Understanding the Landscape* report considers additional data sources, *Energizing Finance: Missing the Mark* analyses only CRS data due to the report's focus on disbursement data, which only the CRS database provides. This means that, for the purposes of this report, commitment and disbursement data only include data from donor countries, multilateral institutions, and multilateral and bilateral development finance institutions (DFIs), as reported in the OECD CRS database. This does not include finance from corporates, impact investors, or overseas development finance from China, India or Russia. This means that figures in this report relating to finance commitments cannot be directly compared with those in the *Energizing Finance: Understanding the Landscape 2020* report, as that report draws from a broader set of data sources.

The trend analysis uses the most recent available data and covers the six-year period between 2013 and 2018. The disbursement constraints analysis examines a longer period from 2002 to 2018 to account for the fact that disbursement of funds for a project may be scheduled over several years.

The CRS database categorizes projects by their purpose through a code system. For energy projects, only the projects coded under '230: II.3. Energy, Total' were considered. As the CRS data do not provide a categorization of clean cooking projects, such projects were identified in the entire dataset by a keyword search algorithm. Data collection includes financial flows concerning commitments, disbursements, disbursement schedules, transaction dates, project start and completion dates, and basic flow characteristics (donor, recipient country and project purpose). Key terms are described in the Glossary.

The trend analysis assesses close to 45,000 energy sector transactions⁸ and over 1,700 transactions for clean cooking between 2013 and 2018 for all recipient countries (not just HICs). For the disbursement constraints analysis between 2002 and 2018, nearly 7,000 projects were analysed. All data are presented in 2018 USD.

The analysis also includes a review of the World Bank's Regulatory Indicators for Sustainable Energy (RISE). RISE scores reflect a country's policies and regulations in the energy sector, and act as a reference point for policymakers to develop policies and regulations that advance sustainable energy goals. This analysis attempts to assess whether (and if so, to what extent) there are parallels between RISE scores (or their evolution over time) and the commitment/disbursement gap.

Details of the methodology used for the statistical analysis are provided in Annex I.

⁸ Transactions are individual record lines in the CRS database that describe either a commitment or a disbursement; a single project could have multiple transactions.

LIMITATIONS OF THE ANALYSIS

The analysis is limited by the completeness and quality of the data, notably the availability in the CRS database of a project's characteristics, e.g. commitment amount, disbursement amount, dates of transactions and expected end date. In addition, disbursement transaction data are recorded only on a yearly basis, which limits the 'resolution' and accuracy of disbursement delays. Recording and reporting transaction data on a quarterly or monthly basis would increase the accuracy of the analysis.

As the CRS database classification is not well suited to researching clean cooking projects (i.e. there is no 'clean cooking' category), a multi-step keyword search was used to identify clean cooking projects in the database. As a result, the data selection/collection may be imperfect, as there is the risk of incorrectly excluding projects that are clean cooking related and incorrectly including projects that are not clean cooking related or only have a minor clean cooking component. For example,

Energizing Finance: Understanding the Landscape 2019 reported an estimated public finance commitment of USD 108 million for residential clean cooking access for 2015–2016. This is far higher than the clean cooking commitment figures from the CRS database discussed in Section 4. This difference highlights the challenge of capturing all clean cooking data in the CRS database without a 'clean cooking' category. See Annex I for more details. Finally, as was also noted in the *Energizing Finance: Missing the Mark 2017* analysis, the CRS coding system is also less suited to distinguishing and tracking off-grid disbursements. Nonetheless, the CRS remains the most complete database of information for development finance for the energy sector. The ability to track successful disbursement of commitments to clean cooking and off-grid projects would benefit from a database that specifically categorizes such projects. As a result of recommendations arising from *Energizing Finance* in 2017, and following consultations with the OECD, a clean cooking, isolated grids and standalone systems category will be implemented for data from 2019 onwards to facilitate such analysis.



CHAPTER

3

TRENDS IN
DEVELOPMENT FINANCE
FOR ENERGY

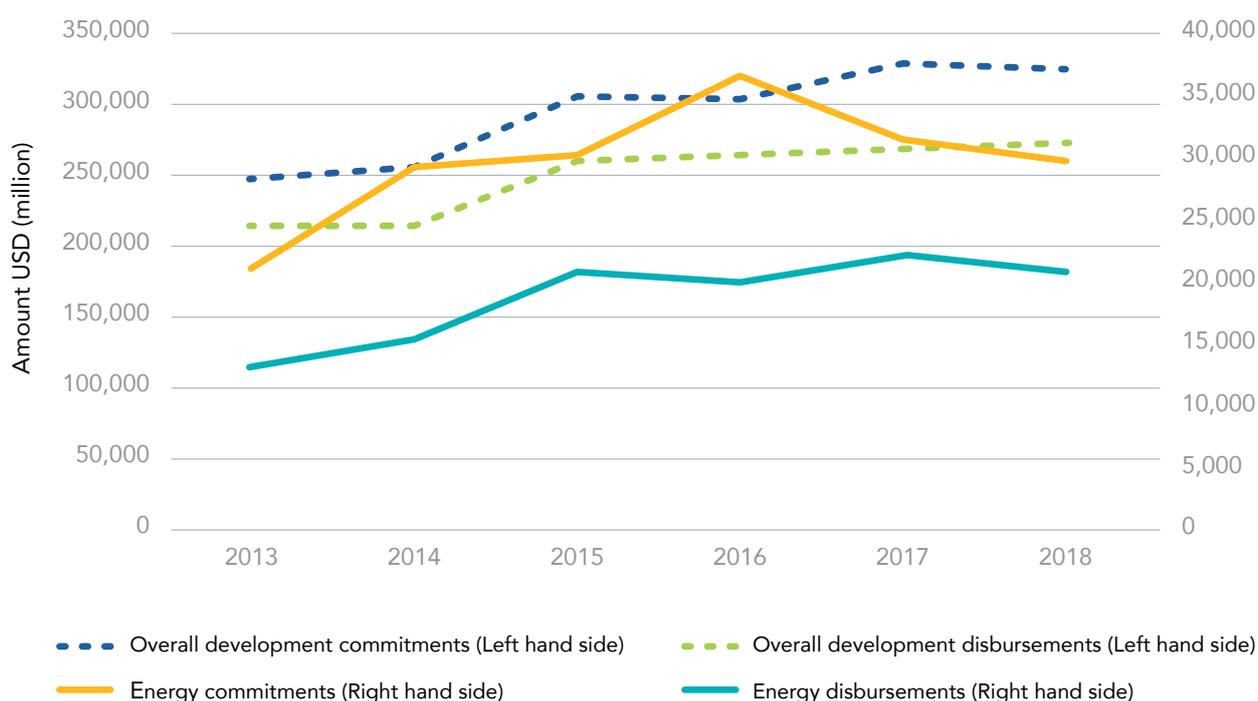
This section presents the findings of trend characteristics for development finance for energy between 2013 and 2018, which mainly includes electricity but also some clean cooking projects.⁹ **A clear and reliable distinction between electricity and clean cooking data was not possible due to Creditor Reporting System (CRS) data classification constraints. As such, this section refers to development finance for energy rather than electricity.**

OVERALL TRENDS, 2013–2018

Between 2013 and 2018, globally both overall development finance commitments and energy commitments increased (see Figure 4). Overall development finance commitments and disbursements increased steadily over this period. In 2018, overall development finance commitments to all recipient countries stood at USD 324 billion, up from USD 249 billion in 2013.

The share of commitments to the energy sector as a proportion of overall development finance commitments globally also rose, from 8 percent in 2013 to 9 percent in 2018. This share peaked at 12 percent in 2016, when overall annual development finance commitments stood at USD 303 billion and annual energy-specific commitments at USD 36 billion. However, these annual differences reflect a natural variation in project-based finance rather than a broader market trend.

FIGURE 4
Annual commitments and disbursements to energy and overall development projects



Source: South Pole 2020, based on OECD CRS data.

⁹ See Glossary for more details.

Energy sector finance commitments also increased between 2013 and 2018. These grew at a higher rate (43 percent) than overall development finance (30 percent). This report notes that energy development finance commitments have been steadily decreasing since 2016. While this may not indicate a longer-term trend, it is important to monitor in the context of achieving SDG7, particularly in high-impact countries (HICs) with significant electricity and clean cooking access deficits, where substantial international and national finance to help increase access is required most.

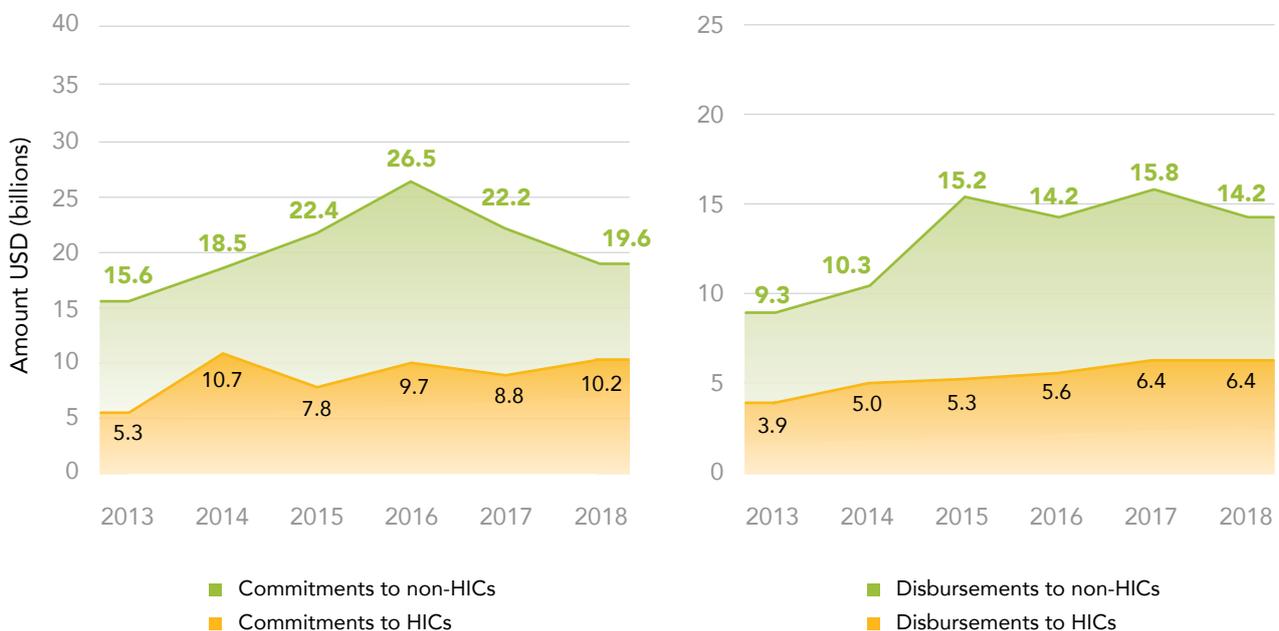
For disbursements,¹⁰ the difference in growth between overall and energy-specific finance is even more significant. Between 2013 and 2018, disbursements increased by 28 percent for overall development finance and by 55 percent for development finance for the energy sector. This shows that disbursements for energy related development finance increased not only

at a faster rate than commitments, but also faster than overall development finance disbursements.

TRENDS FROM 2013–2018 FOR HICS FOR ENERGY FINANCE COMMITMENTS AND DISBURSEMENTS

More energy development finance commitments and disbursements reach non-HICs¹¹ than HICs (Figure 5). This can be expected since there are many more non-HICs than HICs for energy and clean cooking. Figure 5 gives a sense of the evolution of the share of commitments for HICs and non-HICs. In 2013, only 25 percent of energy related development finance commitments went to HICs, with 75 percent going to non-HICs. However, there are signs that suggest HICs’ share of total development finance commitments for energy has been gradually increasing, rising to 34 percent in 2018. This represents an increase of USD 4.9 billion over the 2013–2018 period.

FIGURE 5
Energy finance commitments and disbursements, 2013-2018



Source: South Pole 2020, based on OECD CRS data.

¹⁰ Disbursement data do not allow for a distinction between funds being applied to implementation or pending in the beneficiary's bank accounts.

¹¹ A non-HIC is a recipient country that is not considered an HIC for either energy transactions or clean cooking transactions. There are 152 non-HICs for energy and 115 non-HICs for clean cooking.

In terms of disbursement, the report also observes a positive growth trend between 2013 and 2018. Disbursements for energy projects to HICs have grown at a more rapid rate (61 percent growth) than disbursements to non-HICs (52 percent growth). While the share of disbursements for energy projects going to HICs has stagnated at around 30 percent, disbursements still increased by USD 2.4 billion in absolute terms over the 2013–2018 period.

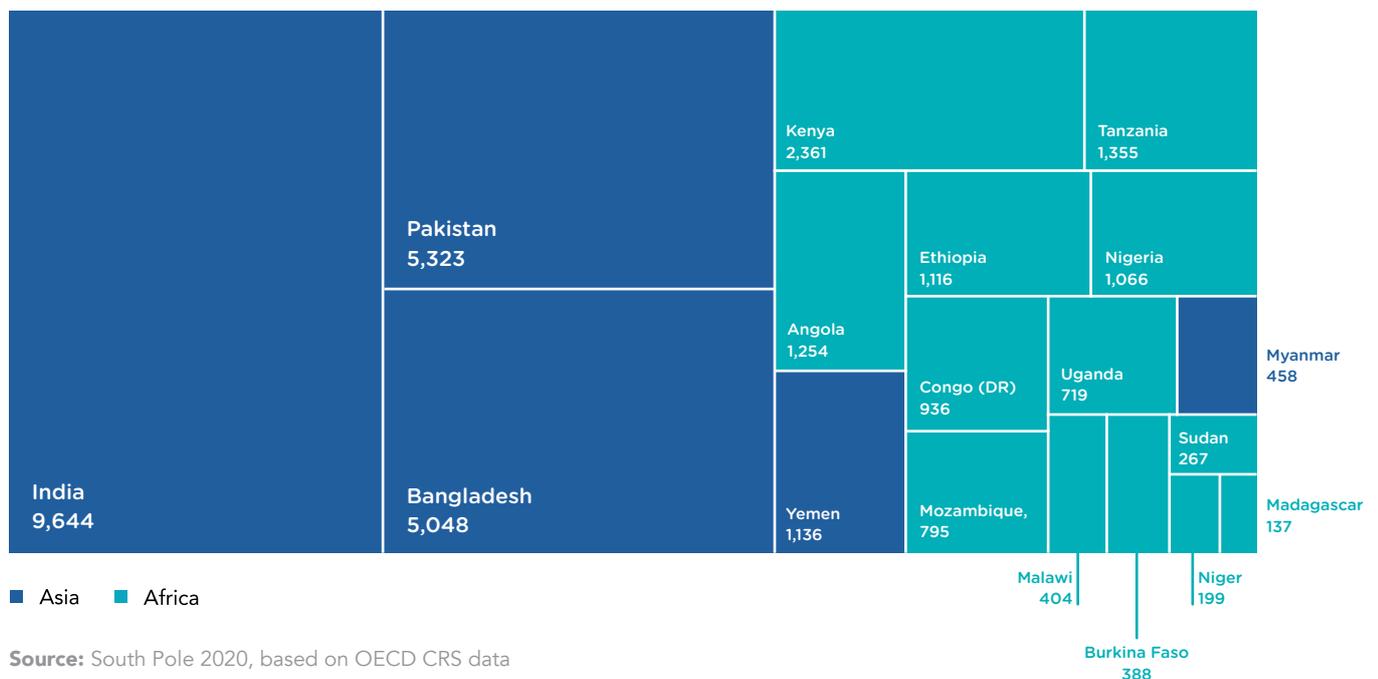
India, Pakistan and Bangladesh recorded the largest volumes of disbursements for development finance relating to energy out of all HICs. These three countries accounted for 61 percent of the disbursements to all HICs in the 2013–2018 period, with 30 percent, 16 percent and 15 percent respectively (see Figure 6).

