

ENERGIZING FINANCE
REPORT SERIES

UNDERSTANDING THE LANDSCAPE

TRACKING FINANCE FOR ELECTRICITY AND CLEAN COOKING ACCESS
IN HIGH-IMPACT COUNTRIES



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FOREWORD

This new report, *Understanding the Landscape: Tracking Finance for Electricity and Clean Cooking Access in High-Impact Countries*, provides a pathway to refine and improve strategies to accelerate progress in delivering universal energy access.

The report is specifically geared for government leaders, public and private finance players and energy access enterprises, at the international and domestic level, that all play critical roles in catalyzing action on access to electricity and clean cooking—two cornerstone priorities of the Sustainable Development Goals.

Our findings are especially relevant for countries in Asia and Sub-Saharan Africa, which have significant energy access gaps and promising opportunities to close those gaps more quickly and at less cost. We offer specific recommendations for doing so.

While many studies have estimated the amount of investment needed to meet energy access goals, none has attempted to systematically capture what developing countries are spending on energy infrastructure and, more importantly, the overall effectiveness of those expenditures in delivering modern energy services to more people, more quickly.

This report is part of a unique research effort by Sustainable Energy for All, the World Bank, the African Development Bank, Climate Policy Initiative, E3 Analytics and Practical Action Consulting that for the first time begins to answer these critical questions. Through multiple reports, we evaluated the quantity and impact of energy-related finance from all sources—public and private, domestic and

international—for electricity and clean cooking access.

This report analyzes financing commitments for electricity and clean cooking over 2013-14 in 20 high-impact countries in Sub-Saharan Africa and Asia, whose efforts are critical to meeting energy access objectives by 2030. It includes detailed country studies, focused on Bangladesh, Ethiopia and Kenya, looking at domestic finance spending on electricity and clean cooking access.

While the overall data has limitations, we have enough information to get a first-ever picture of how energy access finance is being used in these 20 countries and for what types of infrastructure – whether grid-based electricity that serves commercial, industrial and urban populations, or decentralized electricity solutions, such as household solar systems, that are better suited for rural populations, or biogas and biomass cooking solutions for households.

The report's biggest takeaway is that finance flows for electricity and clean cooking are way too low to deliver universal access.

In the case of electricity, much of the finance today focuses on more expensive grid-based infrastructure, highlighting the need for greater attention on decentralized renewable energy solutions, which can deliver basic modern energy services more quickly and at less cost to rural and hard to reach areas. Our report suggests that by refining electrification strategies with a more balanced emphasis on grid- and off-grid solutions, governments and development institutions can achieve far bigger gains on access to electricity, especially in rural areas. The report highlights early progress in this regard – by countries such as Kenya

and Bangladesh, and development finance institutions like the World Bank and the African Development Bank—but those efforts are still early stage and bigger shifts are needed.

In the case of clean cooking, the challenges are far bigger and more profound. While a handful of countries, like Bangladesh and Indonesia, have made advances on clean cooking, overall investment in clean cooking fuels and technologies is extraordinarily low and bold market-based strategies are urgently needed.

Our research comes at a critical juncture in achieving—or falling short—of the global energy access goals. We have just 13 years left to achieve energy access for all by 2030. Yet, based on the latest 2017 Global Tracking Framework data, just over one billion people globally still lack access

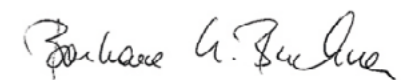
to electricity and three billion lack access to clean cooking. The vast majority are in the 20 countries we target in our research.

These numbers are astounding and unacceptable. Lacking access to electricity means food cannot be refrigerated, vaccines cannot be kept safe and school children cannot do homework at night. Similarly, indoor cooking pollution from burning charcoal, wood and other fuels kills several million people every year. There is a larger economic toll, too. Countries that leave these populations behind undermine long-term economic development as well as national security.

We can and must do better to accelerate energy access progress. We hope this report provides a pathway for doing so.



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CONTENTS

COPYRIGHT AND DISCLAIMER	02
Rights and Permissions	02
ACKNOWLEDGEMENTS	03
FOREWORD	04
CONTENTS	06
EXECUTIVE SUMMARY	08
Electricity Findings	09
Cooking Findings	13
Conclusions	14
ABBREVIATIONS	15
GLOSSARY	16
ANNEX A FINANCING COMMITMENTS FOR ENERGY ACCESS IN HIGH-IMPACT COUNTRIES	18
ANNEX B FINANCING COMMITMENTS FOR ENERGY ACCESS IN BANGLADESH, ETHIOPIA AND KENYA.....	22
ANNEX C ACCESS TO MODERN ENERGY SERVICES IN HIGH-IMPACT COUNTRIES.....	28
BIBLIOGRAPHY	30
FIGURES	
Figure ES1 - Share of finance for electricity by technology type across the high-impact countries	10
Figure ES2 - Finance commitments supporting residential electricity, by Tiers of energy access (average in 2013-14) ...	11
Figure ES3 - Sources of international finance for electricity flowing to the 20 high-impact countries	12
Figure ES4 - Sources of finance for clean cooking	13
Figure A1 - Tracked finance for electricity in high-impact countries	18
Figure A2 - Tracked finance for clean cooking in high-impact countries	20
Figure B1 - Electricity finance flows in Bangladesh	22
Figure B2 - Clean cooking finance flows in Bangladesh	23
Figure B3 - Electricity finance flows in Ethiopia	24
Figure B4 - Clean cooking finance flows in Ethiopia	25
Figure B5 - Electricity finance flows in Kenya	26
Figure B6 - Clean cooking finance flows in Kenya	27
Figure C1 - Access to modern energy services in high-impact countries	28





EXECUTIVE SUMMARY

More than one billion people live without access to electricity and many more live with inadequate electricity supply; at the same time, more than three billion lack access to clean cooking technologies (IEA and World Bank, 2017). A lack of—or limited—electricity access means clinics cannot keep vaccines cool, school children cannot do homework at night and businesses cannot run efficiently (United Nations, 2017). Similarly, indoor cooking pollution from burning wood, charcoal, coal and other fuels kills around four million people a year (United Nations, 2017).

Despite the scale of these challenges, relatively little has been known—until now—about the volume or composition of finance directed to the energy sectors in the developing world. Finance is critical to support the achievement of Sustainable Development Goal 7, which aims for universal energy access by 2030—including in electricity and clean cooking—and calls for energy to be affordable, reliable and sustainable.¹ While there have been a number of attempts to estimate the amount of investment needed to meet universal energy access goals, none have attempted to systematically analyze what these countries are actually spending on energy access.

This report aims to advance the understanding of finance directed toward the developing world's energy sectors, covering both electricity and clean cooking. The report covers the 20 developing countries—known as the high-impact countries—that together are home to 80 percent of those living without access to modern energy globally. Given their weight in terms of unserved populations, they jointly provide a reasonable first-order approximation for

the overall energy access situation globally. The analysis of finance to support energy access is considered, therefore, from two angles:

1. The first—the “global approach”—draws on international databases for the 20 high-impact countries for electricity and clean cooking. The advantage of this approach is that it paints a broad picture of the global situation and is relatively effective at capturing international public finance for large-scale projects. The main disadvantage is a more limited coverage of domestic finance, which is known to be a significant share of overall financing flows to the sector and could amount to 20-40 percent of the total, based on the case studies in this report. While data on domestic private finance was available in some cases, there was limited information on domestic public finance in international databases. Results are reported on aggregate for these 20 countries and are influenced by flows to larger countries, such as India.

2. The second—the “country approach”—is based on collecting data at the national level for three high-impact countries—Bangladesh, Ethiopia and Kenya—using databases and surveys of governments, utilities and other local institutions. These countries were chosen for their varying levels of economic and energy sector development, to provide a regional contrast between Africa and Asia, and also because baseline energy access surveys were underway. The advantage of this approach is that it provides for more precision and is better able to capture domestic public

finance—although availability of domestic private finance remains limited. The main disadvantage is the higher cost and longer time frame required, which limited its application to just three countries.

Inevitably when piloting a new approach, data limitations are encountered, and results should therefore be considered indicative. Such limitations can offer insights on where to strengthen data tracking systems for future work. For example, better data tracking is needed for private finance of decentralized energy systems. Also, there is a need to better distinguish between finance that generates new electricity connections versus improved service for existing connections. Finally, there is a need across all data collection systems to more thoroughly capture clean cooking investments.

Overall, finance for energy access is not on track to meet universal energy access goals.

