

CHAPTER THREE

ELECTRICITY ACCESS

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3. ELECTRICITY ACCESS

KEY MESSAGES

- The global picture for electricity access policies has been steadily improving. In 2010, the majority of countries lacked supportive policies and regulations for expanding electricity access (red zone), and none was in the green zone. As of 2017, a quarter of access-deficit countries adopted comprehensive policies and regulations (green zone), and another half has at least some key elements of supportive policy and regulatory framework (yellow zone).
- Significant progress was registered in all four access-deficit regions, including Sub-Saharan Africa. Nine Sub-Saharan African countries are among the top performers (green zone). However, the progress across countries is uneven. It is in particular concerning that the least electrified countries and fragile/conflict-affected countries have registered least progress.
- National electrification planning has been the main focus among countries, demonstrating that it is an essential first step in building an enabling framework for electricity access expansion. The quality and inclusiveness of these plans, however, vary.
- Access deficit countries are exploring new off-grid electrification opportunities, which have opened up in recent years thanks to various renewable energy and battery storage technologies and business model innovations. The policy and regulatory framework for off-grid access solutions, such as mini grids and standalone systems, is now scored higher than the framework for grid electrification.
- Further improvements in the grid expansion framework are needed, in particular in the areas of consumer connection financing, performance standards, and monitoring systems.
- Most access-deficit countries are still facing challenges of providing affordable electricity with the need to keep the utilities transparent and financially robust. A few countries, however, have registered positive improvements in both areas.
- As countries incorporate the right policies and regulations on paper, it is imperative to ensure that these policies and regulations are properly implemented, monitored and regularly enforced.

POLICY DIMENSIONS FOR ELECTRICITY ACCESS

The 2018 edition of the RISE electricity access pillar continues with the eight indicators that were used in the 2016 edition of RISE, but with several changes to the questions within each indicator. These eight indicators include: 1. Electrification planning; 2. Scope of electrification planning; 3. Grid electrification framework; 4. Framework for mini grids; 5. Framework for standalone systems; 6. Consumer affordability; 7. Utility transparency and monitoring; and 8. Utility creditworthiness.

Based on discussions with sector experts from international organizations, development banks, academia, and private sector stakeholders, the eight indicators are the recommended policy dimensions to consider when a country seeks to accelerate its electrification. These indicators range from national electrification planning, to policy framework for various electrification technologies, and policies that enable consumer affordability of electricity and evaluate utility performance.

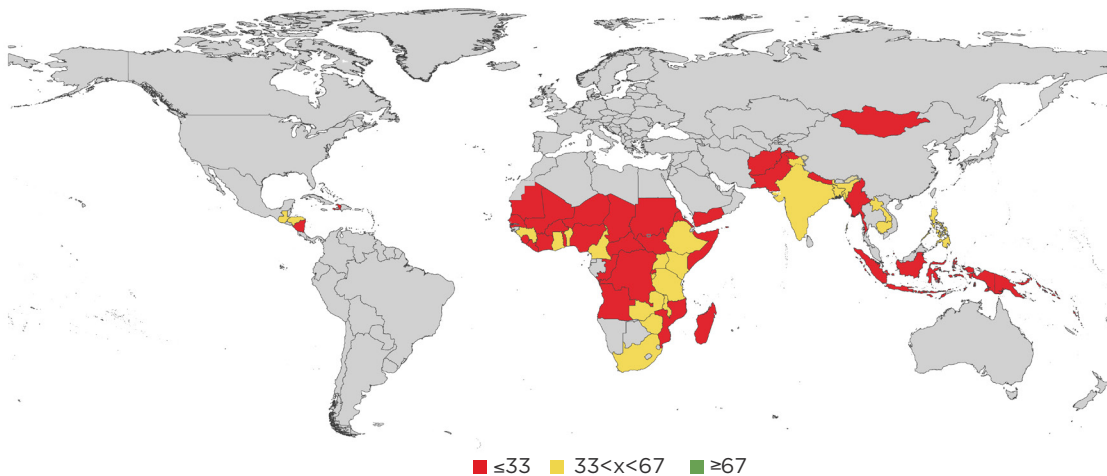
The path towards developing an enabling policy framework for electricity access is different for every country. For example, countries could follow the traditional approach, which is to develop, approve and implement a national electrification plan before developing framework for various technologies. However, with the rapid development of off-grid technologies in recent years, many countries prefer development of policies that enable them to take advantage of adopting mini grids and standalone systems. Indeed, one of the opportunities for researchers and users of RISE data is to assess which policies are the most effective in moving the needle on electricity access.