Comparing the volume of disbursements for each country between 2013 and 2018 against their respective commitment figures allows for the calculation of a disbursement-to-commitment ratio for development finance over the 2013–2018 period. For India, the disbursement-to-commitment ratio from 2013 to 2018

was 67 percent, suggesting that 67 percent of recorded commitments were disbursed. For Pakistan and Bangladesh this ratio was 60 percent and 52 percent, respectively.

The average disbursement-to-commitment ratio for HICs between 2013 to 2018 was 62 percent. First, this result suggests a welcome improvement in disbursement efficiency since 2017, given the data from *Energizing Finance: Missing the Mark 2017* resulted in a ratio of 53 percent. Second, it was found that non-HICs disbursed 63 percent of development finance for energy, which would suggest that HICs and non-HICs are, on average, equally efficient at disbursing such finance. However, this disbursement-to-commitment ratio has significant limitations given it does not allow for intertemporal comparisons. For instance, it includes disbursements of commitments recorded between 2013 and 2018 but not for commitments that were announced before 2013, as well as commitments that may have disbursements scheduled after 2018. Consequently, this metric needs to be interpreted with caution. Disbursement efficiencies are further explored in Section 5 of this report.

FIGURE 6
Treemap of volume of energy finance disbursements (in USD billion) to HICs by country, 2013–2018



Source: South Pole 2020, based on OECD CRS data

TRENDS FROM 2013–2018 BY SUB-SECTOR

The analysis of commitment and disbursement data per energy sub-sector¹³ in the OECD CRS database shows the following trends for renewable energy (RE) and non-RE generation in the period 2013–2018:

- **Disbursements for non-RE generation have steadily increased** since 2013. However, finance commitments for non-RE generation have not increased in the same way and only saw a net marginal increase of USD 150 million between 2013 and 2018.
- **The growth in commitments for RE generation between 2013 and 2018 (133 percent) is not in sync with the far more modest growth in disbursements** in the same period (12 percent), though this may generally be explained by the

delay between commitment and disbursements. After a steady increase since 2014, disbursements for RE generation actually decreased in 2018.

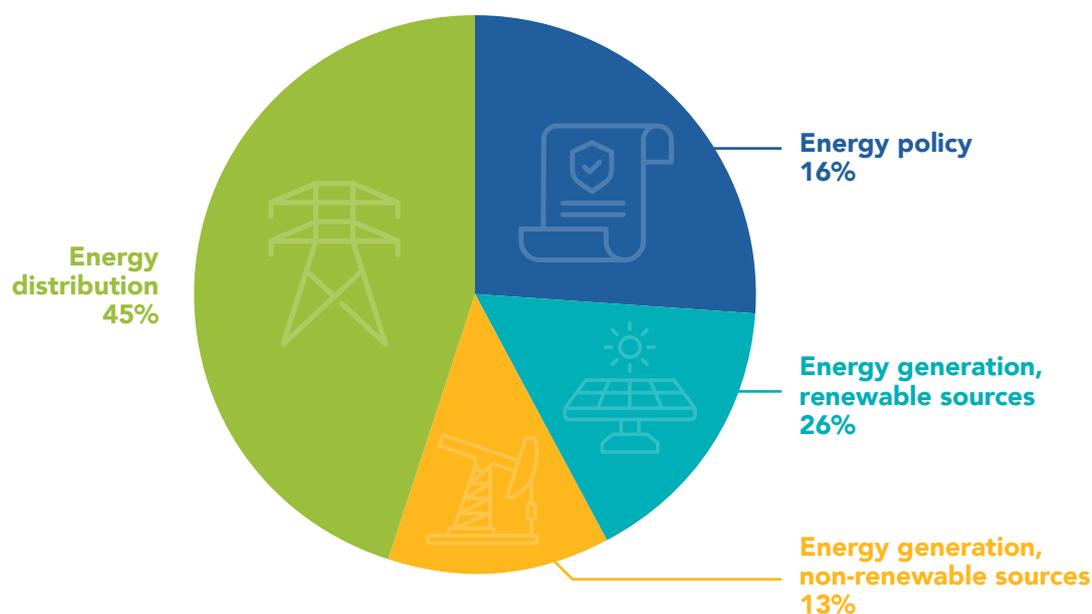
The following section analyses the commitment and disbursement figures in more detail.

Commitments

Between 2013 and 2018, 45 percent of all new energy finance commitments in HICs were directed toward distribution projects, followed by 26 percent for RE generation and 16 percent for energy policy and administrative management. New commitments to non-RE generation totalled only 13 percent of new commitments for the 2013–2018 period, down from 23 percent in 2013.

FIGURE 7

Share of energy finance commitments in HICs by sub-sector, 2013–2018



Source: South Pole 2020, based on OECD CRS data.

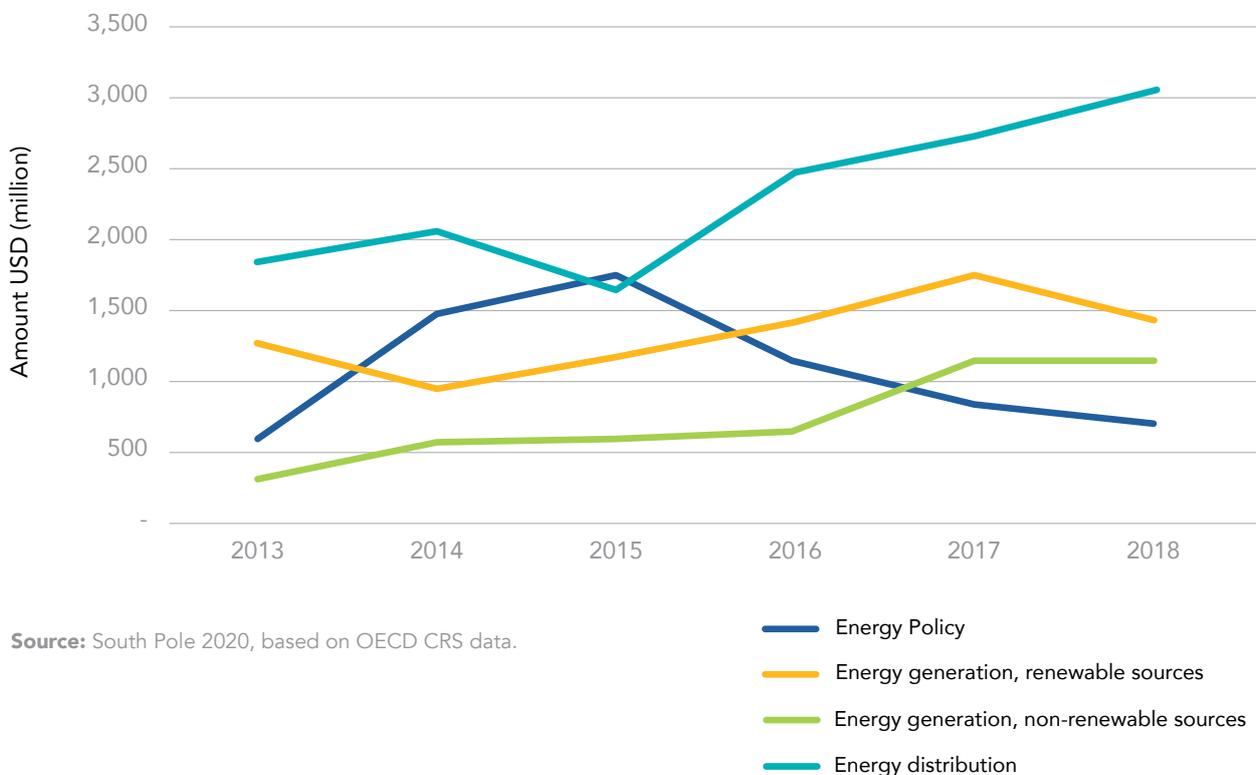
¹³ The data are split by energy policy (includes education, training, research, conservation); energy generation — renewable sources (includes wind, marine, geothermal, solar for centralized grids or hydro); energy generation — non-renewable sources (includes coal-fired electric power plants, oil-fired electric power plants, natural gas-fired electric power plants or non-renewable waste power plants); and energy distribution (includes heat plants, district heating and cooling, centralized transmission and distribution, retail gas distribution). The OECD CRS categorization did not allow for a detailed segmentation for off-grid projects. Newly introduced OECD CRS purpose codes for 2019 data will include a category specific to isolated grids and standalone systems.

Disbursements

On the disbursements side, non-RE generation saw a steady increase from 2013–2018 and overtook energy policy disbursements. Between 2013 and 2018, annual commitments for non-RE generation in HICs rose by just USD 150 million, while disbursements rose by USD 800 million (Figure 8). This may reflect the realization of numerous multilateral development bank and development finance institution (DFI) policies moving

away from new coal-fired project commitments,¹⁴ as well as a likely indication of a multi-year time lag between commitments and disbursements, which is consistent with past data. For instance, it was found that the median duration of World Bank energy sector project investments was nine years, which provides insights to the disconnect between commitments and disbursements, as well as affecting the potential for improving energy access.¹⁵ This is further explored in Section 5.

FIGURE 8
Energy finance disbursements to HICs per sub-sector



Source: South Pole 2020, based on OECD CRS data.

¹⁴ <https://urgewald.org/en/medien/world-bank-annual-meeting-bank-invested-over-105-billion-fossil-fuels-paris-agreement>

¹⁵ World Bank Group Support to Electricity Access, FY2000–FY2014: https://ieg.worldbankgroup.org/sites/default/files/Data/reports/Electricity_Access.pdfnt

TRENDS FROM 2013–2018 BY DONOR

International institutions and multilateral development organizations account for a greater share of development finance commitments for the energy sector than nation states. Six of the ten highest contributing funders to energy projects in HICs between 2013 and 2018 were multilateral development banks and international finance institutions, including members of the World Bank Group. The top contributing funders to HICs included the Asian Development Bank (ADB) (20 percent), and the World Bank Group members: International Development Association (IDA) (18 percent), International Finance Corporation (IFC), and the International Bank for Reconstruction and Development (IBRD) (both 6 percent). Among nation states, the top donors included Japan (13 percent), Germany (8 percent) and France (4 percent).

In terms of disbursements, the ADB was also top of the list, accounting for 21 percent (USD 6.8 billion) of disbursements between 2013 and 2018. This is likely due to the high share of finance flowing into three Asian HICs: Bangladesh, India and Pakistan, as mentioned in the previous section. The IDA was the second highest funder (USD 5.8 billion) in terms of disbursements between 2013 and 2018. It has vastly increased its share of commitments to HICs since 2016, more than doubling its contribution share from 2017 (15 percent) to 2018 (31 percent).

While major disbursement trends could not be identified due to the high annual variability of data, this report notes the following observations: The United Arab Emirates disbursed only USD 2 million in 2013 and 2014 combined but disbursed as much as USD 187 million in 2015 and was the 11th largest donor in terms of total disbursements between 2013 to 2018. Within the top 10, the biggest consistent increases in disbursements between 2013 and 2018 came from Japan and France.



CHAPTER

4

TRENDS IN
DEVELOPMENT FINANCE
FOR CLEAN COOKING

As noted earlier in this report, the identification of clean cooking transactions in the Creditor Reporting System (CRS) data poses challenges. With these limitations in mind, the analysis shows that only USD 148 million was committed to 144 clean cooking projects¹⁶ to clean cooking projects in high-impact countries (HICs) in the 2013–2018 period, with disbursements of USD 177 million (Figure 9).

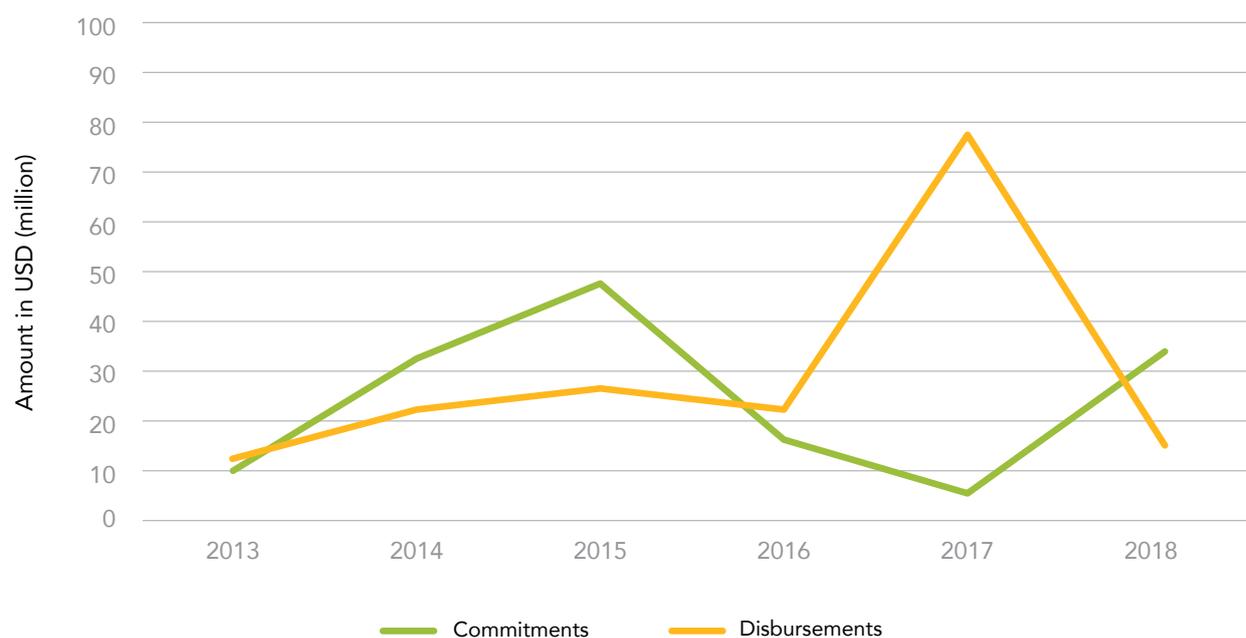
Current clean cooking investments, with around USD 30 million of development finance disbursements per year (2013–2018 average), are still orders of magnitude far below the USD 4.5 billion annual investment required¹⁷ to achieve universal clean cooking access by 2030. These numbers highlight that a radical uptake in clean cooking commitments and disbursements is urgently required to cover past and current investment shortfalls as well as

to meet future investment needs to achieve SDG7. The woefully small volume of commitments and disbursements suggests that clean cooking continues to be a low priority issue for development partners and donors.

Disbursements exceeded commitments in 2016 and 2017, which is indicative of a multi-year time lag between commitments and disbursements. As countries fall further behind in attracting the volume of finance they require for SDG7, the cumulative lag in disbursements further amplifies the reality of low commitments and exacerbates an already dire situation. This issue is all the more significant as the *State of Access to Modern Energy Cooking Services*¹⁸ report finds that four billion people around the world still lack access to clean, efficient, convenient, safe, reliable and affordable cooking solutions.

FIGURE 9

Clean cooking finance commitments and disbursements to HICs, 2013-2018



Source: South Pole 2020, based on OECD CRS data.