Finance commitments for electricity will need to increase significantly to meet international electrification targets. The annual average level of finance for electricity across the 20 high-impact countries was at least \$19.4 billion over 2013-14, covering the full electricity supply chain from generation through transmission and distribution to off-grid electricity. Only about \$6 billion of this total is estimated to result in both *new and improved* access to electricity for residential users through investments along the electricity supply chain. This falls well below the \$45 billion needed annually to meet 2030 goals for universal electrification (SEforALL, 2015). Indeed, detailed case studies show that countries allocated \$13-33 per capita per year to finance for electricity, equivalent to between 2-3 percent of their GDP. As a point of reference, the cost of basic electricity access—like a small solar home system—is between \$50-100 for a typical household of five people, while the cost of providing a higher service level with grid electricity can be considerably greater (World Bank, 2015).

Finance commitments for clean cooking, on the other hand, are so low that they could not be expected to

have any significant impact on the cooking access gap. Annual residential clean cooking investment needs are at least \$4.4 billion per year (SEforALL, 2015); however, trackable clean cooking investment across all 20 high-impact countries amounted to an average of just \$32 million per year. In absolute terms, finance for clean cooking in high-impact countries comes to under \$1 per capita per year. As a point of comparison, the cost of providing an improved cookstove for one household—excluding fuel costs—is estimated at around \$8 for an advanced biomass cookstove, rising to around \$40 for an alcohol stove (GACC, 2017b). An LPG stove typically costs in the region of \$55 in up-front costs and around \$250 in (unsubsidized) fuel costs (Putti et al., 2015).

ELECTRICITY FINDINGS

Almost all finance commitments for electricity that could be tracked in the high-impact countries were aimed at grid electricity. Only one percent of total finance for electricity—or around \$200 million per year—is directed to support investment in off-grid solutions, such as solar home systems (SHS) and mini-grids, across the high-impact countries (Figure ES1). Due to limitations in data tracking, this likely underestimates the financing of small-scale, decentralized private firms active in this space. A further eight percent of total finance went to market support activities, encompassing a wide range of technical assistance including, among other things, the development of markets for the private sector provision of decentralized energy solutions. By contrast, 90 percent of trackable finance went to the development of national electricity infrastructure, including to grid-connected generation projects (which accounted for 72 percent of the total) and transmission and distribution infrastructure (19 percent of the total).

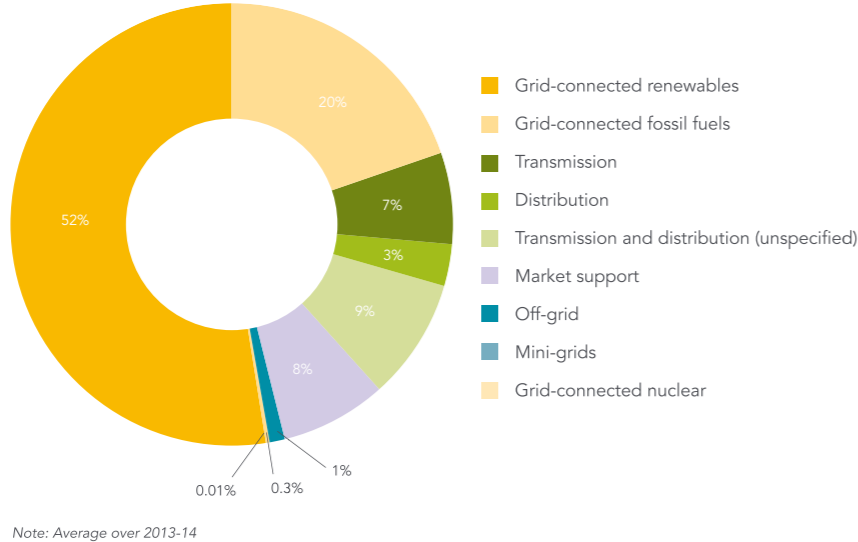
The country case studies generally found a higher share of finance going to transmission and distribution infrastructure (ranging between 35-50 percent of the total). This may reflect the fact that transmission and distribution projects are often smaller and more likely to be

¹ Sustainable Development Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all by 2030.

domestically financed than large generation projects and so can be more readily captured through country-level field work. Additionally, approximately 50 percent of trackable finance went to grid-connected generation in each of the three “deep-dive” countries (Bangladesh, Ethiopia and Kenya). This reflects the importance of expanding electricity generating capacity to ensure that electricity supply keeps pace with the demands of growing and industrializing economies.

Two-thirds of finance for grid-connected generation projects went to renewable energy, twice as much as for fossil fuels. Renewable energy here encompasses hydropower, geothermal, wind, solar and biomass. This suggests that most finance commitments tracked for electricity may be helping to meet climate goals and is consistent with the growing focus of developing countries on renewable energy development (REN21, 2015).

Figure ES1 - Share of finance for electricity by technology type across the high-impact countries



At least a third of finance commitments for electricity benefit new or improved access for residential consumers of electricity, with the balance going to expand electricity supply to industry and support growth in the wider economy.² Based on the “global approach,” about 30 percent of finance for electricity is estimated to benefit residential electricity access, averaging \$6 billion per year, with the rest benefiting commercial and industrial customers. This split is based on relative consumption shares of these two customer groups, as well as their usage of different segments in the electricity supply chain. Similar

conclusions emerged from the country case studies for Ethiopia and Bangladesh, with Kenya slightly higher at around 40 percent.

Most finance for residential electricity access supports a medium or high level of energy service. The World Bank’s Multi-Tier Framework (MTF) provides a way of estimating electricity access based on a spectrum of service levels, ranging from Tier 1—representing a basic lighting service for a few hours each day—to Tier 5—representing at least 23 hours-a-day of grid supply (Figure ES2). An approach has been piloted through this research to

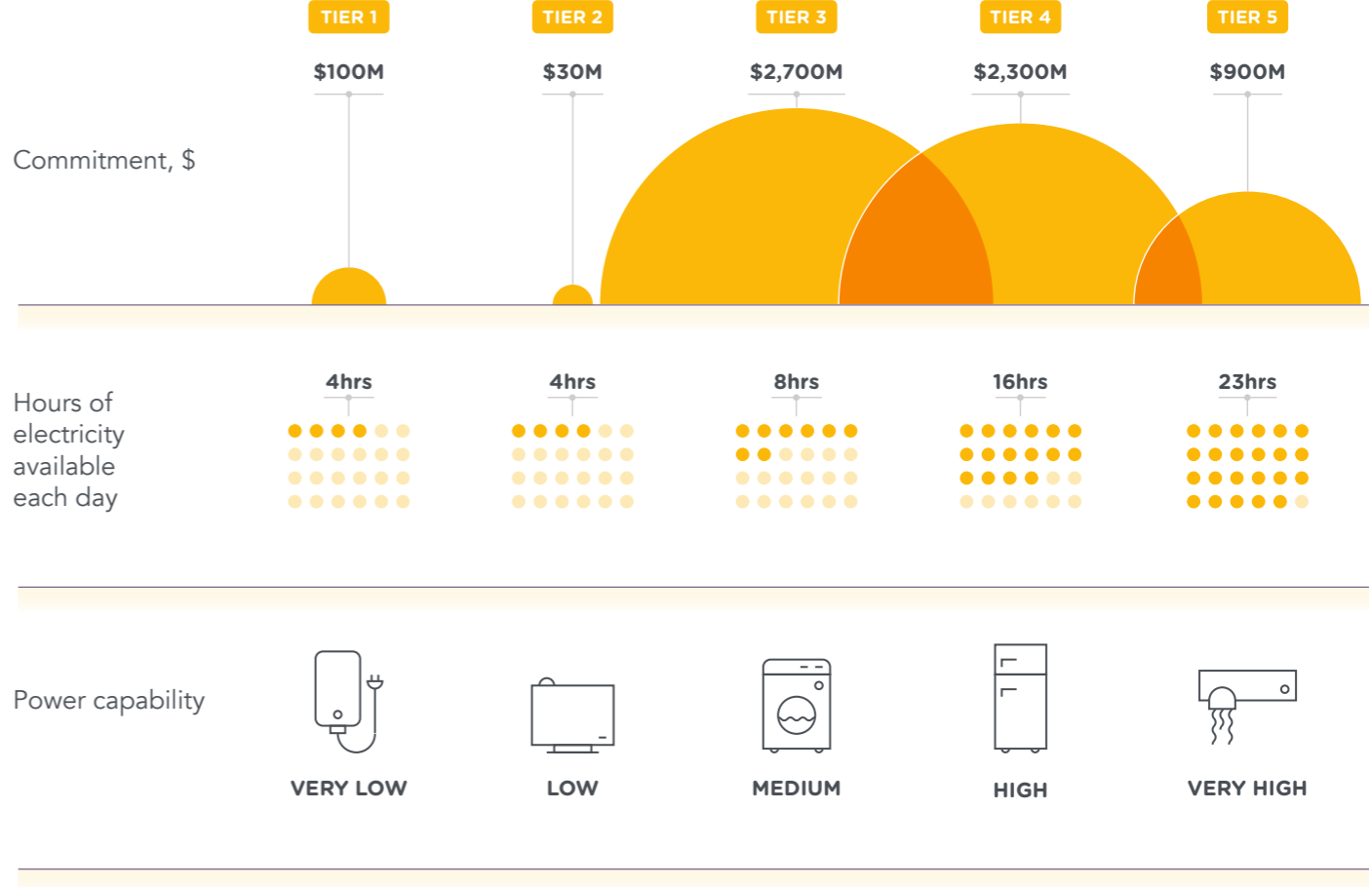
² Calculations on the share of investments benefiting residential and other customers differed slightly by methodology - see Annex 1 of the main report for discussion of the global and country approaches.

map finance commitments to Tiers of energy service. This illustrates that finance for residential electricity access primarily supports service provisions at Tiers 3-4. Finance for Tier 1 and Tier 2, while smaller, nonetheless represents an important step forward for quality of life that can bring electricity access relatively quickly and cost-effectively to rural communities.