GLOBAL OVERVIEW OF ELECTRICITY ACCESS POLICY FRAMEWORK

Overall, access-deficit countries have made good progress on electricity access policies since 2010, but significant room for improvement remains in many policy and regulatory aspects. Between 2010 and 2017, there was consistent improvement in electricity policy and regulations in all access-deficit countries assessed by RISE (*Figure 3.3*).⁹ Overall, three-quarters of access-deficit countries es-

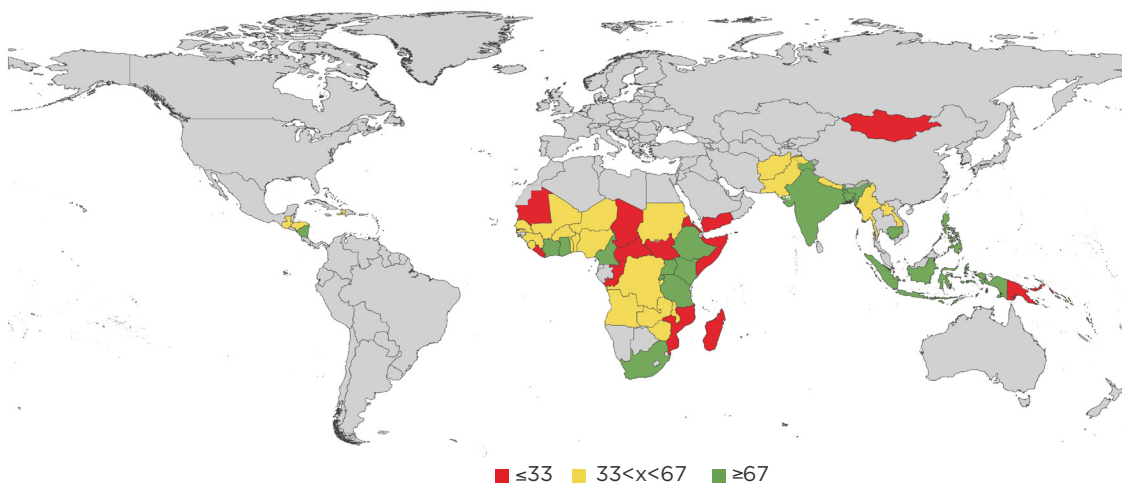
tablished some key policy or regulation required to expand access to electricity (green and yellow zone). More than one-third of the countries, mainly located in Sub-Saharan Africa, have initiated the transition from having an insufficient regulatory framework for electricity access in 2010 (*Figure 3.1*) to the adoption of at least some necessary policy attributes by 2017, with more than a quarter of the countries now having a comprehensive policy and regulatory framework (green zone) (*Figure 3.2*). The positive trends in policy and regulatory adoption have been accompanied by the increasing pace of electrification in recent years,