¹⁶ This figure cannot be directly compared to the *Energizing Finance: Understanding the Landscape* findings as *Missing the Mark* looks only at OECD CRS data for disbursement data purposes.

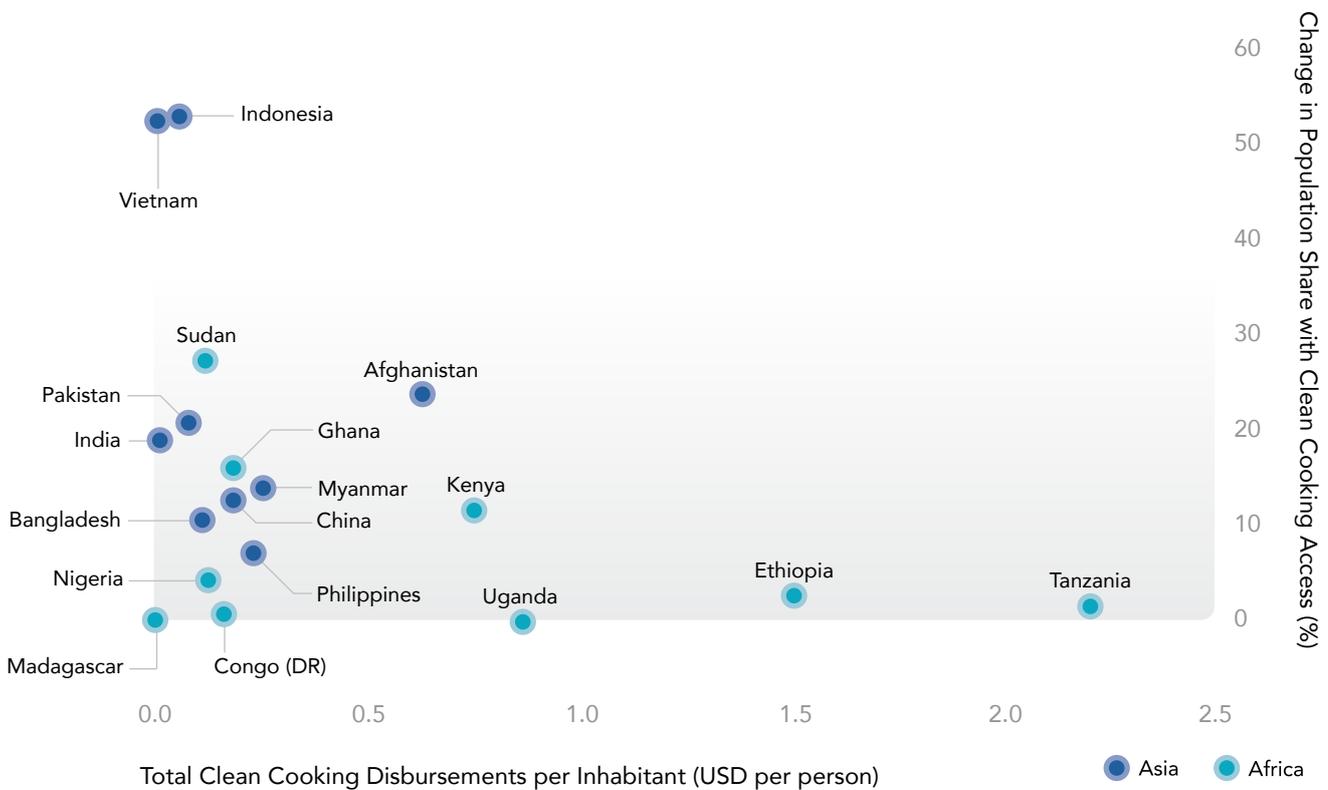
¹⁷ World Energy Investment, IEA 2019.

¹⁸ *The State of Access to Modern Energy Cooking Services* report 2020.

Lack of data precludes a rigorous trend analysis of development finance disbursements for clean cooking. Yet, as Figure 10 below shows, countries such as Vietnam and Indonesia have managed to increase the share of their populations with clean cooking access by 50 percentage points between 2000 and 2016, with less than USD 0.20 in clean cooking disbursements per inhabitant,¹⁹ while Uganda did not improve clean cooking access at all despite receiving close to USD 1 per inhabitant in the same period. Figure 10 even

suggests, graphically at least, that there is no strong positive correlation between the disbursement amount per inhabitant and an increase in the share of the population with access to clean cooking. This challenges the hypothesis that increased disbursements of clean cooking finance alone directly lead to increased access. However, this observation needs to be interpreted with great caution until a dedicated econometric analysis is conducted.

FIGURE 10
Improvements in clean cooking access and clean cooking disbursements, 2000-2016



Source: South Pole 2020, based on the World Bank’s World Development Indicators.

¹⁹ Data on clean cooking access are from the World Bank’s World Development Indicators. The 2000–2016 period is considered to capture a greater share of clean cooking development assistance in the CRS data. The clean cooking access variable has no coverage beyond 2016.



CHAPTER 5 DISBURSEMENT EFFICIENCY



METHODOLOGY

Development interventions in the energy sector have historically been large and are typically scheduled over multiple years after an initial commitment. As a result, project-level data are required to assess the extent to which disbursements are made on time after funds are initially committed and payments scheduled. To that end, transactions from the OECD Creditor Reporting System (CRS) database were grouped into projects using a matching algorithm. The algorithm was designed to group transactions into projects in a multi-step process that included donor name, project title and CRS transaction ID. This yielded a high-quality initial grouping (see Annex I for a full presentation of the methodology). The database was then transformed from a series of transactions to project-level information to perform the disbursement constraints analysis.

DATA

Over 19,000 energy transactions from the CRS database were assessed for high-impact countries (HICs) in the 2002–2018 period. Through the matching algorithm, these transactions were grouped into 6,700 projects with USD 92 billion in commitments. Around 2,500 projects (37 percent of the total) with USD 65 billion in commitments (71 percent of the total) had sufficient information²⁰ to be meaningfully analysed in terms of disbursement efficiency.

As a result, some donor countries, institutions, recipients and transaction types are under-represented in the analysis. The analysis found that 20 percent of the commitments that were without sufficient information and were therefore excluded from the analysis came from the Asian Development Bank (ADB), followed by the International Development Association (IDA) (19 percent) and Japan (13 percent) (see Table 5, Annex I). Some donors also systematically reported transactions to the CRS database in a way that made them

unsuitable for a disbursement constraints analysis. This is the case, for instance, with the International Finance Corporation (IFC) and the ADB, where 100 percent of their commitments had insufficient information to be meaningfully analysed for disbursement efficiency. As a result, some donors are not represented at all, which affects the completeness of the analysis. Finally, around half of the commitments excluded are loans, while just over a third are Other Official Flows (OOF), and the rest are grants (see Table 7, Annex I). Some country-level results cannot be interpreted due to data limitations. In Angola, Korea (DPR) and Sudan, for example, over 90 percent of energy sector development finance commitments lack sufficient data to be analysed, so the results — which are based on the remaining 10 percent of commitments that can be analysed — are not meaningful. See Table 5, Annex I for more details.

As a recommendation, future analyses of the OECD CRS data would benefit from more complete and consistent transaction-level information for key variables²¹ to allow for a higher-quality grouping of transactions into projects and to minimize the exclusion of projects from project-level analyses. Incomplete data hampered the assessment of disbursement efficiencies and affected the pertinence of observations and recommendations. Further, the CRS data would benefit from recording transaction data on a quarterly or monthly basis (rather than yearly) to improve the accuracy of the disbursement efficiency assessment.

Bangladesh, India and Pakistan received the most development finance that could not be considered in the analysis due to missing data, with 28 percent, 21 percent and 21 percent respectively of the commitments to those countries excluded, and 62 percent, 65 percent and 62 percent respectively of projects excluded. Together, Bangladesh, India and Pakistan account for over half of the development finance that does not contain enough information to be subjected to the disbursements constraints analysis (see Table 6, Annex I).

²⁰ Over 90 percent of projects that were excluded are missing either an expected start date, an expected end date, or both.

²¹ These include but are not limited to project number, CRS ID, project title, project purpose and flow type.

INDICATORS

To assess disbursement delays, two indicators were constructed, as in the 2017 edition of *Energizing Finance: Missing the Mark*.

The first indicator is a binary variable that identifies projects that are delayed. This variable simply records whether a project is delayed and does not capture the severity of the delay.

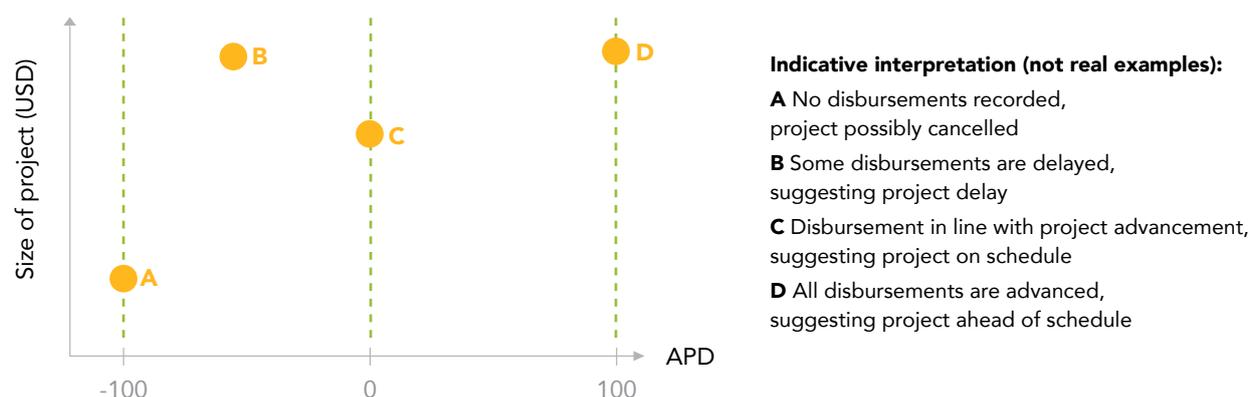
The indicator identifies projects as late if any one of the following three conditions is met:

1. The project's last disbursement occurs after the expected project end date.
2. The project's last disbursement²² takes place during the expected end year, but cumulative disbursements are less than 95 percent of commitments.
3. The project's last disbursement takes place before the expected end year, but the difference between the percentage of time passed and

cumulative disbursements as a percentage of project commitments is greater than 10 percent. For example, if 50 percent of a project timeline has elapsed but only 30 percent of commitments have been disbursed, the project is considered late because the difference (20 percent) is larger than the 10 percent threshold.

The second indicator is a non-binary variable that measures the average project delay (APD). This indicator measures the extent to which a project is delayed (or ahead of schedule). The APD ranges from -100, which indicates the project timeline has elapsed with no disbursements and thus has experienced significant delay or possibly cancellation, to +100, which signifies that all disbursements were made during the first year of the project. An APD of 0 suggests that the project is on schedule, as the share of disbursements is equal to the share of time elapsed. In rare cases where disbursements exceed initial commitments, the APD is given a value of 100. A graphical indicative illustration to interpret the results is provided in Figure 11.

FIGURE 11
Graphical interpretation of average project delay (APD)



Source: South Pole 2020, based on OECD CRS data.

²² The data do not allow for distinguishing between late disbursement and projects where finance was ultimately under-utilized or cancelled.

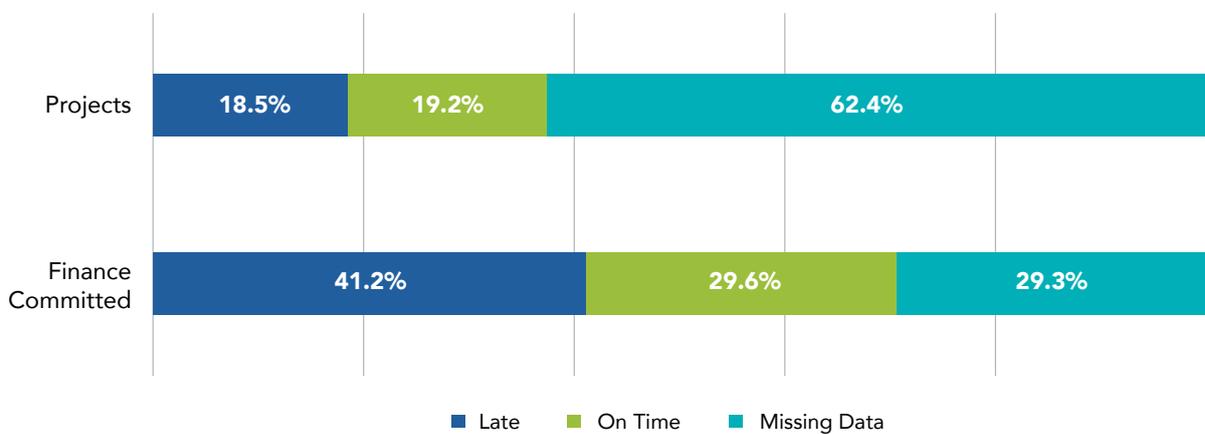
RESULTS

Looking at both the volume of finance and the number of projects that are affected by delays may give an indication of the average size of delayed projects. Figure 12 shows the share of projects and finance considered late or on time as well as the share for which missing data do not allow for this evaluation. Ignoring missing data, a majority of the finance committed to the energy sector (58 percent) and almost half of all energy sector projects (49 percent) were delayed in the 2,500 projects

with complete data from the 2002–2018 period. This result suggests that, on average, larger projects are delayed more often than smaller projects.

The APD for all projects (weighted by size) is -23, suggesting that the average-sized project is delayed. Projects that are on time have an average commitment of USD 21 million, while delayed projects have a larger average commitment of USD 30 million. This observation reinforces the idea that delays are more likely to affect projects associated with larger commitments.

FIGURE 12
Delays in energy sector financing and project implementation, 2002-2018

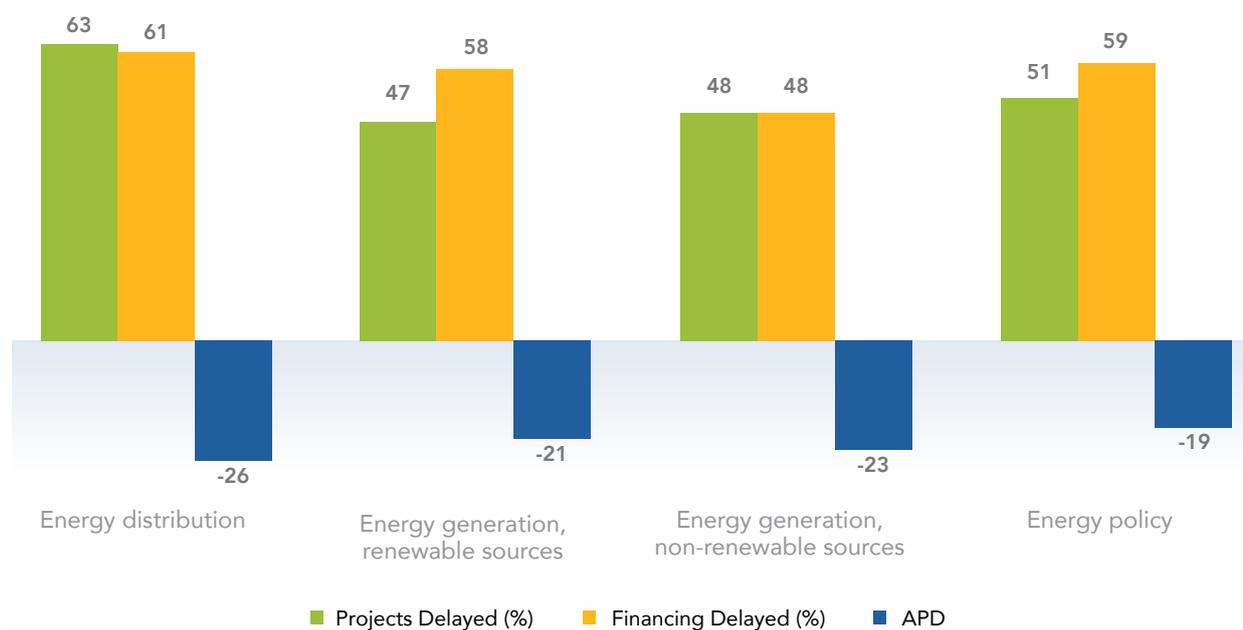


Source: South Pole 2020, based on OECD CRS data.