Finance for electricity typically accounted for 0.25-2.0 percent of GDP, with substantial variation across coun-

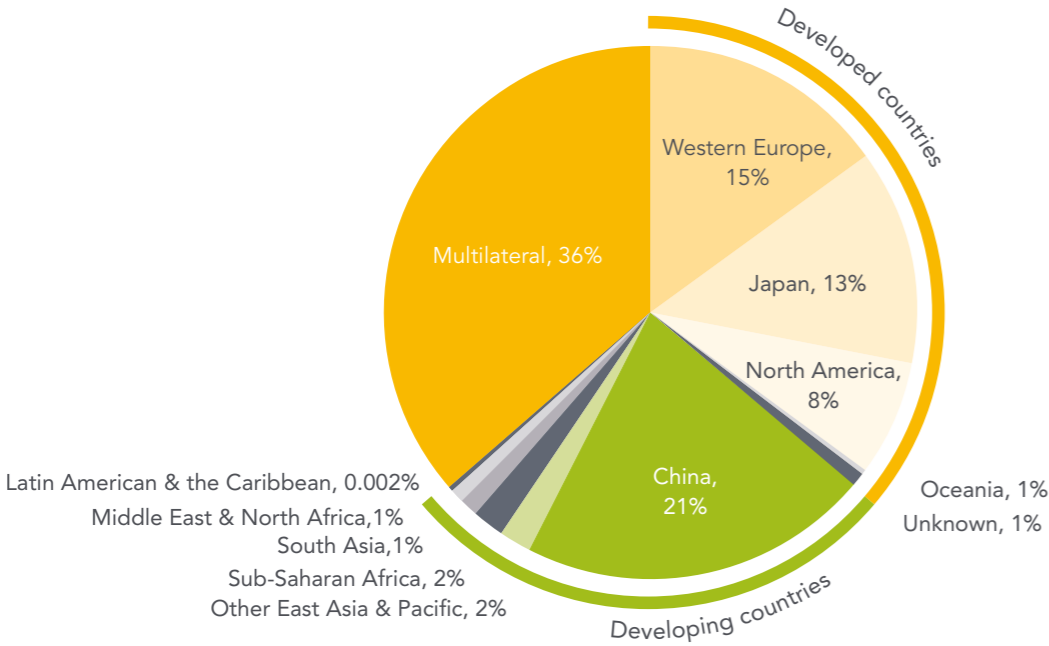
tries. Most countries reported finance commitments for electricity equivalent to 0.25-2.0 percent of their GDP and, in 12 of the 20 countries total finance for electricity accounted for less than one percent of GDP. Malawi and Afghanistan stand out for having finance for electricity accounting for almost eight percent and five percent of GDP respectively, which is consistent with large aid and other commitments to those countries. The country approach was typically able to capture larger volumes of finance than was possible using the global approach in the same

Figure ES2 - Finance commitments supporting residential electricity, by Tiers of energy access (average in 2013-14)



Source: Adapted from IIED (2016), based on IEA and WB 2015: <http://pubs.iied.org/pdfs/16623IIED.pdf>

Figure ES3 - Sources of international finance for electricity flowing to the 20 high-impact countries



Note: Average over 2013-14. The figure includes public and private sector sources.

countries. In the country case studies, additional domestic finance commitments were captured, boosting the GDP share to around 2 percent of GDP for Ethiopia and Kenya and 3 percent of GDP for Bangladesh.

International investment has been the largest source of finance for electricity. In aggregate, across the 20 high-impact countries, international finance represented an annual average of \$11.7 billion per year, or just over half of commitments captured. This comes almost entirely from public sector institutions, though the sources and terms vary across countries. In Kenya, for example, half of the financing flows originate from multilateral sources, chiefly the World Bank, while in Ethiopia more than half of the financing comes from bilateral sources, largely as non-concessional finance from China. China was also the largest bilateral donor across the 20 high-impact countries (Figure ES3).

A closer look reveals that national governments can

also be a significant source of finance for electricity by drawing from their own budgets. In Ethiopia and Kenya, around 20 to 25 percent of finance for electricity is domestically sourced. By contrast, in Bangladesh around 45 percent of finance for electricity comes from domestic sources: about two-thirds from the central government budget and one-third from internal cash generation (or balance-sheet financing) from public utilities. The contribution of international capital is correspondingly smaller. Repeating detailed country case studies across the 20 high-impact countries would likely reveal a higher level of domestic finance in both absolute and proportional terms than could be captured under the aggregated global approach.

International private finance constituted a small proportion of total finance for electricity tracked, averaging 6 percent of total commitments—a little over \$1.2 billion per year—while there is relatively little data on domestic private finance. It proved difficult to

obtain data from domestic private sector institutions on their domestic financing for electricity, whether they were commercial banks funding public utilities or small-scale companies engaged in decentralized energy services. For several of the 20 high-impact countries, zero domestic private finance was tracked. The two notable exceptions were India and the Philippines where there were much higher levels of private sector domestic finance tracked (around 40 percent total country flows in the case of India and almost 75 percent in the Philippines). However, it is difficult to say whether these countries are genuine outliers or simply reflect varying levels of data across the 20 high-impact countries.

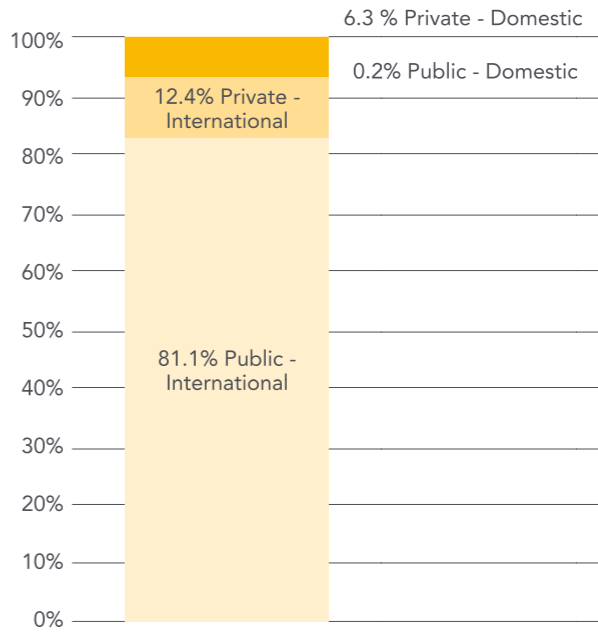
The analysis predominantly focuses on 2013 and 2014 and may not reflect more recent market trends. For example, the market for off-grid solar power has accelerated significantly since the beginning of 2014. Although the entire sector market remains small—having attracted

globally \$511 million of investment from 2008 to 2015 (BNEF, Lighting Global and GOGLA, 2016)—companies providing pay-as-you-go solar systems alone raised \$223 million of funds in 2016 (BNEF, 2017).

COOKING FINDINGS

Total finance commitments for residential clean cooking were estimated to average \$32 million over 2013-14 for the 20 high-impact countries. International public funding was the largest source representing 80 percent of the overall flows in the two-year period. While public finance accounted for much of the finance for clean cooking, commercial lending to small enterprises is also beginning to flow (Figure ES4). In Kenya, for example, commercial debt was also provided to distributed-energy companies providing clean cooking services and about half of the finance was channeled to non-governmental organizations.

Figure ES4 - Sources of finance for clean cooking



Note: Average over 2013-14

In most countries, finance for cooking targeted two main technologies: biogas digesters and biomass cookstoves. Due to the small sample of projects and the large influence of outliers, it is hard to draw firm conclusions about the technological preferences of cooking financiers. Nevertheless, barring one large City Gas Distribution Project in India, funds were mainly allocated to biogas digesters, averaging \$17 million of finance annually, followed by biomass cookstoves, averaging \$5.9 million a year.

The majority of financial commitments made in clean and improved cooking solutions flowed to the residential sector. Excluding the City Gas Distribution Project, which benefited both the residential and non-residential sectors, over 95 percent of tracked commitments increased residential access to clean cooking solutions, mostly through biomass stoves. It is estimated that about 70 percent of cooking finance provided a medium level of access (Tier 3), while most of the remainder provided a more basic level of access (Tier 1) through improved biomass stoves.