FIGURE 3.1 MAP: RISE ELECTRICITY ACCESS SCORES BY COUNTRY, 2010



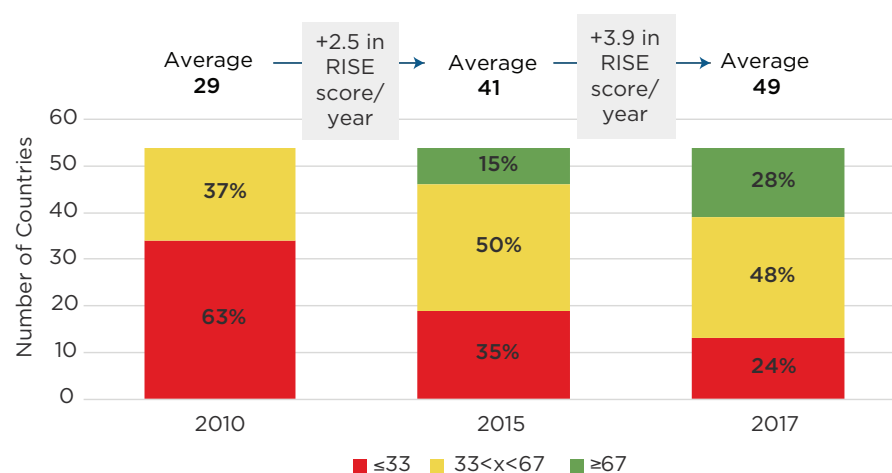
Source: World Bank RISE 2018

FIGURE 3.2 MAP: RISE ELECTRICITY ACCESS SCORES BY COUNTRY, 2017



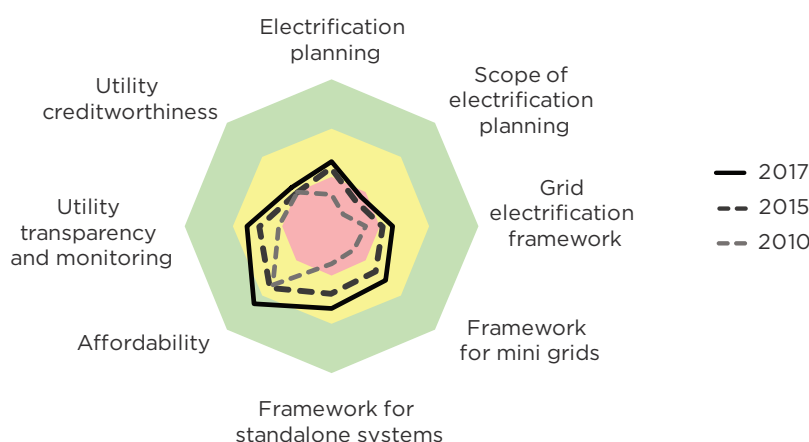
Source: World Bank RISE 2018

FIGURE 3.3 DISTRIBUTION OF RISE ENERGY ACCESS SCORES, 2010, 2015, AND 2017



Source: World Bank RISE 2018

FIGURE 3.4 GLOBAL PROGRESS ON ACCESS TO ELECTRICITY BY INDICATOR, 2010, 2015 AND 2017



Source: World Bank RISE 2018

as highlighted in the report, Tracking SDG7: The Energy Progress Report 2018¹⁰ (referred to hereafter as the *Tracking SDG 7* report).

While this progress is promising, it is also quite heterogeneous, with RISE scores ranging from 81 in Bangladesh to less than 10 in Somalia (Figure 3.2). Globally, more than a quarter of access-deficit countries score in the green zone, while the vast majority of countries have made moderate efforts with mixed outcomes.

The most well-established policy and regulatory measures are those covering electrifi-

cation planning, followed by the frameworks for mini grids and standalone systems and utility transparency (Figure 3.4). Planning is crucial to meet the challenge of access to electricity but a plan, in itself, is not sufficient. Plans need to fit country contexts and ensure commercial viability of distribution networks. They need to cover the specific needs of the population lacking electricity. Policymakers should target both on-grid and off-grid solutions (such as mini grids and standalone home systems) in a systematic way that considers the needs of urban and rural populations. Further, the financial sustainability of power com-

panies is important for the success of energy access projects. The typical process is to have part of the capital costs of rural electrification subsidized by the government or international donors, leaving at least part of the capital costs and all the operating costs to be paid by consumers. Thus, making electricity affordable to consumers after all the subsidies are taken into consideration is vital for ensuring a flow of revenue commensurate with the cost of providing service.

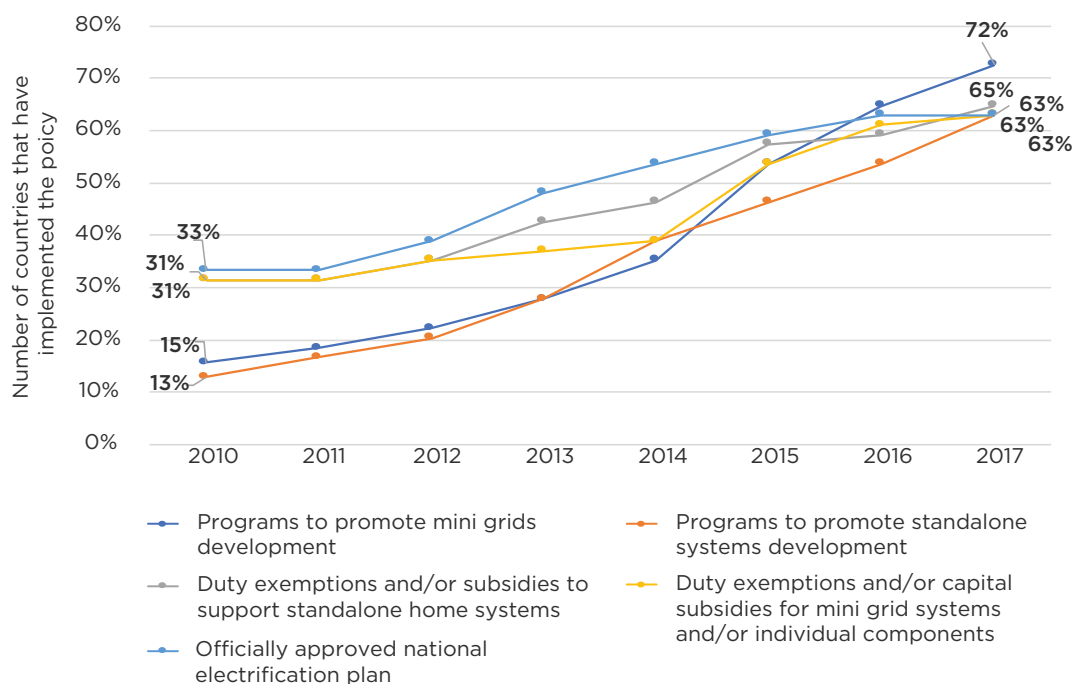
Programs to promote mini grids and develop standalone systems have progressed the most since 2010, with more than half of the access-deficit countries adopting them. Along with the establishment of these programs, financial support for them – either duty exemptions or subsidies – were common in two-thirds of countries (*Figure 3.5*). Policies that focus on making subsistence electricity