The differences in disbursement delays across the four main sub-sectors (distribution including transmission, renewable generation, non-renewable generation and energy policy) are not large. However, energy distribution projects are slightly more prone to delay,

with 63 percent of projects and 61 percent of the financing behind schedule and an APD of -26. Non-renewable generation projects are slightly less prone to delay, with 48 percent of projects and 48 percent of the financing late and an APD of -23 (see Figure 13).

FIGURE 13

Projects delayed, financing delayed and APD by sub-sector, 2002-2018

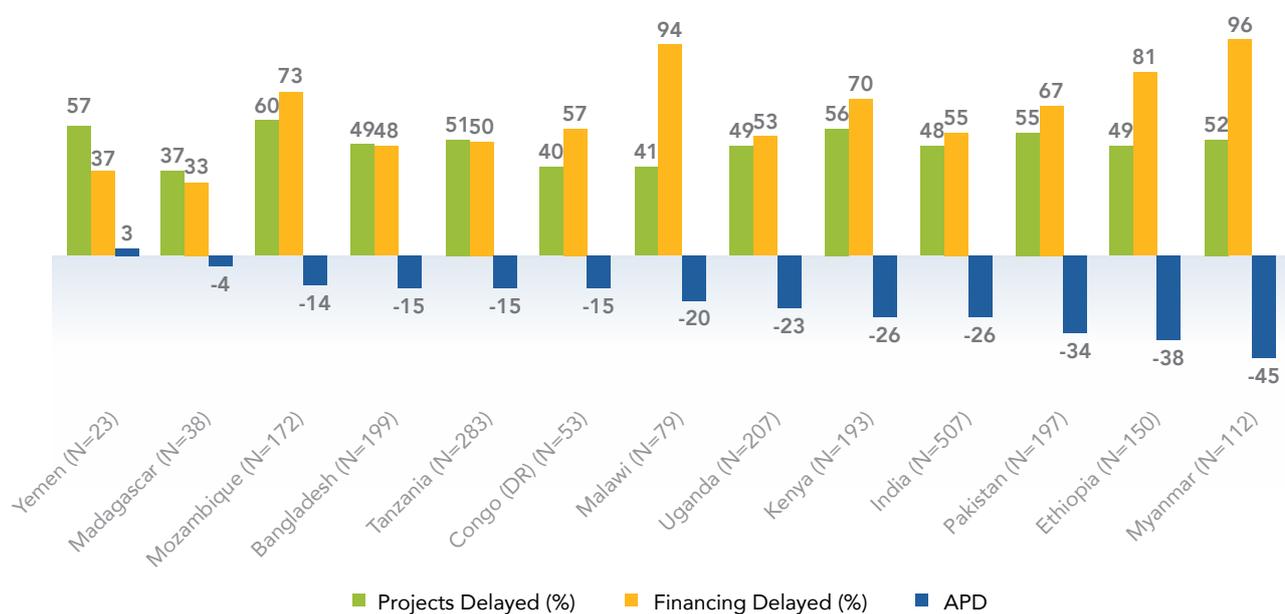
Source: South Pole 2020, based on OECD data.

Figure 14 shows the share of financing delayed, the share of projects delayed and the APD for the 13 countries²³ where complete data on commitments account for more than 50 percent of total commitments. In Malawi and Myanmar, for example, over three quarters of funds committed for energy sector projects were delayed; of

all the HICs, Madagascar is the only country where a third or less of the financing was delayed. This figure also shows the variation between countries, particularly in terms of delayed financing, which ranges from 33 percent for Madagascar to 96 percent for Myanmar.

²³ Angola, Burkina Faso, Chad, Korea (DPR), Niger, Nigeria and Sudan were not included in this figure since incomplete data on commitments accounted for more than 50 percent of total commitments.

FIGURE 14

Percentage of projects delayed, financing delayed and APD by HIC, 2002-2018

Source: South Pole 2020, based on OECD CRS data.

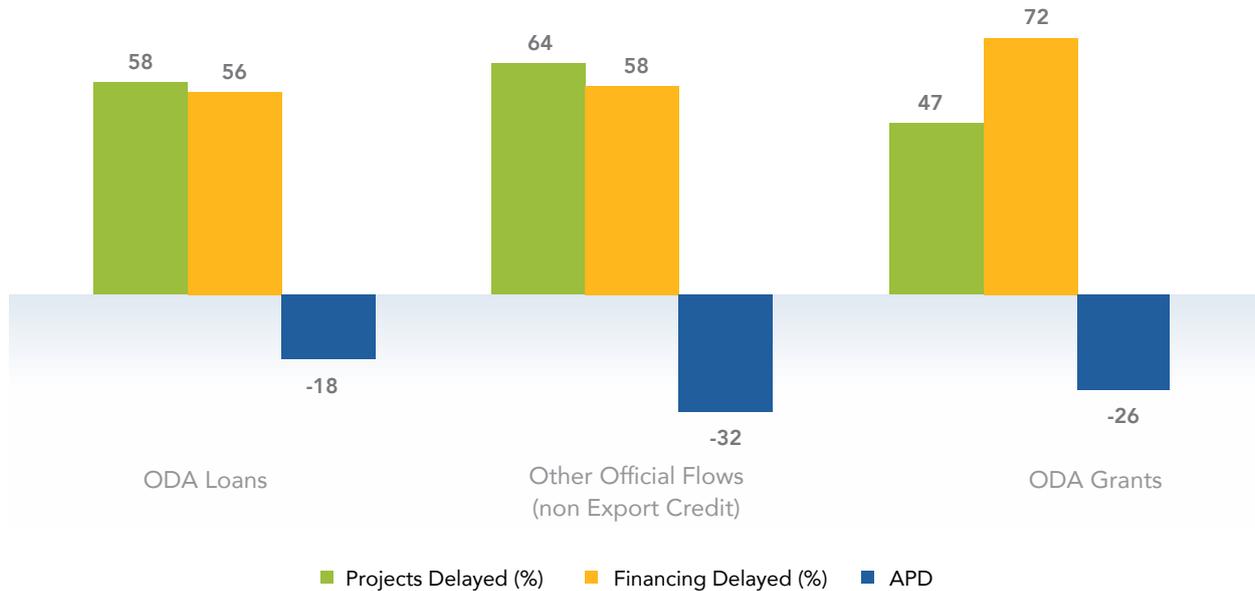
Note: Number of projects included in the analysis displayed in brackets; amount of financing across the top

In terms of the share of projects delayed, the Congo (DR), Madagascar and Malawi were the countries with the fewest delays, while Mozambique and Yemen had the lowest APD scores.

In terms of the share of financing delayed, Madagascar and Yemen had a more positive disbursement efficiency while Malawi and Myanmar had the most disappointing scores. In terms of the APD, Madagascar and Yemen experienced the shortest delays (with faster disbursements than anticipated, on average), while Ethiopia and Myanmar had the longest delays. The positive results from Madagascar and Yemen may be due to the relatively number of projects that could be included compared to other countries. For future editions of *Energizing Finance: Missing the Mark*, it may be relevant to compare the APD for HICs with that for non-HICs in order to compare the disbursement efficiencies of the two sets of countries.

The analysis also shows that grant financing is overall more prone to delay than loan financing (in terms of percentage of financing delayed), although fewer projects financed by grants were delayed (see Figure 15). This may be because the administrative tasks and requirements associated with grants are less onerous, resulting in fewer grant-funded projects being delayed, while it may be more difficult to disburse larger grants (that would have to flow to a range of projects) than to disburse large loans that tend to flow to fewer, large infrastructure projects. In addition, energy sector development finance that is classified as OOF, which is mostly loans that are not highly concessional, appeared to face the most serious disbursement constraints, with an average project delay of -32, and 64 percent of OOF-funded projects delayed. This may reflect the fact that OOFs tend to flow to larger, more complex infrastructure projects with more demanding commercial requirements and safeguards, which can affect disbursement schedules.

FIGURE 15
Projects delayed, financing delayed and APD by financing instrument, 2002-2018



Source: South Pole 2020, based on OECD CRS data.

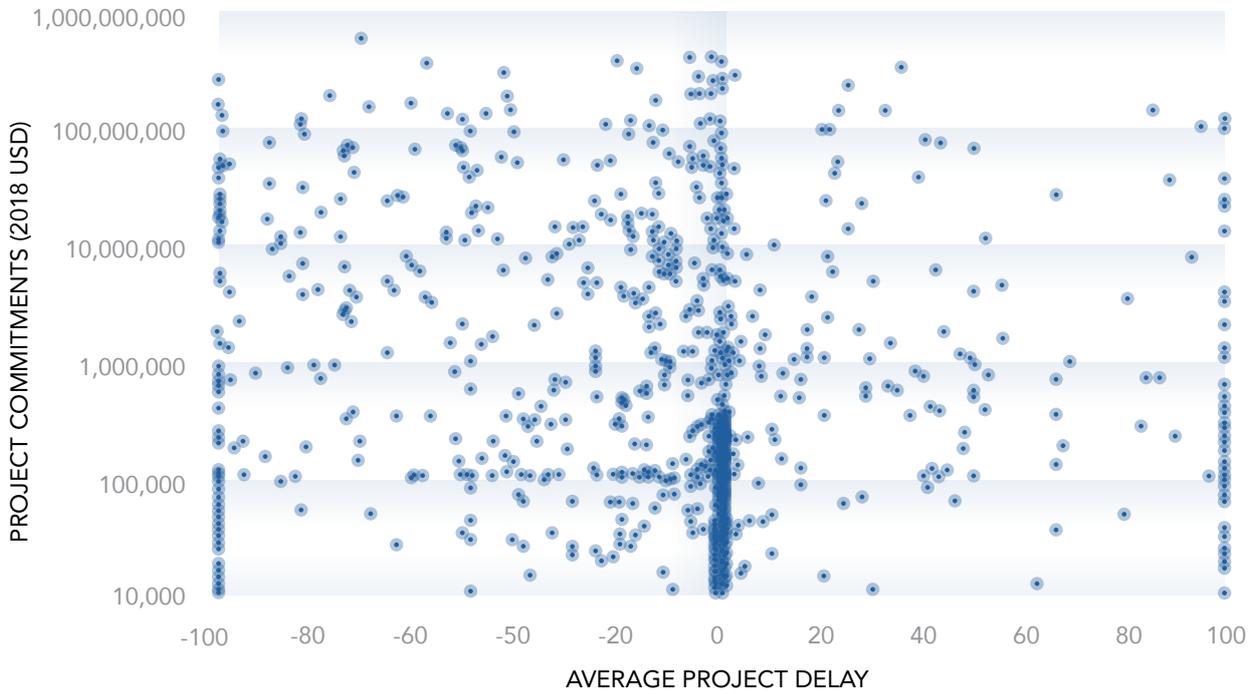
Figures 16–20 depict the relationship between project size and APD by sector in a scatterplot where each dot represents an individual project. Since commitments for energy-sector projects can span several orders of magnitude, from a few thousand US dollars to almost a billion, the data are presented on a logarithmic scale. The top-left quadrant of Figure 19 (energy distribution projects) has a higher density than the top right quadrant, highlighting that large projects were more likely to be delayed. The distribution seems to be more homogenous in the top left and lower left quadrants for

renewable energy (RE) projects. From visual observation, this suggests that RE projects were equally delayed, regardless of project size.

In general, it can clearly be seen that many projects cluster at an APD of -100 (i.e. where no disbursements have been made²⁴), and at an APD of 0 (i.e. exactly on time). This is particularly the case for RE generation and energy policy projects (see Figure 16 and Figure 18, respectively).

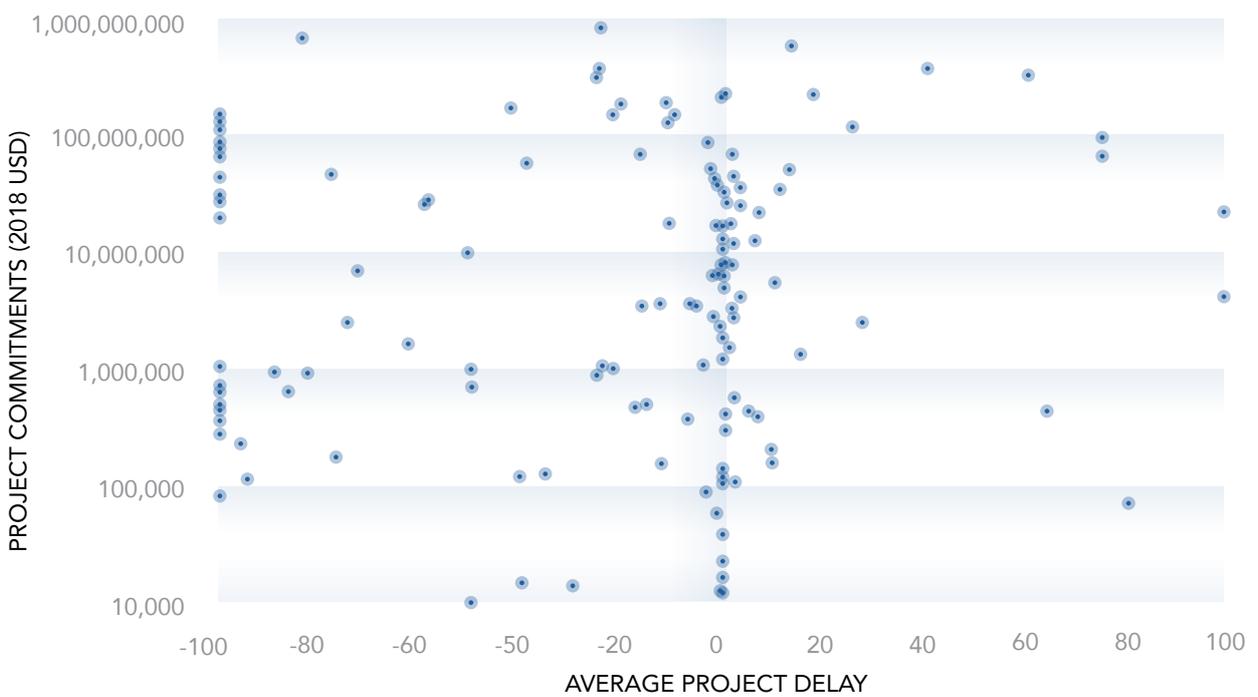
²⁴ This could be due to cancellation, delay, misreporting, or a host of other reasons.