CONCLUSIONS

Investment in electricity and clean cooking access is falling far short of the levels required. Clean cooking, in particular, suffers from extremely limited investment. Funding for grid-connected electricity is substantially higher but still falls short of the levels needed to meet universal access to electricity by 2030. While grid-connected technologies are—and will remain—indispensable for electricity access, decentralized approaches to electricity, which are particularly relevant to remote rural populations, captured barely one percent of the overall funding and will also need to increase substantially.

The research has highlighted that better data tracking is essential to improve the coverage and granularity of financial information in some areas. Also, pilot methodologies for allocating finance commitments across different types of energy assets and different Tiers of energy service can be more tailored to the local context as baseline access surveys from the MTF become available. Nevertheless, this research demonstrates the value of combining the global approach with a more extended set of detailed country case studies in a future iteration of this work, to yield additional information on domestic financing, an important channel of finance for energy.



ABBREVIATIONS

\$	United States Dollars
AfDB	African Development Bank
BNEF	Bloomberg New Energy Finance
CPI	Climate Policy Initiative
GACC	Global Alliance for Clean Cookstoves
GLPGP	Global LPG Partnership
GOGLA	Global Off-Grid Lighting Association
LPG	Liquefied Petroleum gas
MFIs	Multilateral Financial Institutions
MTF	Multi-Tier Framework
NGO	Non-governmental organization
OECD	Organisation for Economic Cooperation and Development
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All
SHS	Solar home system
Solar PV	Solar photovoltaic



GLOSSARY

Asset: a resource with economic value owned by an individual, company or country; for example, an onshore wind farm.

Centralized electricity solutions: extensions of a country's electricity grid and/or power sources connected to a country's existing electricity grid.

Clean and improved fuels and technologies for cooking: The report tracks financial commitments for: advanced biomass stoves and fuel infrastructure, alcohol stoves and fuel infrastructure, biogas digesters, electric stoves, improved biomass stoves, LPG stoves and fuel infrastructure, natural gas stoves and fuel infrastructure, and solar cookers. These are referred to as "clean cooking solutions" or "clean fuels and technologies for cooking" throughout the report.

Finance for clean cooking: the portion of energy finance commitments supporting clean and improved fuels and technologies for cooking.

Commitments: a firm pledge to provide funds to a specific investment project with the expectation that project will go ahead.

Concessional finance: finance where the investing or lending party provides financing at rates and/or terms better than or below standard market rates/terms. Often concessional finance is provided in exchange for non-financial goals such as promoting low-carbon investment.

Decentralized electricity solutions: provision of electricity that does not take place through a country's centralized grid. Examples of decentralized electricity solutions

would include off-grid solar home systems and local mini-grids not connected to the main electricity grid.

Domestic finance: finance where the funding institution is primarily based in the country where the project is being developed or constructed.

Disbursements: funds that are actually transferred to a project after a commitment is made. For example, when a funder commits to invest in a project in 2014, but the project can only commence construction in 2015, funds transferred to the projects' builders and consultants in 2015 are classed as disbursements.

Energy access: the ability of the end user to utilize energy supplies; used here to cover both access to electricity and to clean fuels and technologies for cooking.

Finance for energy: investment commitments for specific technologies, assets and market support activities within the energy sector, regardless of the ultimate end user of the energy supply.

Energy infrastructure: any assets used in the generation or transmission of electricity, transportation of clean cooking fuels or cooking itself.

Finance for electricity: the portion of energy finance commitments supporting all grid-connected plants, electricity transmission and distribution infrastructure, and mini-grid and off-grid solutions.

Financial value: the value of something in US Dollar terms at the time of measurement.

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 the 2015 Global Tracking Framework (IEA and the World Bank, 2015). For electricity access, the countries are: Afghanistan, Angola, Bangladesh, Burkina Faso, Congo (DR), Ethiopia, India, Kenya, Korea (DPR), Madagascar, Malawi, Mozambique, Myanmar, Niger, Nigeria, the Philippines, Sudan, Tanzania, Uganda and Yemen. For clean cooking access, the countries are: Afghanistan, Bangladesh, China, Congo (DR), Ethiopia, India, Indonesia, Kenya, Korea (DPR), Madagascar, Mozambique, Myanmar, Nepal, Nigeria, Pakistan, the Philippines, Sudan, Tanzania, Uganda and Vietnam. More details about the high-impact countries can be found in Annex 1 of the main report.

Finance for residential clean cooking access: the estimated portion of finance for clean cooking for which the residential sector is the ultimate end user, i.e., finance that can be considered as increasing residential access to clean and improved fuels and technologies for cooking.

Finance for residential electricity access: the estimated portion of finance for electricity where the residential sector is the ultimate end user, i.e., finance that can be considered as increasing residential access to electricity.

International finance: finance where the funding institution is primarily based outside the country where the project is being developed or constructed.

Multi-Tier Framework (MTF): measures the level of energy access provided by energy finance to residential consumers. Rather than using binary measures of energy access (e.g., having or not having a household electrical connection) that do not consider the quality, regularity, or affordability of service, the MTF instead recognizes that access to electricity is a continuum. Finance is therefore allocated to five "Tiers," from Tier 0 ("no access") to Tier 5 ("very high level of access"), based on the Multi-Tier Framework (MTF) developed by the World Bank (Bhatia and Angelou, 2015) and supported by SEforALL. The MTF is explained in more detail in Chapter 1 and Annex 1 of the main report.

Non-concessional finance: finance provided on market terms and rates.

Public finance/private finance: whether a finance flow is classed as public or private is determined by who is undertaking a project. In alignment with the OECD (2017), finance qualifies as public if carried out by central, state or local governments and their agencies at their own risk and responsibility.

Residential consumers: all consumers in a country, aside from any business or government consumers. The intention is to broadly capture residential consumption, discounting business consumption where businesses are run from households, where possible.



ANNEX A

FINANCING COMMITMENTS FOR ENERGY ACCESS IN HIGH-IMPACT COUNTRIES

Figure A1 - Tracked finance for electricity in high-impact countries (\$, billion)