affordable emerged as the most widespread as of 2017, while progress on the creditworthiness of utilities has come to a standstill. Frameworks for electricity access have gained only intermediate maturity, leaving room for further improvement.

REGIONAL AND COUNTRY OVERVIEW OF ELECTRICITY ACCESS POLICY

From a regional perspective, access-deficit countries in South Asia score highest, in particular thanks to policy frameworks for standalone systems, utility transparency, monitoring, and creditworthiness. However, over the last seven years, the East Asia & Pacific region has been the fastest mover among all the regions in developing policy frameworks for electrification, with emphasis on frameworks

FIGURE 3.5 PERCENTAGE OF COUNTRIES WITH TOP FIVE FASTEST-MOVING POLICIES FOR ELECTRICITY ACCESS, 2010-2017

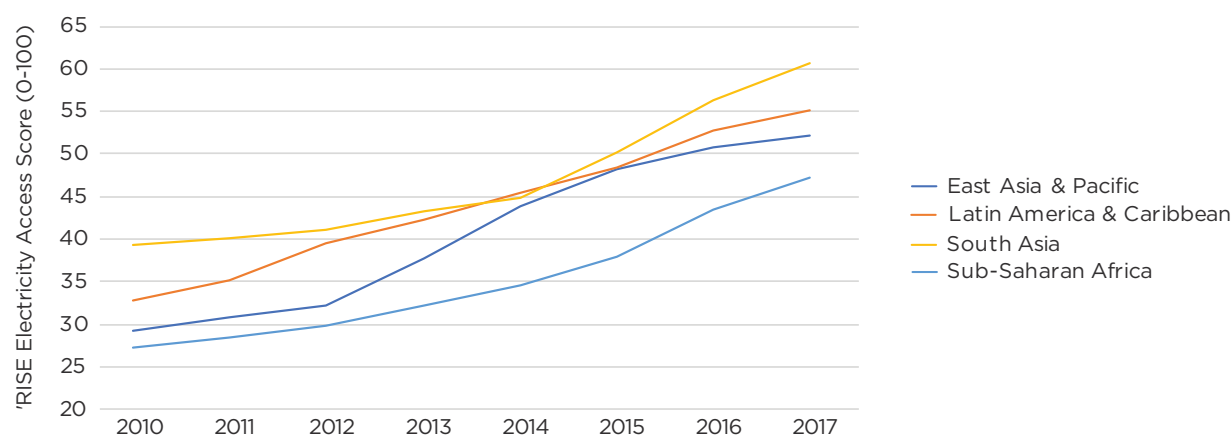


Source: World Bank RISE 2018

for grid extension as well as off-grid systems. Grid electrification policies have improved in all countries in East Asia & Pacific, with Cambodia, Indonesia and Philippines leading the way. These countries have adopted the three key components of grid electrification – i) dedicated funding line, ii) service level standards and, iii) monitoring systems to enforce them.