FIGURE 16
APD by project size for renewable generation projects



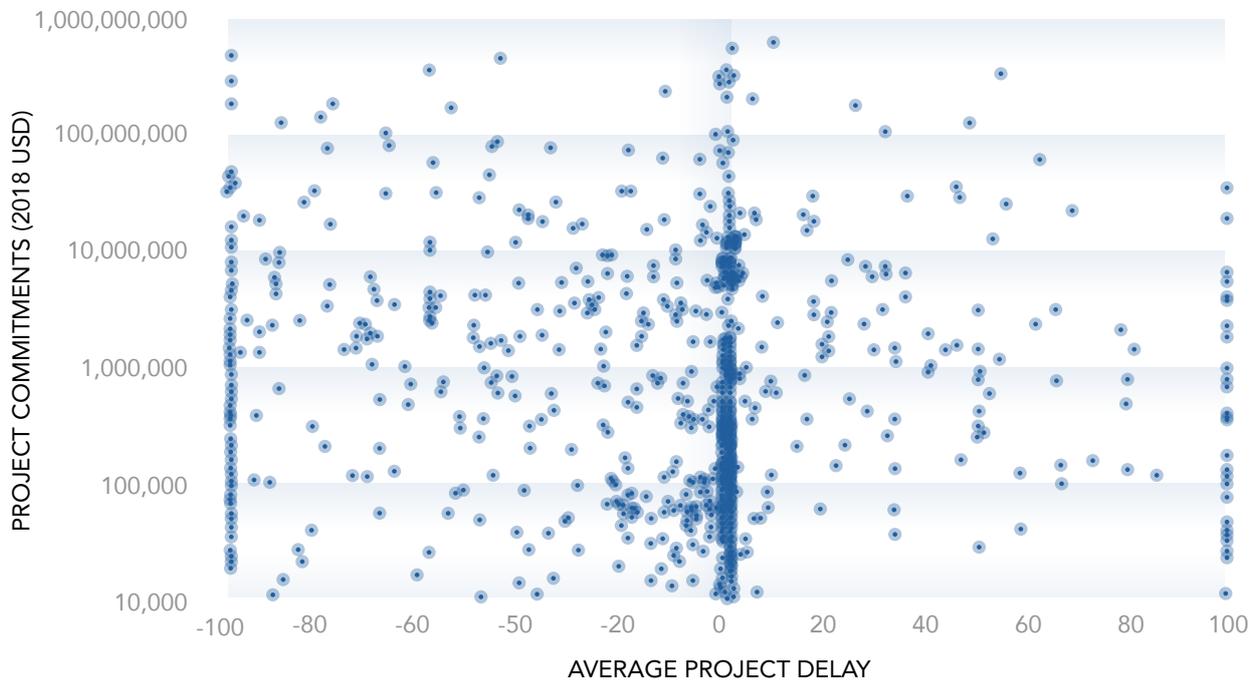
Number of Projects: 818, **Average Commitment Size:** \$19M, **Weighted Average Project Delay:** -21
Source: South Pole 2020, based on OECD CRS data.

FIGURE 17
APD by project size for non-renewable generation projects



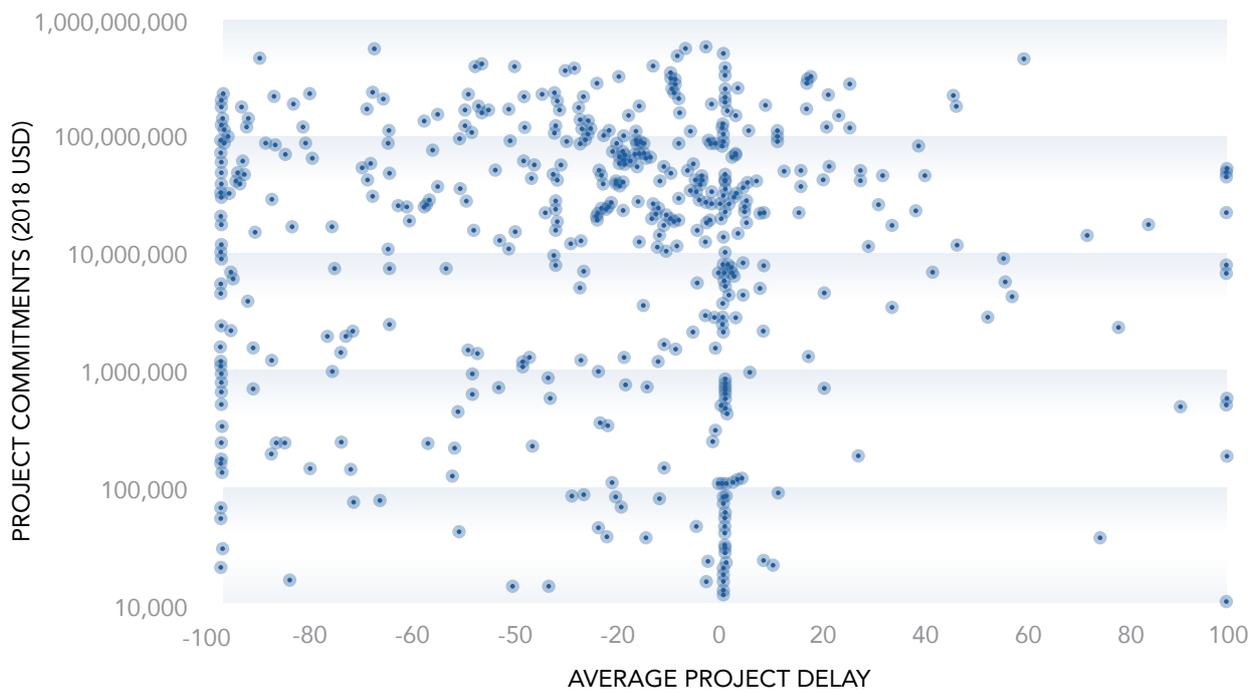
Number of Projects: 131, **Average Commitment Size:** \$57M, **Weighted Average Project Delay:** -19
Source: South Pole 2020, based on OECD CRS data.

FIGURE 18
APD by project size for energy policy projects



Number of Projects: 730, Average Commitment Size: \$14M, Weighted Average Project Delay: -23
 Source: South Pole 2020, based on OECD CRS data.

FIGURE 19
APD by project size for energy distribution projects



Number of Projects: 462, Average Commitment Size: \$68M, Weighted Average Project Delay: -26
 Source: South Pole 2020, based on OECD CRS data.



CHAPTER

6

ANALYSIS OF
DISBURSEMENT
CONSTRAINTS AND
SOLUTIONS

This section presents findings from both an additional quantitative assessment and a qualitative review to shed light on disbursement constraints. These findings were gathered through evaluation reports and responses to surveys sent to donors, private sector stakeholders and institutions operating in the energy ecosystem.

Section 6.1 provides a quantitative analysis of the relationship between development finance for the energy sector and regulatory indicators. From Section 6.2 onward, the analysis studies energy access projects specifically rather than the energy sector in general; this is rendered possible through the analysis of evaluation reports and primary data obtained through surveys and interviews with stakeholders. Section 6.2 provides insights from project reports. Section 6.3 highlights findings from surveys and interviews and draws recommendations for improving disbursement efficiency, and Section 6.4 offers conclusions to this analysis.

QUANTITATIVE ANALYSIS OF THE CONNECTION TO REGULATORY INDICATORS FOR SUSTAINABLE ENERGY

To seek a clearer understanding of the extent to which disbursement efficiency may relate to the quality of a country's energy sector policies and regulations, the report looked to the World Bank's Regulatory Indicators for Sustainable Energy (RISE). RISE scores assess countries on the quality of their electricity access, energy efficiency and renewable energy (RE) policies²⁵ and are constructed as the average of several sub-indices. The energy index, for example, depends on the existence and monitoring of an official electrification

plan, the scope of such a plan and the framework for grid electrification, among other sub-indicators.

The objective of this analysis is to test the strength of the correlation between RISE scores and disbursement rates and therefore whether disbursements may be linked to an improvement in the quality of energy sector policies or regulations. The data show that while there have been significant and steady improvements in the quality of the policies and regulations measured by RISE, the same steady improvement pattern has not generally followed for disbursements.

While there is no statistically significant correlation between overall development finance disbursements for energy and the RISE scores for Electricity Access and Energy Efficiency, there is a statistically significant relation with the RISE RE indicator, even if the practical significance of the coefficient is small. On average, in high-impact countries (HICs), every additional point in the RISE score for RE is associated with an additional USD 0.05 per capita additional development finance disbursed for the energy sector. The results imply that the changes in regulations and policies measured by RISE do not appear to have a material short-term relationship with energy sector development finance disbursements in HICs. This result does not rule out a medium- or long-term impact from regulatory improvements on energy sector disbursements and may also differ when only analysing specific technologies. It also does not rule out a positive impact on overall finance commitments, including private finance, as has been observed in Rwanda, which is the subject of a more detailed review in *Energizing Finance: Understanding the Landscape 2020*.

For more details on methodology and results, see Annex II.

²⁵ This analysis of RISE does not include the indicators/results on clean cooking.

REVIEW OF EVALUATION REPORTS

To obtain additional country-specific insights on the reasons behind disbursement delays and to test these against trends found in the quantitative analysis, 36 reports from the deep-dive countries²⁶ were reviewed. This review included project evaluation reports, single and multi-country market assessment reports, and papers on development finance effectiveness, to gain a better understanding of individual country contexts. About two thirds of the reports analysed pertained to energy access while one third focused on clean cooking. The main points extracted from the reports relate to disbursement challenges and the context encountered in specific countries, as well as solutions implemented, successfully or not, to overcome project disbursement constraints. More details are provided in Annex III.

It is essential that best practices are adopted when designing and implementing energy access projects to ensure and maintain efficient and timely disbursement processes. Recommendations developed in this section notably align with the four dimensions (prioritization, ownership, transparency, learning) of the Quality of Official Development Assistance tool²⁷, an important instrument developed by the Center for Global Development and the Brookings Institution that supports donors to improve the quality of their own aid.

Several types of barriers hinder disbursement in energy access projects; the following subsections provide more detail.

Poor institutional and coordination structures and constrained public sector capacity

Insufficient staff capacity and a lack of coordination among stakeholders (funders, government, private sector and/or civil society implementing partners), combined with inadequate institutional structures and administrative requirements, can threaten the timely disbursement of finance for energy projects.

The main barriers to efficient disbursement of finance for electricity and clean cooking access, as identified through the desk review and survey responses, are

primarily administrative in nature: insufficient human resources, such as understaffing or limited number of experts in project management units (PMUs) and time-intensive processes. These two factors are linked, as insufficient human resources exacerbate the barrier of time-intensive processes due to limited organizational capacity to cope with complex bureaucratic procedures (e.g. due diligence, compliance with procurement processes and reporting requirements).

To overcome these challenges, some suggestions include streamlining staff recruitment processes and shifting implementation responsibilities to entities with more knowledge of the local context (i.e. country offices) or technical capacity, as they may be better positioned to provide direct support. Increased human capacity can pave the way for other proposed solutions, namely improving communication and decision-making strategies and establishing more flexible and tailored contractual arrangements.

An additional disbursement barrier mentioned by survey respondents is the lack of coordination between project stakeholders. The importance of coordination is notably supported by key takeaways from the GEF-UNDP India project (Box 1), where administrative processes and project implementation delays were cited as a contributing factor to disbursement delays. Limited coordination among stakeholders and limited support from national institutions further affected disbursements, a constraint that could be improved by shifting to sub-national entities with improved stakeholder interactions. Conversely, the evaluation report on the Madagascar Energy Sector Reform Support Programme (PARSE) evidenced the importance of continuous coordination between the donor and its implementing partners in contributing to success. The programme aimed to remove the barriers that hinder the development of Madagascar's electricity sector and showed that a continuous dialogue with local authorities and development partners was essential to ensure the programme was aligned with the government's priorities, complemented programmes supported by other donors, and created buy-in and ownership for the programme's creditor.

²⁶ India, Madagascar, Myanmar, Nigeria and Rwanda.

²⁷ Center for Global Development (2018). Quality of Official Development Assistance: QuODA 2018 Methodology; online: <https://www.cgdev.org/sites/default/files/quoda-methodology-2018.pdf>


BOX 1 
INDIA
Market Transformation and Removal of Barriers for Effective Implementation of the State-Level Climate Change Action Plans, 2016–2019 (independent review)²⁸

This project, co-financed by the GEF, UNDP and the Government of India, aimed to reduce greenhouse gas (GHG) emissions in the states of Jharkhand and Manipur by removing barriers to the successful implementation of GHG reduction measures identified in the State-Level Action Plans on Climate Change.

The project faced significant delays in its implementation phase, especially in kick-starting activities in the state of Manipur. **These delays were mainly due to a lack of clearance from the Department of Economic Affairs, as well as limited support from national institutions at the federal level.** Because of this, at the time of the project's mid-term review (2019), activities in the state of Manipur had not fully started.

Disbursement delays were attributed to the delayed start in Manipur, late approval in the state of Jharkhand and the slow PMU hiring processes.

Despite these challenges, the project team managed to redefine priorities and carry out their activities by focusing on the state of Jharkhand, where progress was faster. This was due to the higher number of active partners involved, including the state government, community and livelihood groups, industry associations, research institutes, NGOs and private sector entities.

Additional efforts are urgently needed to build in better coordination mechanisms among public entities, donors, and beneficiaries, and reinforce human resources to fulfill project requirements. This could be facilitated by public entities and ministries playing a role in supporting project activities, for instance by promoting stakeholder coordination through the organization of meetings or workshops.

Limited access to local finance

Lack of access to matching finance often results in energy end users and small and medium-sized enterprises (SMEs) finding themselves at an impasse when procuring funding, which can delay project disbursement.

Access to local finance can be a pre-condition for intended beneficiaries' participation in projects, as they often need loans to purchase electricity or clean

cooking equipment. If beneficiaries engaged in energy access projects have limited access to finance, they are prevented from participating in project activities, resulting in disbursement delays. This is especially important for results-based finance projects, where incentives are set for an entity to deliver predefined outputs and reward the achievement of these results upon verification.²⁹ With limited access to finance, beneficiaries are not able to provide the expected outputs and are ineligible to receive incentives linked to pre-agreed results, which delays projects' disbursement processes.

For example in one project in Rwanda, the high upfront costs of RE equipment not only exposed the need for strong project design (further discussed in 6.1.3) and marketing strategies (see 6.1.4) but also highlighted the critical importance of local credit opportunities for high disbursement rates (Box 2).

²⁸ UNDP India (2019). Mid-term Review, Market Transformation and Removal of Barriers for Effective Implementation of the State Level Climate Change Action Plans.

²⁹ Musgrove, P. (2010). Rewards for good performance or results: a short glossary; online: <http://www.rbfhealth.org>, Washington, DC: World Bank.

BOX 2 **RWANDA** Promoting Renewable Energy Programme (PREP), 2008–2013 (internal review)³⁰

The total budget allocated for the programme was EUR 106,358,000, but only 80 percent of this was disbursed in the period 2008–2013. The two components with low disbursement were the biodigester and pico-photovoltaic (PV) system components.

The low uptake of biodigesters was caused by high initial investment costs, a long payback period (~nine years), and limited credit opportunities for potential purchasers. Only 23 percent of the initial biodigester installation target was completed.