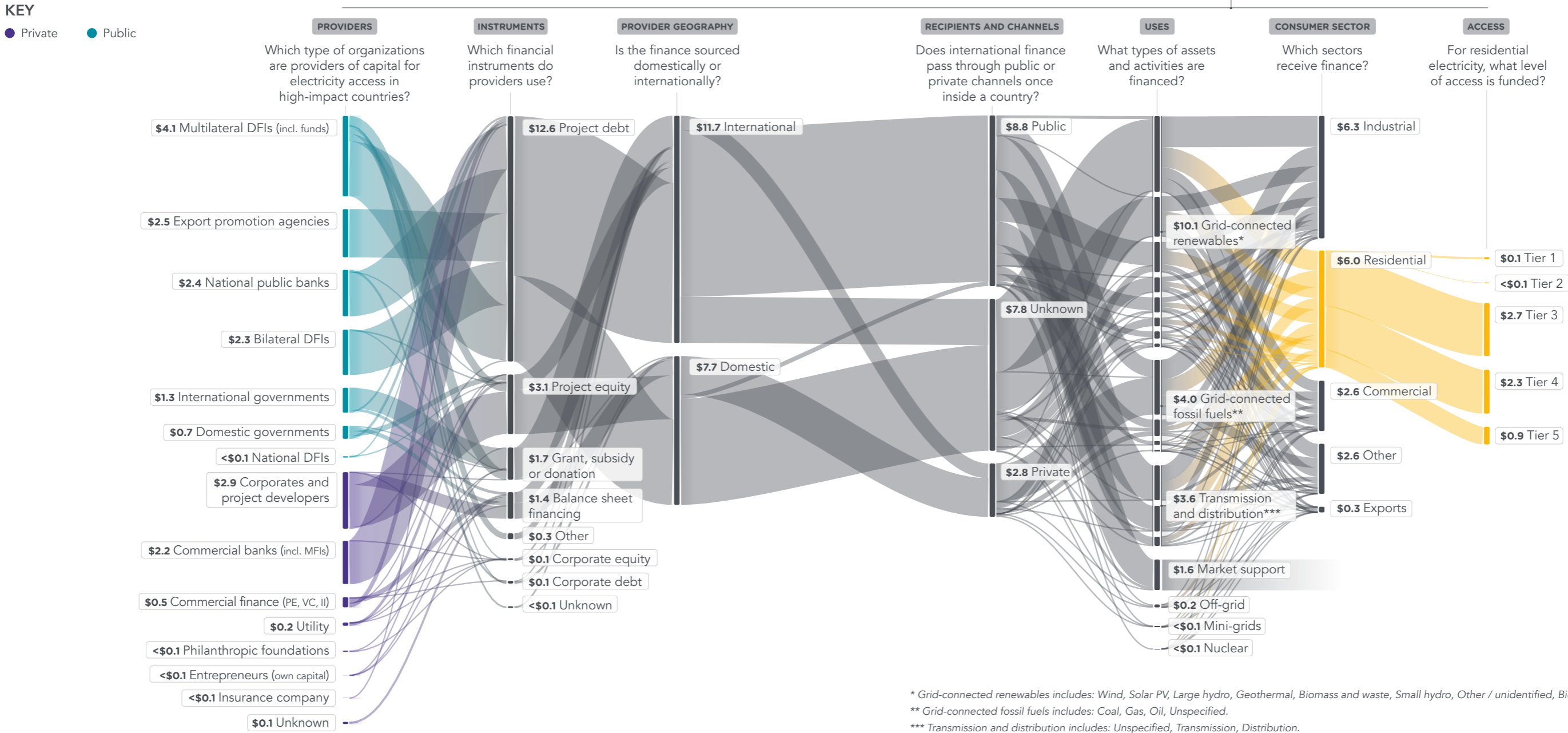
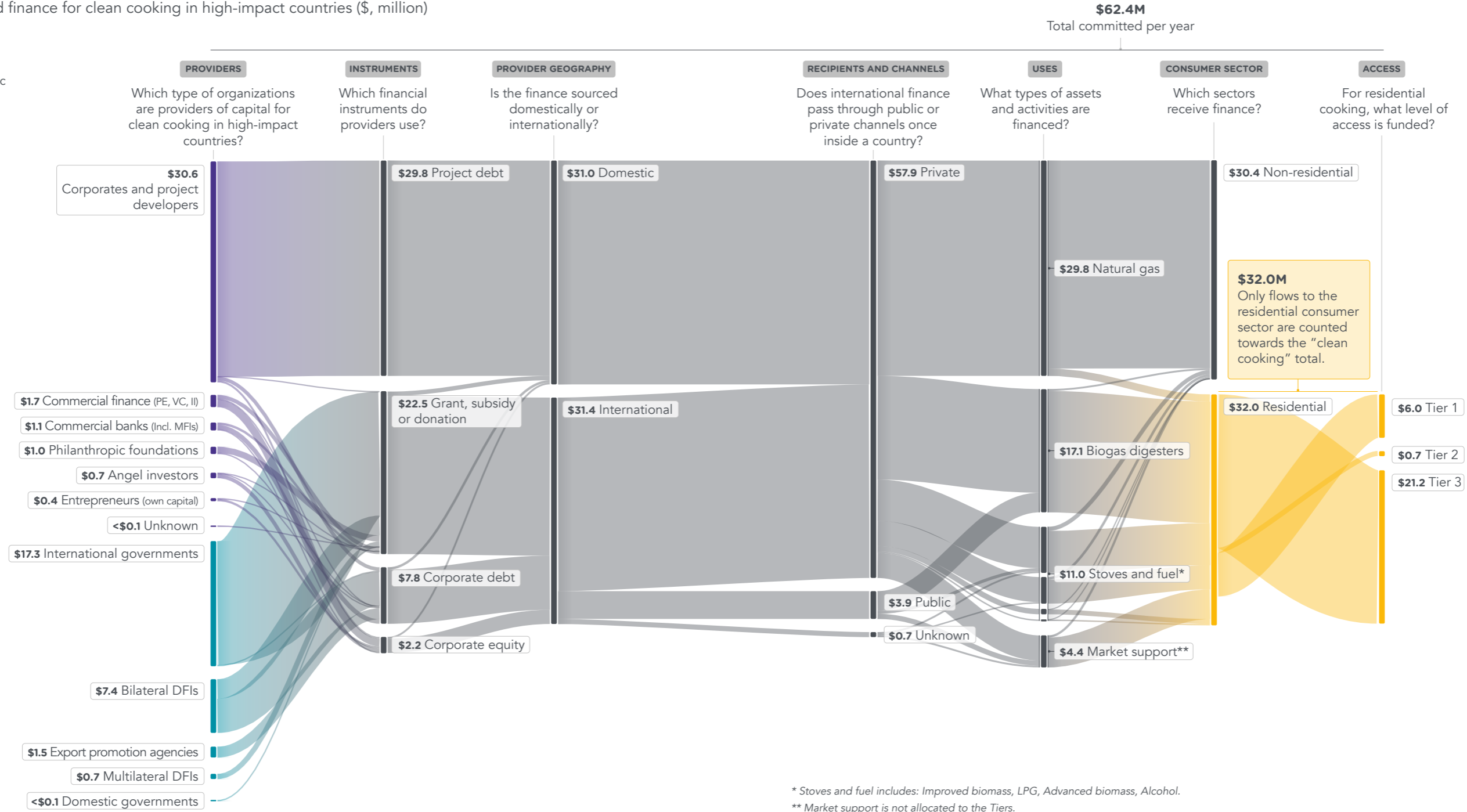


Figure A2 - Tracked finance for clean cooking in high-impact countries (\$, million)



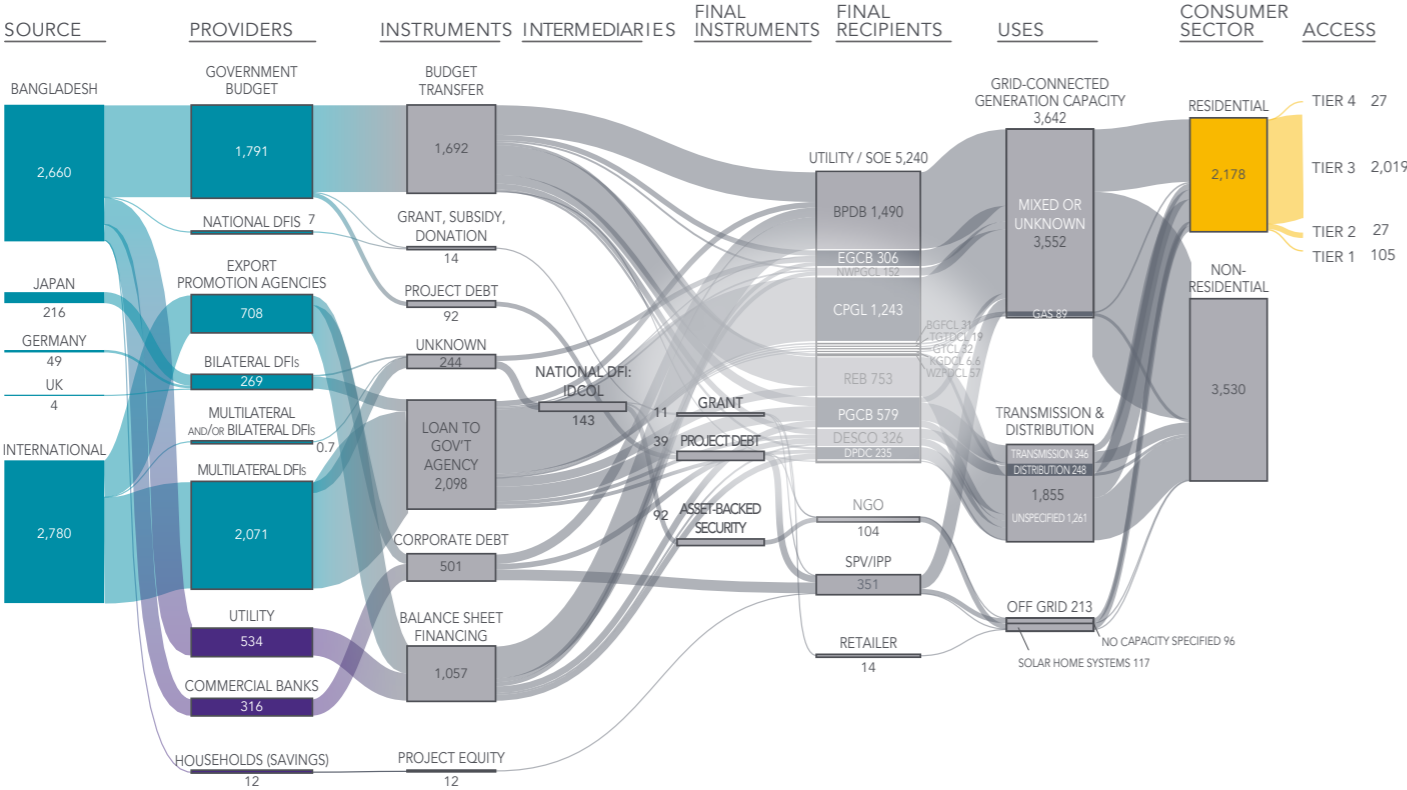


ANNEX B

FINANCING COMMITMENTS FOR ENERGY ACCESS IN BANGLADESH, ETHIOPIA AND KENYA

Figure B1 - Electricity finance flows in Bangladesh 2013-15 (\$, million)