Another disbursement shortfall came from the pico-PV systems component: only 50 percent of funds committed were disbursed, and only 8,000 of the envisaged 166,200 units of the pico-PV system component were sold. **The poor performance of the pico-PV sales was attributed to unsatisfactory project design and a poor marketing strategy.** Modifications in project design and strong promotion by the Government of Rwanda were unsuccessful in encouraging increased uptake of the systems. **Similar to the biodigesters, the targeted beneficiaries struggled to buy the pico-PV system as they could not afford to do so without access to credit.**

To overcome this challenge, it is imperative that a market assessment is conducted during the project design phase to identify available financial tools and their characteristics (e.g., interest rates, terms and collateral requirements). This includes assessing the type of household that will be targeted by the project (e.g., low-income, vulnerable, living in remote areas, etc.). It is also crucial that technical assistance services are integrated within the project. These services should target end users (e.g., awareness campaigns and budget training), SMEs (e.g., technical assistance on cash-flow management, business plan creation) and financial institutions (e.g., training on risk management, digitalization and development of innovative financial products, according to the financial needs of end users and SMEs). Finally, the role of blended finance should not be underestimated; it can prevent disbursement delays by developing public financial incentives (e.g., guarantee schemes) that de-risk investments for local banks and thus improve access to local finance. Financial institutions are then less reluctant to offer the required local finance, which has the potential to significantly decrease disbursement delays arising from financial institutions' risk aversion. Planning for such financial tools and incentives can also be related to adequate project design as discussed in the next section.

Technical barriers and flaws in project design**Sound initial project design is of the utmost importance for project success and timely disbursements.**

Flaws in initial project design appear to be a cause of disbursement delays in both electricity access and clean cooking projects, as inappropriate project design prevents uptake and threatens timely and complete disbursements.

Design deficiencies in electricity projects often relate to short timeframes, overly broad and unclear scopes of work, limited local relevance due to the use of inappropriate imported donor solutions, and lack of market knowledge. For example, implementing an off-grid electricity project in a country where there are already low tariffs for grid-connected electricity or generous government subsidies could be risky as there is little room for competition, and end users will continue to wait for a grid extension instead of investing in off-grid solutions. To address this issue, it is essential for the host country government to have and provide clear data on electricity access and grid arrival targets so that project developers and funders can adapt their project designs accordingly.

³⁰ Ministry of Foreign Affairs, the Netherlands (2014). IOB Evaluation, Access to Energy in Rwanda, Impact evaluation of activities supported by the Dutch Promoting Renewable Energy Programme. Retrieved from Government of Netherlands: <https://www.government.nl/documents/reports/2015/04/28/job-access-to-energy-in-rwanda-impactevaluation-of-activities-supported-by-the-dutch-promoting-renewable-energy-programme>

Regarding clean cooking projects, it is critical to ensure that there are sufficient and appropriate natural resources to use the clean cooking technologies funded by the project. Such issues can be minimized during a robust project design phase that also demands the availability of qualified experts and incorporates their technical understanding. When projects involve technology transfer, funders should identify the local technology manufacturers and service providers to which the technology will be transferred, the duration of the transfer, and prioritize the technology applications with the highest potential for upscaling. This process needs to be clearly designed, with monitoring tools, determined staff roles and periodic reporting.

Overall, for an electricity or clean cooking project design to be 'disbursement-friendly', the following key elements are essential:

- transparent data on energy planning (i.e. grid arrival targets)
- solid technical understanding of the local market, notably key stakeholders (manufacturers,

- suppliers, financial institutions, etc.)
- qualified, and as far as possible, local experts coordination mechanisms included in the initial project structure.

As mentioned in the previous section, a mismatch between demand and supply of local finance can be a barrier to timely disbursement. To reduce this risk, it is critical that programme and project design account for the operational realities of the local market and local financial institutions. In fact, careful design considerations also extend to financial arrangements and guarantees between banks, project developers and suppliers. In Nigeria, the late signing of agreements and contractual requirements between the guaranteeing bank, project developers and their suppliers in one project compromised timely disbursement and delayed completion (Box 3). While the outcome in this example may result from a combination of several factors, it still reflects how the suboptimal design of financial guarantees among actors can exacerbate disbursement delays.

BOX 3

NIGERIA

Solar Energy Programme, 2017–2018 (independent evaluation)³¹

The Solar Energy Programme in Nigeria, financed by UNDP and Nigeria's Bank of Industry (BOI), aimed to promote and support the expansion of RE services for micro businesses that represent almost 80 percent of total businesses in the country

Two project developers (GVE Project Ltd and Arnergy Solar Ltd) were selected. The BOI loan was offered through a guaranteeing bank (Zenith Bank) to facilitate the latter bank refinancing the project developers' activities and developing public-private partnerships.

The public-private partnership structure was intended to reinforce successful project implementation, but its complexity slowed the disbursement of funds. To manage its risk, Zenith Bank required additional documents and confirmations from the BOI before disbursing funds to GVE Project Ltd. **The BOI thus had to conduct inspection visits to verify the procurement of equipment and confirm appropriate use of funds** to reassure Zenith Bank and justify the release of further funds. Delays were caused by this last-minute requirement and by the fact that BOI had not anticipated this situation.

One recommendation proposed to mitigate the risk was to secure disbursement of funds to the project developer's suppliers through the **provision of Advance Payment Guarantees (APGs) or Letters of Comfort** from the BOI **in favour of the local suppliers instead of the project developer.**

³¹ UNDP (2018). Solar Energy Programme in Nigeria.

At the project design stage, it is crucial for developers to identify and engage with financial institutions, bankable SMEs, and beneficiaries that have an interest in energy access projects and companies. As mentioned previously, adequate technical assistance services must also be integrated at several levels (end users, SMEs and financial institutions), especially when targeting vulnerable populations. Developing business plan training for SMEs, or supporting financial institutions in using digital services, such as mobile money, may allow financial institutions to reduce their transaction costs (e.g. from not having to visit remote areas to collect credit repayments), thus increasing access to finance for remote households. From the public sector side, tax incentive programmes and reducing the retail prices of improved cookstoves (ICS) could also encourage more manufacturers to participate, for instance, in voluntary standards and labelling programmes

Lack of public awareness

Lack of awareness of modern energy access solutions and their benefits hinders project implementation and threatens timely disbursement. Awareness campaigns must be built in to energy access projects and should be at the centre of clean cooking project design.

Lack of public awareness about new energy access solutions is a barrier to energy access disbursements, particularly for clean cooking technologies. Weak public awareness limits demand, which prevents project uptake and delays disbursements, especially in a results-based financing scheme. Clean cooking solutions particularly suffer from a lack of public awareness and are thus often sidelined by decision-makers. To overcome this, awareness campaigns, particularly around existing support schemes and knowledge sharing of the benefits of clean fuels and technologies for cooking, should be at the centre of clean cooking project design.

The lack of end user awareness of the multiple co-benefits of energy access is a serious barrier to disbursement, and a major topic that goes beyond the scope of this report. Further references can be found in the Bibliography.

SURVEYS

Surveys targeting both public and private sector stakeholders were conducted in parallel with review of evaluation reports. Interviews were conducted virtually through targeted phone consultations and supplemented by online questionnaires. Both of these surveys were sent through SEforALL and its partners' networks.

Questionnaires combined targeted open and structured multiple-choice questions, and the objective was to explore the impact of exogenous (i.e. political, economic, technological, social, environmental) and endogenous (i.e. internal delays, behavioural barriers, human resources, cultural factors) factors, as well as any other relevant elements. Responses were collected from 34 entities: seven governmental entities implementing energy-access projects or participating in the implementation of those projects, 18 private entities, and nine donors/investors. Of the deep-dive countries, Madagascar was most frequently referenced by respondents as a country they operated in (16 responses), followed by Nigeria (11 responses), India (eight responses), Rwanda (eight responses) and Myanmar (four responses).

Disbursement delays and associated causes

The majority of respondents surveyed cited gaps between the expected and actual disbursement dates, with some respondents noting delays or cancellations of disbursement after contracts/agreements had been signed. This was experienced by 17 out of 30 respondents across all stakeholder groups (i.e. donors, private sector stakeholders and institutions). Respondents frequently noted how the delay in some project-related activities, such as pre-disbursement studies, specific milestones associated with tranche-based financing and administrative procedures, particularly amongst contractors and suppliers, directly affected disbursement schedules.

Administrative factors were the most frequently cited internal factor responsible for disbursement delays. Administrative processes such as extensive, time-consuming paperwork and reporting requirements, in addition to old internal management tools and requirements to seek tax and legal advice, were cited as slowing down the process. This was exacerbated by the previously highlighted human capital constraints on carrying out these activities. Other examples noted were cumbersome due diligence and procurement processes. Private companies in particular mentioned difficulties in complying with donor procurement requirements without proper guidance and a lack of clarity on local processes, for example obtaining long-term land permits, when those are preconditions to disbursement by donors.

External factors referred to by survey respondents included political factors (e.g. changes in political priorities), underdeveloped financial markets and long implementation delays when subcontracting was required. The current COVID-19 crisis was mentioned as the most significant risk factor for timely disbursement in 2020.

Regulation was also mentioned as a potential factor affecting disbursements. On this topic, feedback on the links between regulation and disbursements was more mixed, particularly in responses provided by respondents from donor organizations, which is consistent with results from the Regulatory Indicators for Sustainable Energy (RISE) analysis. However, in general, there was agreement that balanced, attractive, and stable investment regulations (i.e. tax incentive programmes) reduce disbursement delays, as do facilitating mechanisms, such as technical assistance for financial institutions and SMEs.

On the relationship between specific energy solutions and disbursement constraints, some respondents believed that it was not the solution type itself that hindered fund disbursement, but rather the end users associated with that solution. For instance, demand for off-grid solutions tends to be from remote areas.

Due to high transaction costs associated with visiting remote areas, there is more room for delay in the implementation of project activities and consequently in projects' disbursements. One donor mentioned that the size of the project plays a role, and that difficulties in disbursement are mostly faced when managing large engineering, procurement and construction (EPC) projects for electrification, a trend that was already noted in *Missing the Mark 2017*. Mini-grid projects were mentioned several times as being riskier in terms of disbursement delays. On the other hand, no respondents mentioned any particular link between types of clean cooking solutions or solar home systems and disbursement constraints.

Disbursement barriers and financial tools

No specific links were drawn by survey respondents between delays in disbursements and funding tools (e.g. debt, grants, equity, etc.) other than in large projects. It was stated that large projects are often associated with loans disbursed in stages, where payments are dependent on achievement of milestones in project delivery, which can delay disbursements if they are not met.

Several respondents mentioned lack of bankability and integration with viable business models as a reason behind disbursement delays, which in fact reflects flaws in initial project design – notably a mismatch between project objectives and underlying financial instruments offered through the project and/or local financial market.

Disbursement barriers and type of recipients

According to respondents, national development banks are the type of recipient with which there is a higher risk of disbursement delay, because overall they tend to lack experience in energy access projects, and thus their involvement requires engagement and assistance. Survey respondents also noted that national development banks can be slow-moving, strongly risk-averse and impose long due-diligence processes.

Respondents' proposed recommendations

Respondents offered several recommendations to reduce disbursement delays, as summarized in Table 1.

The main recommendations from the institutions, private sector and funders were that donors and institutional recipients of funds should streamline project team recruitment processes, shift implementation to local offices and more technically capable entities, and/or bring greater technical assistance and capacity building to bear on project implementation to help build local skills. In addition, project design should include a market assessment (especially for technology transfer projects) and regular monitoring. Increased human capacity can pave the way for other proposed solutions, namely in improving communication, stakeholder coordination and decision-making.

According to respondents, government support is key to improving disbursement efficiency. Governments need to provide and maintain a stable investment environment that does not hinder timely disbursement of funds. It can do this by working to eliminate corruption, promoting financial schemes to fund the purchase of energy solutions and publishing relevant, up to date information. The latter could include, for example, the progress of central grid expansion or data about locally available energy solutions. It was also mentioned that seeking quick disbursement, especially of large commitments, should not come at the expense of the quality of the disbursement: too much pressure

to disburse quickly may affect the long-term quality and adequacy of the products and services procured for the project.

Funders (i.e. donors and investors) also have a role to play in providing technical assistance and capacity building to help build local skills and support local entities in absorbing funds, which help respect the timeline of project implementation – and thus fosters timely disbursement. Respondents also noted that funders should keep the disbursement process simple and flexible and adapt quickly to new financing/business models, emerging technologies and changing market conditions. The integration of robust monitoring and evaluation systems is also crucial to ensure smooth project implementation and timely disbursement.

Relevant evaluation reports can help draw lessons from project design, planning and implementation. However, the analysis revealed that evaluation reports could give greater attention to the evaluation of disbursement records and delays, particularly to describe underlying factors that caused disbursement delays and inefficiencies in more detail, as well as associated recommendations for mitigating these in the future.

Finally, the private sector has a significant role to play in bringing new managerial skills and facilitating dialogue and decision-making processes between donor and recipient countries. Transparent communication (i.e. between suppliers and contractors) is also a key element to prevent disbursement delays.

TABLE 1:

Survey respondents' recommendations to improve disbursement efficiency

Stakeholder	Main action(s) to undertake
Government	<ul style="list-style-type: none"> • Create an attractive investment environment • Increase transparency and communicate energy plans; provide information through intuitive tools and software • Support local financial institutions to access funds for energy access projects • Assess needs and strengthen capacity of local SMEs to help them become bankable and create viable business models
Private sector	<ul style="list-style-type: none"> • Share new managerial skills • Bring capital (loans and equity)
Donors	<ul style="list-style-type: none"> • Consider blended finance structures, mixing a variety of instruments (grants, loans, risk-sharing instruments) from public and private sources • Offer technical assistance and capacity building to recipients during project implementation • Implement an efficient monitoring system while a project is on foot • Conduct project evaluations and communicate findings through reports

Source: South Pole 2020

SUMMARY OF QUALITATIVE INSIGHTS

As in *Energizing Finance: Missing the Mark 2017*, this updated 2020 edition shows that disbursement and project development influence one another: a late disbursement can be both the cause and consequence of delayed project implementation. Regardless of where in the project implementation process disbursement delays occur, they affect the overall project and therefore the delivery of energy and related co-benefits on the ground.

The same five barriers to disbursement as identified in *Energizing Finance: Missing the Mark 2017* prevail in *Energizing Finance: Missing the Mark 2020*:

1. weak institutional structures and capacity
2. regulatory and policy barriers
3. limited access to, and maturity of, local financial services
4. technical barriers/project design flaws
5. public awareness.

However, the main barrier identified in *Missing the Mark 2017* (time-consuming and difficult foreign currency requirements), was not seen as a major barrier in the 2020 analysis.

What was interesting to note during the research was the influence of project-specific factors on disbursement delays. While the importance of external factors causing delays remains (i.e. political, economic, technological and regulatory factors), survey respondents emphasized the significance of project-related factors in low disbursement rates. That is, burdensome administrative

processes, lack of capacity, limited coordination between implementing agencies and unclear and unfeasible project design.

Taking all of these findings into consideration, **it is clear that sharpening project design, streamlining administrative processes, facilitating stakeholder interaction, removing regulatory barriers and improving local financial services are all essential to increasing disbursement rates and unleashing the full potential of development finance.** Without this, there will not be sustainable energy for all.

Finally, it is important to note that the energy ecosystem has significantly evolved in the last decade, but the current analytical framework has not. Energy is generated and delivered differently today, with off-grid and decentralized, private sector-led options expanding, but this is not always reflected in the available data. The prevailing data representation is still dominated by data from large, donor-funded energy projects. With the OECD CRS codes used, there was a lack of consistent and reliable data on development finance for off-grid electricity and clean cooking solutions. In addition, the analysis could not fully capture new disbursement barriers as these are linked to an emerging market structure that is not fully visible in the datasets and research papers.

The barriers identified in this report that hinder timely fund disbursement to energy access projects across the five deep-dive countries, and recommended solutions, are summarized in Table 2 below.

TABLE 2:

Summary of disbursement constraints and policy recommendations

TYPE OF BARRIER	POLICY RECOMMENDATION
Regulatory and policy barriers	
Weak and unclear legal frameworks and regulations	<p>Governments should provide a balanced and stable regulatory and investment environment for the energy sector²⁹</p> <p>Improve data quality and availability</p> <p>Improve banking and investment policies and regulations to help bring local financial sector to maturity</p>
Institutional structure and public sector capacity	
Limited buy-in and support from the implementing agency	Create a country support office or subcontract project management to local organizations with sectoral expertise
Lack of coordination between government, donor and other relevant stakeholders/beneficiaries	<p>Implement a clear and defined strategy for inter-agency communication</p> <p>Conduct regular meetings</p>
Time-consuming processes with local governments	Streamline decision-making and procurement procedures to improve efficiency
Lack of flexibility in fund transfer between donor and government implementing agency	<p>Establish flexible and transparent contracting arrangements</p> <p>Make a checklist before signing contracts to ensure that disbursement conditions are identified and can be met</p>
Limited access to finance and markets	
Poor householders' lack of access to finance to purchase energy solutions, resulting in delays to project implementation and disbursement	<p>Structure tailored financial solutions, for example payment by instalment models, for poor households who cannot afford large, up front payments</p> <p>Develop pay-as-you-go financing schemes</p> <p>Offer use of mobile money to facilitate repayments</p> <p>Raise consumer awareness of financing schemes, for example through targeted campaigns</p>
Limited access to credit facilities across the HICs for SMEs, delaying project implementation and disbursements	<p>Identify relevant financial institutions and SMEs during the project design phase</p> <p>Offer technical assistance at several levels (end users, SMEs and financial institutions)</p> <p>Provide clear guidelines, easy-to-access services (e.g. toll-free hotlines) and a variety of payment options</p>
Reluctance of local financial institutions to provide loans to households and SMEs due to low risk appetite	<p>Deploy financial risk-sharing mechanisms between donors and governments, to reduce risk and increase affordability of finance for end users</p> <p>Roll out capacity building and awareness programmes for local financial institutions</p>

²⁹ This recommendation was mentioned numerous times by respondents. This does not necessarily contradict the findings from Section 6.1.1 since the RISE regression analysis did not focus on a specific technology and did not study possible medium- to long-term relationships.

TYPE OF BARRIER	POLICY RECOMMENDATION
Technical barriers/flaws in project design	
Unrealistic project timeframes and/or scope	<p>Design project with realistic and appropriate timeframe</p> <p>Select economically viable technology solutions with the highest potential for adoption and scale-up which are not substantially supported by other programmes</p> <p>Identify local technology manufacturers and service providers to which technology will be transferred</p> <p>Develop pilot projects with locally manufactured equipment</p> <p>Structure projects based on early implementation experience</p>
Poor market assessments	<p>Thoroughly assess requirements for adaptation of previous, successful projects to new markets through pre-feasibility studies that include:</p> <ul style="list-style-type: none"> • an assessment of available resources • identification of suitable technology and beneficiaries • identification of key stakeholders • identification of viable distribution channels • qualitative and quantitative studies that describe the target population's behaviour and practices in electricity and clean cooking usage
Inadequate and/or inappropriate pricing (e.g. introduction of innovative technologies that are not competitive with highly subsidized grid tariffs)	<p>Clearly identify local tariffs and pricing mechanisms for different energy solutions</p> <p>Analyse the relevance of each energy solution according to local tariffs and subsidies</p> <p>Promote project's energy solutions with technical assistance and awareness campaigns</p>
Public awareness	
Lack of awareness of existing financial support schemes for energy access targeting SMEs and households (if any)	Conduct consumer awareness campaigns on existing support schemes, especially for clean cooking projects to stimulate demand
Limited public awareness of the benefits of improved cookstoves (ICS) compared to traditional stoves	Conduct awareness campaigns for consumers on the benefits of using LPG and ICS; improve marketing techniques

Source: South Pole 2020



ANNEX

ANNEX I: METHODOLOGY

The following section provides a more detailed overview of both the quantitative and qualitative research methodologies.

The quantitative research was based on a statistical analysis of the data for energy sector development finance commitments and disbursements. The research included the World Bank's Regulatory Indicators for Sustainable Energy (RISE) scores, which are indicators of a country's policies and regulations in the energy sector. The analysis combined this to explore potential links between RISE scores and disbursement rates. This section provides an overview of the scope, the data sources and data selection, and the nature of the analysis, as well as analytical considerations, definitions and data constraints.

Scope

The data selection focused on 20 HICs. In contrast to *Energizing Finance: Missing the Mark 2020*, the list of countries has been updated to correspond with

the countries included in *Tracking SDG7: The Energy Progress Report 2020*.

The list of countries selected for the quantitative analysis is as follows:

- **Electricity access:** Angola, Bangladesh, Burkina Faso, Chad, Congo (DR), Ethiopia, India, Kenya, Korea (DPR), Madagascar, Malawi, Mozambique, Myanmar, Niger, Nigeria, Pakistan, Sudan, Tanzania, Uganda and Yemen.
- **Clean cooking access:** Afghanistan, Bangladesh, China, Congo (DR), Ethiopia, Ghana, India, Indonesia, Kenya, Korea (DPR), Madagascar, Mozambique, Myanmar, Nigeria, Pakistan, Philippines, Sudan, Tanzania, Uganda and Vietnam.

The *Energizing Finance: Missing the Mark 2020* quantitative analysis covers the period 2013 to 2018.

Data sources and selection

The key data sources identified for the quantitative analysis are summarized as follows:

TABLE 3:
Key data sources for the quantitative analysis

DATA	SOURCE	DESCRIPTION	ACCESSIBLE AT
Commitment and disbursement data	OECD	The data come from the publicly accessible Creditor Reporting System (CRS). This repository houses development finance commitment and disbursement data from OECD countries and multilateral donor organizations.	https://stats.oecd.org/
RISE scores	World Bank	RISE scores provide a reflection of a country's policies and regulations in the energy sector, organized by the three pillars of the SEforALL initiative: Energy Access, Energy Efficiency and Renewable Energy.	https://rise.worldbank.org/scores

Source: South Pole 2020

Concerning commitment and disbursements, the key data fields from the CRS database that were required for the analysis are donor country, recipient country, project purpose, commitments, disbursement schedule schemes, actual disbursements, and project start and end dates.

Regarding the RISE scores, this study proposed to incorporate them to assess whether (and if so, to what extent) there are parallels between RISE scores (or their evolution over time) and the commitment/disbursement gap.

Regarding data selection, for energy, the data selected in the CRS database were under the sector labelled '230: II.3. Energy, Total'. For clean cooking projects, the data were extracted from the entire database because clean cooking projects are not neatly classified into one single category.

Matching transactions to projects

The CRS data report development finance flows at the transaction level but do not provide high-quality project identifiers to group transactions into projects. As a result, the grouping can be done either manually, which is both labour-intensive and lacking in replicability, or with an algorithm tailored to the CRS data. The procedure developed for this report runs on the statistical software Stata but can be easily replicated on other statistical software.

The algorithm groups transactions into projects in a multi-step process. First, transactions with the same donor, donor agency and recipient are grouped. Second, within each of these groups of transactions, the number of unique project titles, project numbers and CRSid identifiers is calculated. Third, the initial groups are broken up into subgroups based on the variable with the fewest unique values among the project title, project number and CRSid. This yields a high-quality initial grouping.

To improve this initial grouping, two additional steps are taken. First, projects from the International Development Association (IDA) and the International Bank for

Reconstruction and Development (IBRD) are re-grouped according to their project number, a high-quality identifier for those donors. Second, transactions from Japan that have a project number but have an empty project title or a project title that groups many unrelated projects are grouped according to their project number. This improves the quality of the transaction-project grouping for Japanese development finance.

Data analysis

This section presents the different types of data analyses that were conducted as part of the quantitative analysis.

The first stage of the analysis consisted of conducting general statistical analysis related to commitment and disbursement data for energy and clean cooking. For commitment and disbursement levels, the results are presented in absolute terms (USD) and in relative terms (as a percentage of total commitments worldwide). Similar statistics are presented for the commitment/disbursement gap. All results are summarized as totals but can also be disaggregated by various data fields such as sector, donor or recipient country. The second stage of the analysis consisted of conducting a trend analysis of the data over the time period 2013–2018. This study also proposed a comparison of commitment and disbursement trends with the evolution in RISE scores over time, even though it was unlikely to be possible to demonstrate causality. Finally, an important aspect of the analysis related to exploring delays in disbursements. The aim was to identify whether there are delays in disbursements in energy and clean cooking access projects, and if so, to calculate the magnitude of those delays. The possible reasons behind these delays were investigated in the qualitative analysis.

The disbursement delay analysis relies on an agreed definition of what constitutes a delay and how to differentiate between different levels of delays. Similar to Missing the Mark 2017, it was proposed to use a binary and a non-binary indicator to classify and calculate project delays. The binary indicator established whether a project was on time or late, while the non-binary indicator revealed the level of the delay.

Missing information for disbursement constraints analysis, 2002–2018

TABLE 4:

Missing data for disbursement constraint analysis by donor

Donor	Total commitment (USD million)	Percentage of financing with missing data (%)	Percentage of projects with missing data (%)	Percentage of overall financing with missing data (%)
Asian Development Bank	18,159	15	67	20
International Development Association	17,234	23	37	19
Japan	12,054	7	67	13
International Bank for Reconstruction and Development	8,973	9	45	10
Germany	6,439	3	58	7
International Finance Corporation	3,642	100	100	4
Islamic Development Bank	3,295	100	100	4
France	3,023	3	75	3
United States	2,931	37	53	3
EU Institutions	2,751	19	92	3
African Development Fund (ADF)	2,553	100	100	3
African Development Bank	1,976	100	100	2
Climate Investment Funds	1,056	100	100	1
Korea	1,014	20	44	1
Asian Infrastructure Investment Bank	908	100	100	1
Arab Fund for Economic and Social Development (AFESD)	900	100	100	1
United Kingdom	751	12	50	1
Norway	731	8	31	1
OPEC Fund for International Development	643	100	100	1
Kuwait	475	100	100	1
Sweden	432	20	79	0
United Arab Emirates	390	100	100	0
Italy	357	12	56	0

Donor	Total commitment (USD million)	Percentage of financing with missing data (%)	Percentage of projects with missing data (%)	Percentage of overall financing with missing data (%)
Denmark	233	0	51	0
Belgium	193	76	96	0
Green Climate Fund	177	26	50	0
Global Environment Facility	157	51	78	0
Netherlands	140	20	58	0
Finland	108	3	33	0
Others	410	N/A	N/A	0

Source: South Pole 2020, based on OECD CRS data.

TABLE 5:
Missing data for disbursement constraint analysis by recipient

Recipient	Total commitment	Percentage of financing with missing data (%)	Percentage of projects with missing data (%)	Percentage of overall financing with missing data (%)
India	30,096	21	65	33
Bangladesh	14,628	28	62	16
Pakistan	14,034	21	62	15
Kenya	6,041	32	61	7
Ethiopia	4,010	34	56	4
Tanzania	3,631	39	57	4
Nigeria	2,935	66	56	3
Uganda	2,679	38	55	3
Myanmar	2,570	5	40	3
Mozambique	2,068	29	63	2
Yemen	1,672	48	86	2
Congo (DR)	1,656	23	63	2
Angola	1,351	93	70	1
Burkina Faso	1,311	53	71	1
Sudan	1,102	99	82	1
Niger	1,041	61	81	1
Malawi	616	5	47	1
Madagascar	357	34	79	0
Chad	173	68	81	0
Democratic People's Republic of Korea	134	99	80	0

Source: South Pole 2020, based on OECD CRS data.

TABLE 6:

Missing data for disbursement constraint analysis by flow type

Flow types	Total commitment	Percentage of financing with missing data (%)	Percentage of projects with missing data (%)	Percentage of overall financing with missing data (%)
ODA Loans	46,563	21	71	51
Other Official Flows (non-export credit)	35,093	39	77	38
ODA Grants	9,945	31	58	11
Equity Investment	431	65	52	0
Private Development Finance	73	10	33	0

Source: South Pole 2020, based on OECD CRS data.

TABLE 7:

Missing data for disbursement constraint analysis by number of transactions per project

Number of transactions per project	Total commitment	Number of projects	Share of overall financing with missing data (%)
1	10,340	1169	11
2	10,132	557	11
3	8,555	252	9
4	7,251	140	8
5	5,057	93	5
6	4,395	57	5
7	3,985	47	4
8	2,505	38	3
9	2,987	42	3
10	2,710	27	3
10+	7,234	116	8

Source: South Pole 2020, based on OECD CRS data.

Description of the clean cooking keyword search methodology

A multi-step keyword search analysis was used to identify clean cooking transactions in the CRS data. First, an initial list of clean cooking transactions for 2018 was identified with a preliminary list of keywords consisting of cook, cooker, cooking, stove(s), pellet(s), biomass, biogas, LPG, kerosene, indoor, briquette, liquefied,

wood, ethanol, digester, manure and cylinder(s). Both the project titles and descriptions were automatically examined with the statistical software Stata.

Second, each of these 240 transactions was manually checked to verify whether it was, in fact, clean cooking related. Third, the accuracy of each of the individual keywords was then assessed from this manual check and reported in Table 8 (see below).

TABLE 8:
Keywords ranked by quality

Keywords	Transactions flagged (2018)	Number of true positive (manual check)	Percentage of true positives (%)
All keywords	240	51	21
Pellet	1	1	100
Pellets	1	1	100
Digester	1	1	100
Stoves	25	24	96
Stove	31	28	90
Cook	55	30	55
Cooking	36	18	50
Liquefied	8	3	38
Ethanol	3	1	33
Biogas	23	5	22
Biomass	49	7	14
Wood	60	7	12
Indoor	40	0	0
LPG	12	0	0
Cooker	6	0	0
Kerosene	5	0	0
Manure	5	0	0
Cylinder	2	0	0
Briquette	1	0	0
Cylinders	1	0	0

Source: South Pole 2020, based on OECD CRS data.

The analysis shows that some keywords, such as pellet(s), reliably identify clean cooking transactions but identify few transactions. Other keywords, such as stove(s), reliably identify clean cooking transactions and identify many transactions. Others, such as cook and cooking, identify many transactions but are somewhat less reliable in identifying clean cooking transactions.

The top seven keywords based on these criteria were chosen for the definitive keyword text search that was used to identify the final list of clean cooking transactions for all years.

ANNEX II

DETAILED METHODOLOGY FOR THE RISE CORRELATION ANALYSIS

To address the omitted variable bias inherent in probing the relationship between regulatory improvements and aid activity, a fixed effects regression specification was important. Country-fixed effects explain the variation in development finance commitments and disbursements that are associated with country-specific factors that do not vary over time, such as geography or language. Time-fixed effects capture the variation in commitments and disbursements that is associated with specific years and does not vary across countries, such as years when governments have more fiscal space for development finance. The remaining variation, therefore, depends on factors that vary within countries and across time – such as the regulatory and policy changes captured by the RISE.

The correlation analysis is observational (i.e. non-experimental), so results must be interpreted with caution. Although fixed effects capture a significant share of bias stemming from key variables omitted, they cannot capture omitted variable bias from time-varying, country-varying changes. Moreover, the true relationships between the variables analyzed (and those that are omitted) may be complex, non-linear and interactive, which may not match the linear regression specification. As a result, the results presented below should be interpreted as suggestive.