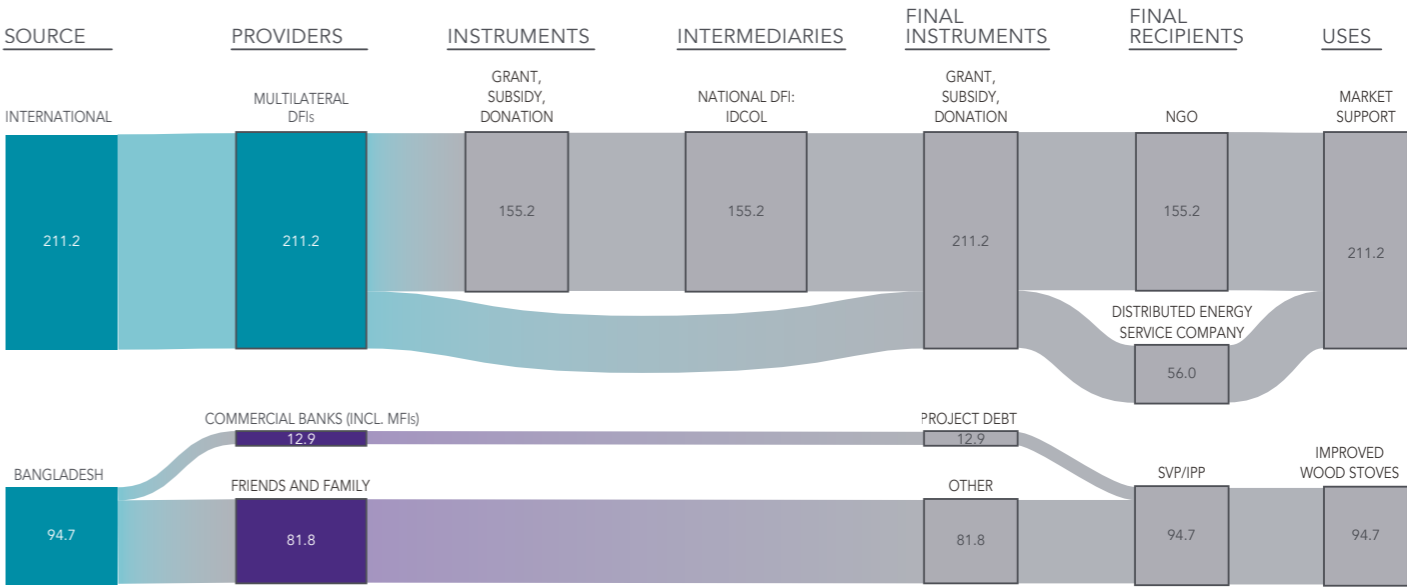
Average finance flows for electricity in Bangladesh from 2013-15: \$5,709.3 million per year
KEY: PUBLIC PRIVATE



Note: Totals are an average of commitments made between 2013 and 2015.

Figure B2 - Clean cooking finance flows in Bangladesh 2013-15 (\$, thousand)

Average finance flows for clean cooking in Bangladesh from 2013-15: \$305.9 thousand per year
KEY: PUBLIC PRIVATE

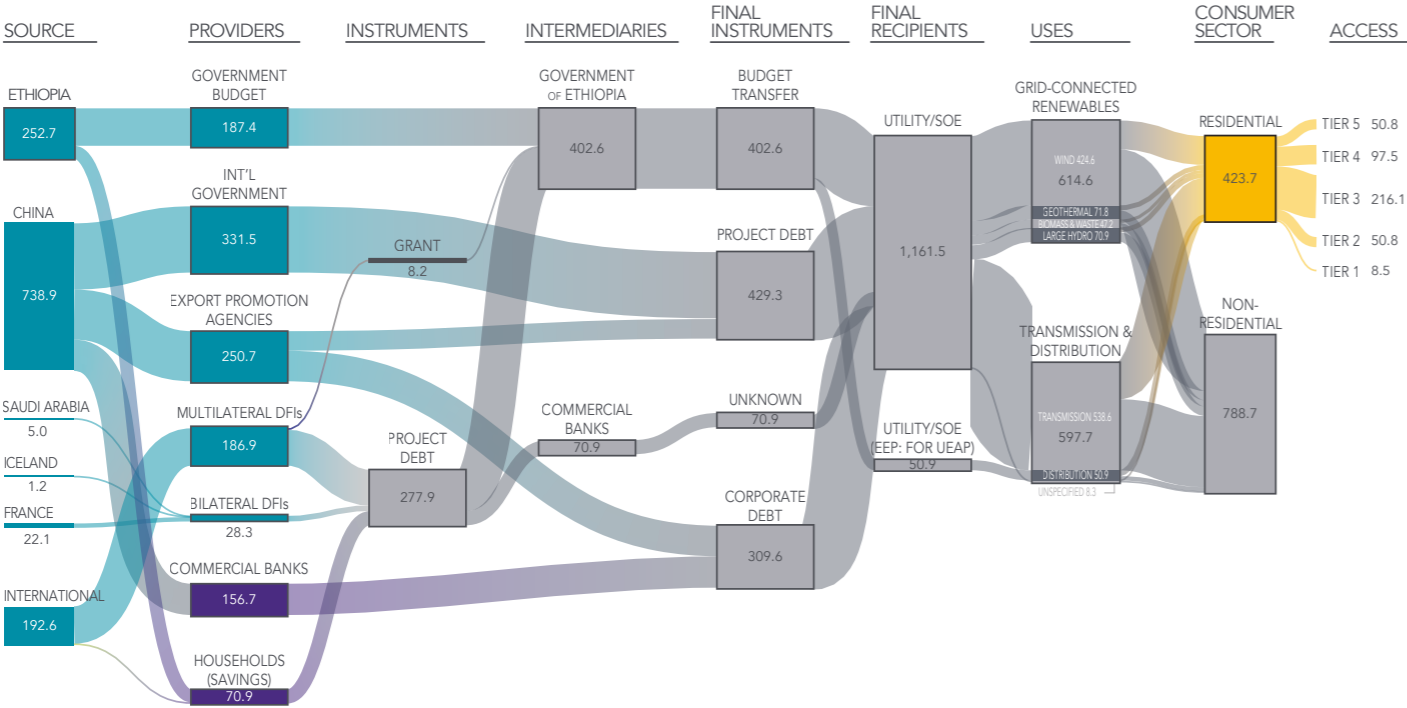


Note: Totals are an average of commitments made between 2013 and 2015. Due to data limitations, this visualization depicts average disbursements and Cost of Goods Sold (COGS) instead of commitments over the time frame.

Figure B3 - Electricity finance flows in Ethiopia 2013-15 (\$, million)

Average finance flows for electricity in Ethiopia from 2013-15: \$1,212.4 million per year

KEY: ■ PUBLIC ■ PRIVATE

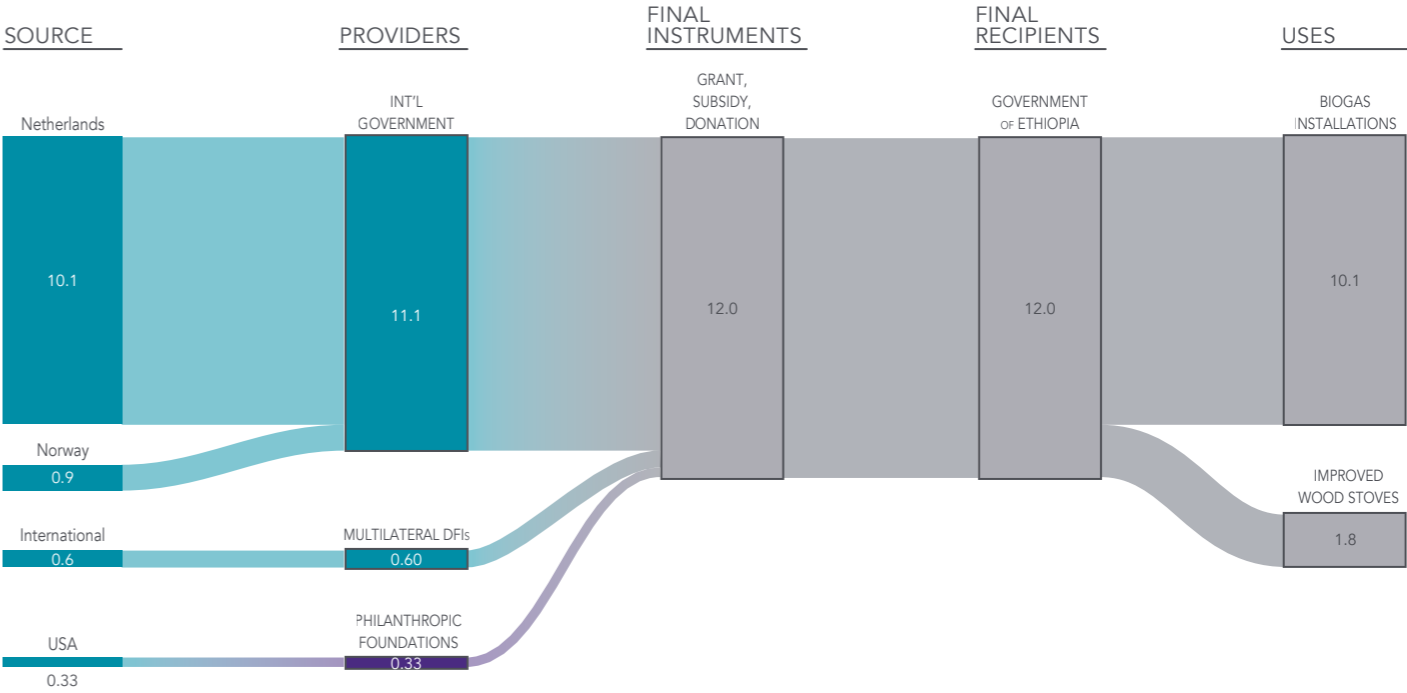


Note: Totals are an average of commitments made between 2013 and 2015.

Figure B4 - Clean cooking finance flows in Ethiopia 2013-15 (\$, million)

Average finance flows for clean cooking in Ethiopia from 2013-15: \$12.0 million per year

KEY: ■ PUBLIC ■ PRIVATE

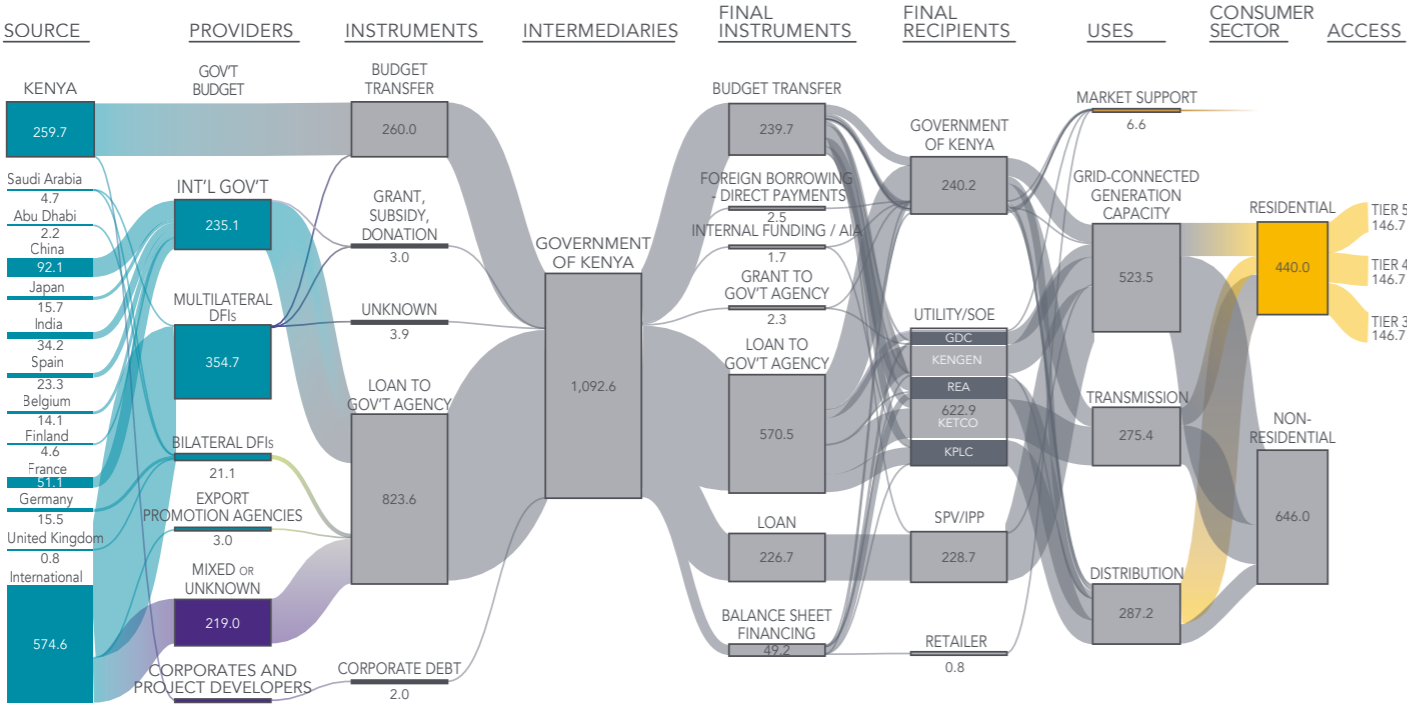


Note: Totals are an average of commitments made between 2013 and 2015.

Figure B5 - Electricity finance flows in Kenya 2013-15 (\$, million)

Average finance flows for electricity in Kenya from 2013-15: \$1,092.6 million per year

KEY: PUBLIC PRIVATE

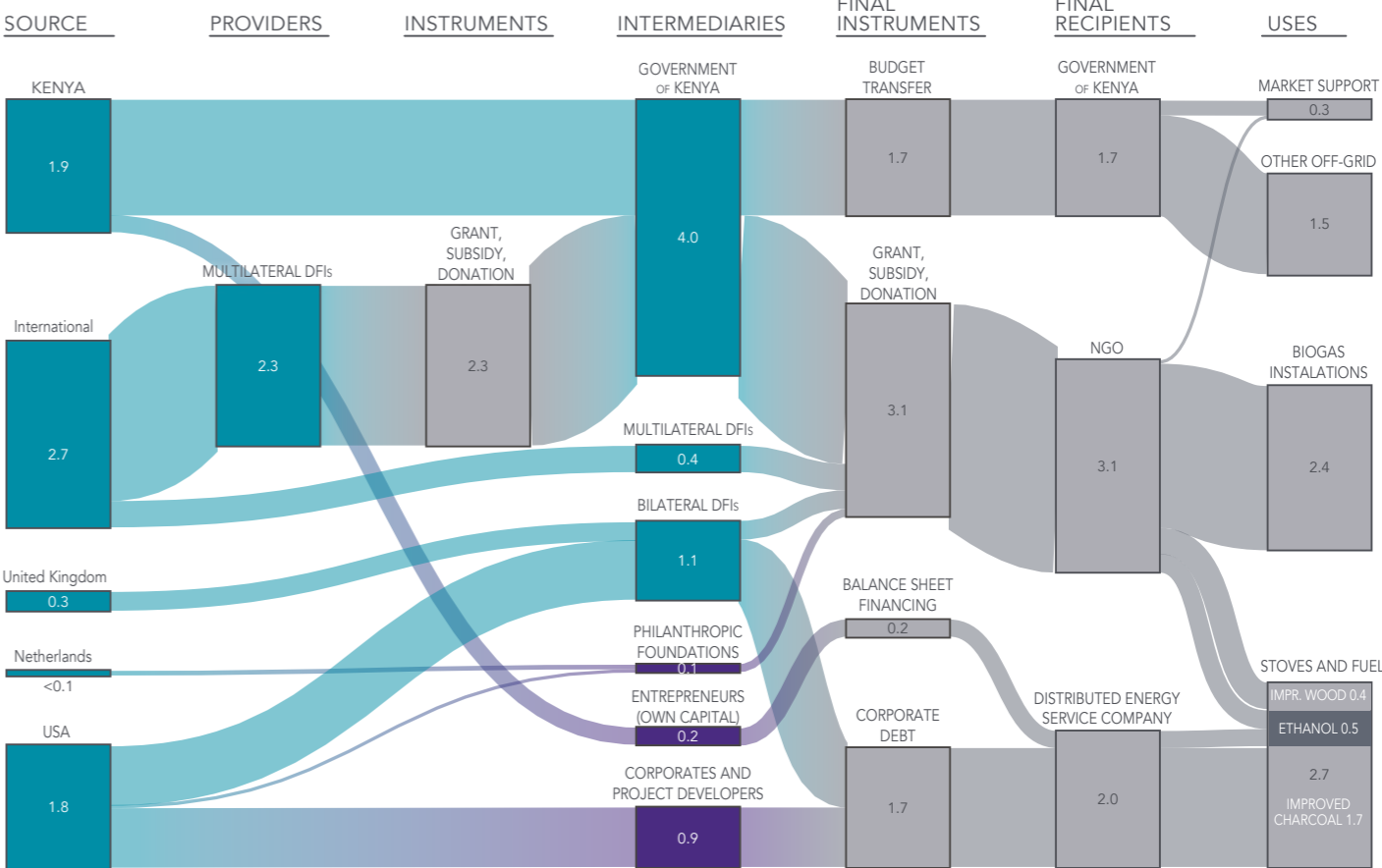


Note: Totals are an average of commitments made between 2013 and 2015.