The RISE data span eight years from 2010 to 2017 and cover all high-impact countries (HICs) for electricity access, energy efficiency and renewable energy (RE) except Korea (DPR) and Yemen. Therefore, the regression has a relatively small sample of 144 data points. With the 18 country fixed effect dummies and the eight-year fixed effect dummies, there are 118 remaining degrees of freedom. The small size of the sample results from the fact that the RISE do not cover the period prior to 2010.

The independent variable in the regressions — the variable to be explained — is commitments and disbursements per capita to the energy sector. The data were normalized by population so that they are comparable across countries and so that the units in the regressions are appropriate.

Key co-variables from the World Development Indicators (WDI) data include real purchasing power parity-adjusted per capita income, which serves as a proxy for living standards; the share of the population that is electrified, which serves as a proxy for the electrification gap; and the share of the rural/urban population that is electrified, which can be used to compute the gap in electrification across sectors. Other variables contained in the WDI data, such as the megawatts of generation capacity per inhabitant, could not be included in the analysis due to limited coverage.

DETAILED RESULTS

The RISE for electricity access, energy efficiency and RE do not appear to be strongly correlated with overall energy sector development finance commitments per capita in HICs.

In the baseline regression with no dependent variables, the fixed effects capture 30 percent of the variation in overall energy-sector commitments per inhabitant (regression A1). Adding the RISE for electricity access increases the R^2 to 35 percent (A2) and adding in the one-year change in the RISE increases the R^2 to 31 percent (A3). Adding both the indicator and the change increases the R^2 to 33 percent (A4). For each of these regression specifications, the increase in the R^2 over the baseline is small and none of the coefficients is statistically significant. As a result, changes in the electricity-access regulations and policies that the RISE measure do not appear to have much explanatory power over development finance commitments to the energy sector in HICs in the short term.

Adding the RISE for energy efficiency to the baseline regression increases the R^2 to 35 percent (A5); adding the change in the RISE for energy efficiency increases the R^2 to 31 percent (A6); and adding both increases the R^2 to 31 percent (A7). As is the case with the electricity access indicators, the energy efficiency indicators are not statistically significant and do not materially increase the share of the variation in commitments explained by the regression. Similarly, adding the RISE for RE to the baseline regression increases the R^2 to 34 percent (A8); adding the change in the RISE for renewable energy increases the R^2 to 33 percent (A9); and adding both increases the R^2 to 33 percent (A10). Like with the other two indicators, the coefficients for the RE indicator are not statistically significant and do not materially increase the share of the variation in commitments explained by the regression. Therefore, the changes in the energy efficiency and RE regulation and policies that the RISE

measure appear to have limited explanatory power over total energy-sector development finance commitments in HICs.

Other variables in the WDI data do appear to be strongly correlated with energy-sector development finance commitments. For example, a regression that includes the share of populations with electrification, the difference between urban and rural electrification rates, and per capita income increases the R^2 to 47 percent (model A11) and yields statistically significant coefficients for the first two variables. The negative sign for the coefficient for the share of electrified persons in the country and the gap between urban and rural electrification rates is consistent with the notion that countries in greater need should be the recipients of more development finance.

FIGURE 20

Energy sector commitments per capita and RISE scores, HICs, 2013-2018

VARIABLES	(1) A1	(2) A2	(3) A3	(4) A4	(5) A5	(6) A6	(7) A7	(8) A8	(9) A9	(10) A10	(11) A11
RISE_ea		0.0952 (0.0772)		0.146 (0.113)							
RISE_re								0.0445 (0.0714)		0.0187 (0.0795)	
RISE_ee					-0.108 (0.123)		-0.0895 (0.164)				
RISE_ea_chg			0.0244 (0.0862)	-0.0785 (0.119)							
RISE_ee_chg						0.0821 (0.162)	0.130 (0.202)				
RISE_re_chg									0.177* (0.0965)	0.168* (0.0966)	
ea_pct											-37.07** (14.97)
ea_gap_urb_ru											-30.25*** (9.352)
gdp_pc											-0.000130 (0.00439)
Constant	4.235 (3.832)	2.253 (3.972)	4.843 (4.817)	0.364 (4.305)	5.329 (4.236)	4.916 (4.769)	5.162 (4.803)	4.496 (4.264)	4.552 (4.705)	4.276 (4.737)	49.42** (20.07)
Observations	171	144	126	126	144	126	126	144	126	126	143
R-squared	0.296	0.353	0.311	0.328	0.347	0.312	0.314	0.344	0.326	0.326	0.465
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Standard Errors	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: South Pole 2020

RISE for electricity access, energy efficiency and RE also do not appear to be strongly correlated with energy-sector finance disbursements in HICs. The baseline regression with no covariates (regression B1) explains 46 percent of the variation in disbursements per capita. The R^2 increases to 49 percent when the RISE for electricity access is added (B2), increases to 52 percent when the

change in the indicator is added (B3), and increases to 52 percent when both the indicator and the change are added (B4). Similarly, the R^2 increases to 49 percent when the RISE for energy efficiency is added (B5), increases to 52 percent when the change in the indicator is added (B6), and increases to 52 percent when both the indicator and the change are added (B7).

FIGURE 21

Energy sector disbursements per capita and RISE scores, HICs, 2013-2018

VARIABLES	(1) B1	(2) B2	(3) B3	(4) B4	(5) B5	(6) B6	(7) B7	(8) B8	(9) B9	(10) B10	(11) B11
RISE_ea		0.0308 (0.0281)		0.0476 (0.0430)							
RISE_re								0.0504* (0.0276)		0.0506 (0.0307)	
RISE_ee					0.0275 (0.0530)		-0.0102 (0.0698)				
RISE_ea_chg			-0.0296 (0.0408)	-0.0632 (0.0566)							
RISE_ee_chg						0.0584 (0.0397)	0.0639 (0.0530)				
RISE_re_chg									-0.00815 (0.0405)	-0.0312 (0.0442)	
ea_pct											-8.367 (6.638)
ea_gap_urb_ru											-9.012** (4.258)
gdp_pc											-0.00473*** (0.00164)
Constant	3.542 (2.546)	3.431 (2.610)	4.852 (3.130)	3.389 (2.826)	4.286 (2.844)	4.831 (3.156)	4.859 (3.190)	3.675 (2.824)	4.821 (3.138)	4.077 (3.158)	38.16*** (8.655)
Observations	171	144	126	126	144	126	126	144	126	126	143
R-squared	0.457	0.491	0.518	0.524	0.488	0.518	0.519	0.494	0.516	0.521	0.712
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Standard Errors	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust	Robust

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: South Pole 2020

The increases in R^2 are modest (less than seven percentage points), and none of the coefficients is statistically significant, which again suggests that changes in the policies and regulations for electricity access and energy efficiency captured by the RISE are not strong predictors of energy-sector development finance disbursements in the short term.

However, the coefficient for the RE indicator significantly statistically predicts per capita energy disbursements

in HICs at the 10 percent significance level. Every additional point in the RE indicator is associated, on average, with USD 0.05 in additional disbursements (B8), and its inclusion improves the share of the variation explained by about three percentage points. The other two regression specifications with RE covariates (B9 and B10) do not have statistically significant coefficients and increase the R^2 to 52 percent from the baseline of 46 percent.

Development finance commitments and disbursements specifically for RE in HICs are significantly smaller than overall energy sector development finance. In the 2010–2017 period where RISE scores are available, for example, only 45 percent of the country-year observations have new RE commitments and only 74 percent have disbursements.

Puzzlingly, RISE scores for quality of policies and regulations for RE are associated with lower RE

development finance in the case of both commitments and disbursements (regressions C2-C4, D2-D4). Moreover, for disbursements, the negative coefficients are statistically significant. This implies that on average, HICs that improve their RISE score for RE tend to receive less RE development finance. One possible interpretation is that alternative sources of financing become more viable and increase as RISE scores (and therefore policies and regulation) improve, thus reducing the need for development finance.

FIGURE 22
RE commitments per capita and RISE scores

VARIABLES	(1) Model C1	(2) Model C2	(3) Model C3	(4) Model C4
RISE_re		-0.00130 (0.0246)		-0.00184 (0.0285)
RISE_re_chg			0.0479 (0.0383)	0.0485 (0.0385)
Constant	-0.492** (0.246)	-0.408 (0.435)	-0.371 (0.295)	-0.343 (0.496)
Observations	164	138	120	120
R-squared	0.235	0.247	0.280	0.280
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Standard Errors	Robust	Robust	Robust	Robust

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: South Pole 2020

FIGURE 23
RE disbursements per capita and RISE scores

VARIABLES	(1) Model D1	(2) Model D2	(3) Model D3	(4) Model D4
RISE_re		-0.0167* (0.00867)		-0.0266* (0.0121)
RISE_re_chg			0.00152 (0.00766)	0.0109 (0.00923)
Constant	-0.322 (0.206)	0.0755 (0.164)	-0.209* (0.122)	0.196 (0.200)
Observations	164	138	120	120
R-squared	0.484	0.467	0.504	0.536
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Standard Errors	Robust	Robust	Robust	Robust

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: South Pole 2020

ANNEX III

REVIEW OF EVALUATION REPORTS

Information contained in the available literature was reviewed. In order to do this in a structured and organized manner, information capture has been recorded in a grid to easily store, classify and refer to information that is linked to disbursement constraints, identified barriers and recommendations for improvement.

This classification of information has helped to determine the various reasons that are most often referenced as causing delays in disbursements for energy-access projects in a structured manner. This also helped to identify interesting case studies that could add valuable insights and a narrative to the analysis. Where possible, the reasons behind delays or gaps in disbursements will be cross-referenced with the results from the quantitative analysis. The analysis grid is detailed in Table 9.

TABLE 9:

Analysis grid for review of reports

Data fields of interest for the qualitative analysis
Type of source (multilateral and bilateral donors/development partners, national actors/academia)
Name of the organization
Name of the report
Name of the deep-dive country (Ethiopia, India, Myanmar, Madagascar, Nigeria, Rwanda)
Report description
Sector concerned (electricity/clean cooking/both)
Financial instrument(s) mentioned in the report
Recommendations for improvements/lessons learnt (if any)
Ethanol

Source: South Pole 2020

Information is then inserted into a matrix that allowed us to summarize and synthesize the different types of disbursement constraints (regulatory, institutional, technical) that were faced in the panel of projects studied, and the potential solutions implemented to overcome these barriers. The analysis criteria are presented in the table below.

TABLE 10:

Report review matrix

Type of disbursement constraints/ underlying challenges	Sub-sector	Proposed solutions
Regulatory and policy barriers		
Institutional structure and public sector capacity		
Limited access to finance and local market		
Technical barriers/flaws in project design		
Public awareness		

Source: South Pole 2020

Finally, a case study was extracted for each deep-dive country, i.e. a project with its characteristics, highlighting disbursement difficulties and mechanisms used to mitigate these challenges, if any.

ABBREVIATIONS

ADB	Asian Development Bank
AFDB	African Development Bank
ADF	African Development Fund (window of the AFDB)
APD	average project delay
BOI	Nigerian Bank of Industry
CRS	Creditor Reporting System
DAC	Development Assistance Committee
DFI	development finance institution
DRC	Democratic Republic of Congo
DPR	Democratic People's Republic
GEF	Global Environmental Fund
GHG	greenhouse gas
HIC	high-impact country
IBRD	International Bank for Reconstruction and Development (member of the World Bank Group)
ICS	improved cooking stove
IDA	International Development Association (member of the World Bank Group)
IEA	International Energy Agency
IFC	International Finance Corporation (member of the World Bank Group)
LPG	liquified petroleum gas
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OOF	Other Official Flows
PMU	project management unit
PREP	Promoting Renewable Energy Program
PV	photovoltaic
QUODA	Quality of Official Development Assistance
RE	renewable energy
RISE	Regulatory Indicators for Sustainable Energy
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All
SMEs	small and medium-sized enterprises
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WDI	World Development Indicators

GLOSSARY

Average Project Delay (APD) – an indicative measure of the severity of disbursement constraints. The minimum value of -100 indicates that the project timeline has elapsed with no disbursements. A value of zero indicates that disbursements are on schedule. The maximum value of 100 indicates that all commitments have been disbursed on or before the project start date.

Beneficiary – a recipient of development finance, including intermediaries.

Commitment – a firm, written obligation by means of a board decision on investment, closure of a financing contract or similar actions, and backed by the necessary funds, to provide specified assistance/financing to a project, recipient country, or any other partner organization.

Development finance – Finance tracked in the Creditor Reporting System³² (CRS) database of the Organisation for Economic Co-operation and Development (OECD), including both Official Development Assistance (ODA) and Other Official Flows (OOF). The donor categories include Development Assistance Committee (DAC) countries, other non-DAC countries (though not including China, India and Russia), private foundations (such as the Hewlett Foundation and the Bill and Melinda Gates Foundation), bilateral and multilateral development agencies (such as the United States Agency for International Development (USAID)), development finance institutions (such as the World Bank), and United Nations agencies.

Disbursement – the placement of resources at the disposal of a recipient country or agency, or, in the case of internal development-related expenditures, the outlay of funds by the public sector.

Disbursement constraint – the difficulty that development partners and beneficiaries face to meet a

commitment, either in terms of the amount of financing disbursed or the timeframe for disbursement. Pre-commitment delays are excluded from this analysis.

Donor – a government or official agency making a commitment to provide development finance.

Energy – in the OECD CRS database, energy projects encompass energy policy, energy generation (renewable sources), energy generation (non-renewable sources), hybrid energy plants, nuclear energy and energy distribution. Energy projects include off-grid and some clean cooking projects³³; these may not include all such projects tracked in the OECD CRS database due to data limitations as detailed in Annex I.

High-impact countries – the 20 countries with the highest absolute gaps in access to electricity and/or clean fuels and technologies for cooking, measured by population, as identified in *Tracking SDG7: The Energy Progress Report 2020*. For electricity access, the countries are Angola, Bangladesh, Burkina Faso, Chad, Congo (DR), Ethiopia, India, Kenya, Korea (DPR), Madagascar, Malawi, Mozambique, Myanmar, Niger, Nigeria, Pakistan, Sudan, Tanzania, Uganda and Yemen. For clean cooking access, the countries are Afghanistan, Bangladesh, China, Congo (DR), Ethiopia, Ghana, India, Indonesia, Kenya, Korea (DPR), Madagascar, Mozambique, Myanmar, Nigeria, Pakistan, Philippines, Sudan, Tanzania, Uganda and Vietnam. The *Energizing Finance: Missing the Mark 2017* report utilized a slightly different list of countries, drawn from the *Global Tracking Framework 2015* (International Energy Association (IEA) and the World Bank 2015).

Renewable energy (RE) projects – in line with the OECD CRS database, renewable energy sources include hydro-electric power plants, solar energy, wind, marine, geothermal and biofuel-fired power plants.

³² The objective of the CRS Aid Activity database is to provide a set of readily-available basic data that enable analysis on where aid goes, what purposes it serves, and what policies it aims to implement, on a comparable basis for all Development Assistance Committee members. More information on https://www.oecd-ilibrary.org/development/data/creditor-reporting-system_dev-cred-data-en.

³³ Between 2013 and 2018, clean cooking transactions classified as energy projects in the OECD CRS database amounted to less than USD 60 million in commitments (0.11 percent of total) and USD 17 million (0.05 percent of total) in disbursements.

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