Figure B6 - Clean cooking finance flows in Kenya 2013-15 (\$, million)

Average of finance flows for clean cooking in Kenya from 2013-15: \$6.8 million per year

KEY: PUBLIC PRIVATE



Note: Totals are an average of commitments made between 2013 and 2015.



ANNEX C

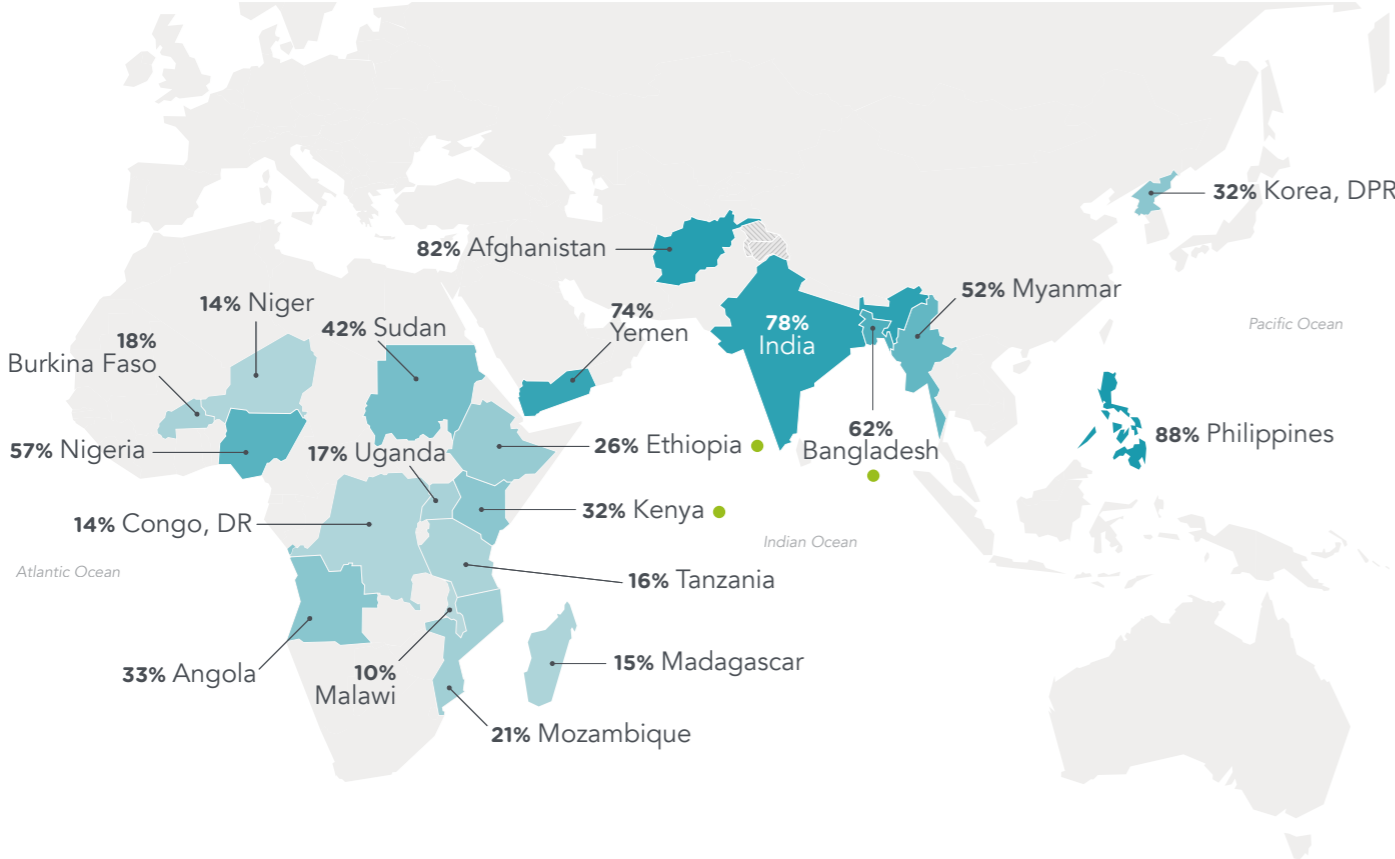
ACCESS TO MODERN ENERGY SERVICES IN HIGH-IMPACT COUNTRIES

Figure C1 - Access to modern energy services in high-impact countries

PERCENTAGE OF POPULATION WITH ACCESS TO:



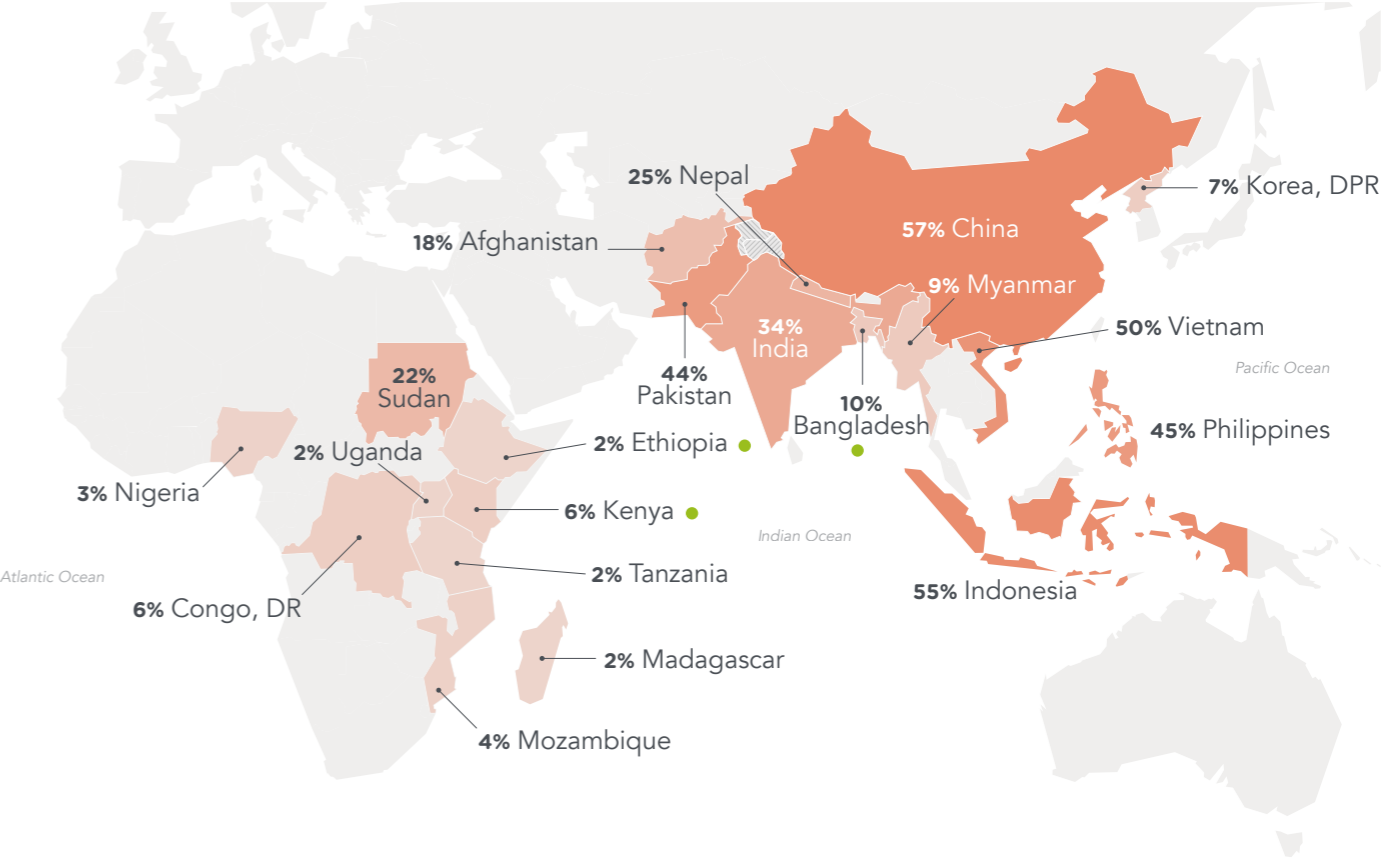
● Deep-dive analysis available



PERCENTAGE OF POPULATION WITH ACCESS TO:



● Deep-dive analysis available



Source: Global Tracking Framework (IEA and World Bank, 2017)
 Notes: 1. The dotted line represents approximately the Line of Control in Jammu and Kashmir by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. 2. This map was produced by SEforALL. It is based on the UN Map of the World, which can be found here: <http://www.un.org/Depts/Cartographic/map/profile/world.pdf>. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of SEforALL, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries. 3. Data on the percentage of the population with access is averaged over 2013 and 2014.



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