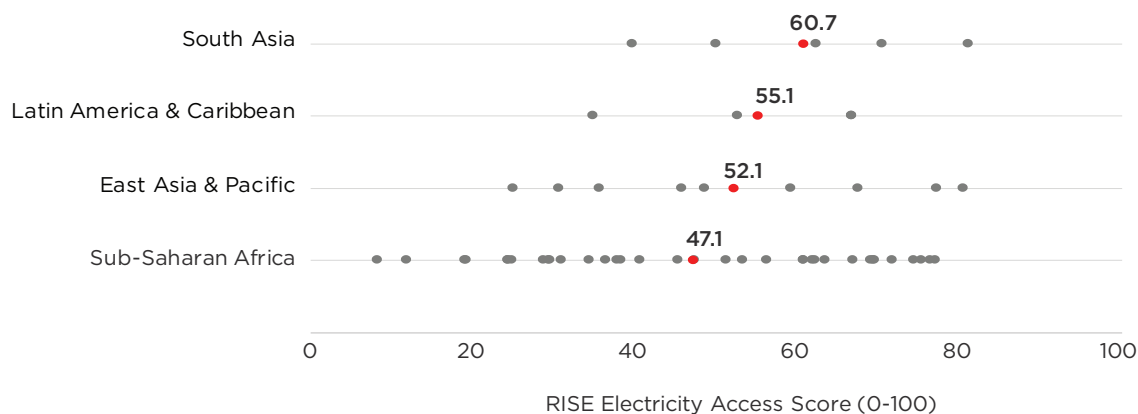
Sub-Saharan African countries have also registered strong progress, especially since 2015, in particular on policies and regulations for mini grids and standalone systems (*Figures 3.6 and 3.7*). This effort is mainly driven by Ethiopia, which has the most comprehensive energy-access-enabling environment on the continent, followed by Tanzania, Kenya, and South Africa. Ethiopia has one of the most advanced and comprehensive National Elec-

FIGURE 3.6 EVOLUTION OF RISE ELECTRICITY ACCESS SCORE BY REGION, 2010-2017



Source: World Bank RISE 2018

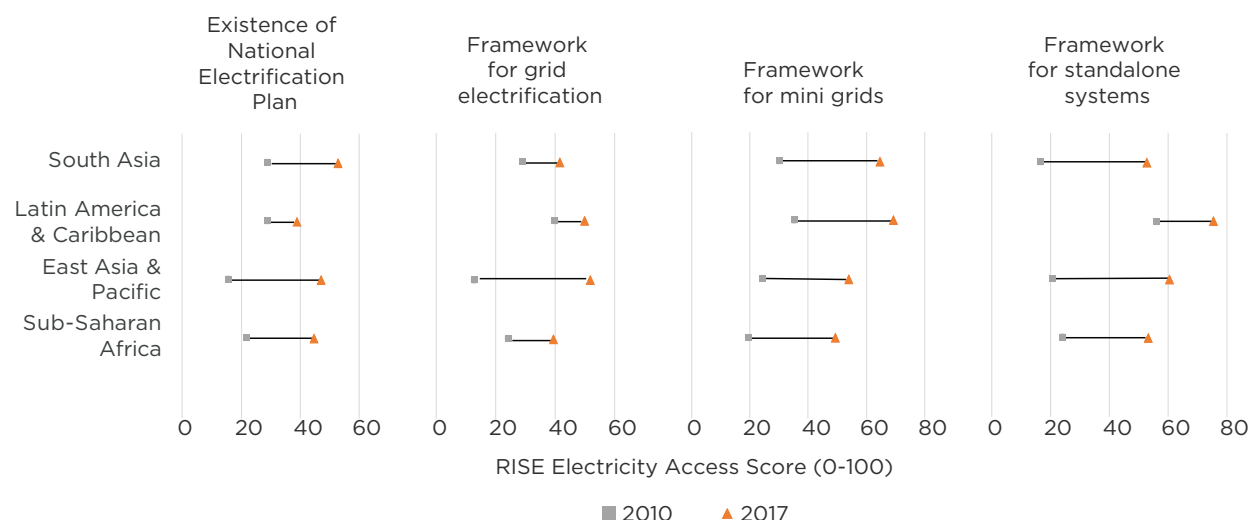
FIGURE 3.7 RISE ELECTRICITY ACCESS SCORE BY REGION, 2017



Note: For the Middle East & North Africa region, RISE only conducted a survey for Yemen, and in that country the electricity access pillar score was 14 in 2017.

Source: World Bank RISE 2018

FIGURE 3.8 IMPROVEMENT ON SELECTED ELECTRICITY ACCESS INDICATORS, BY REGION, 2010 TO 2017



Source: World Bank RISE 2018

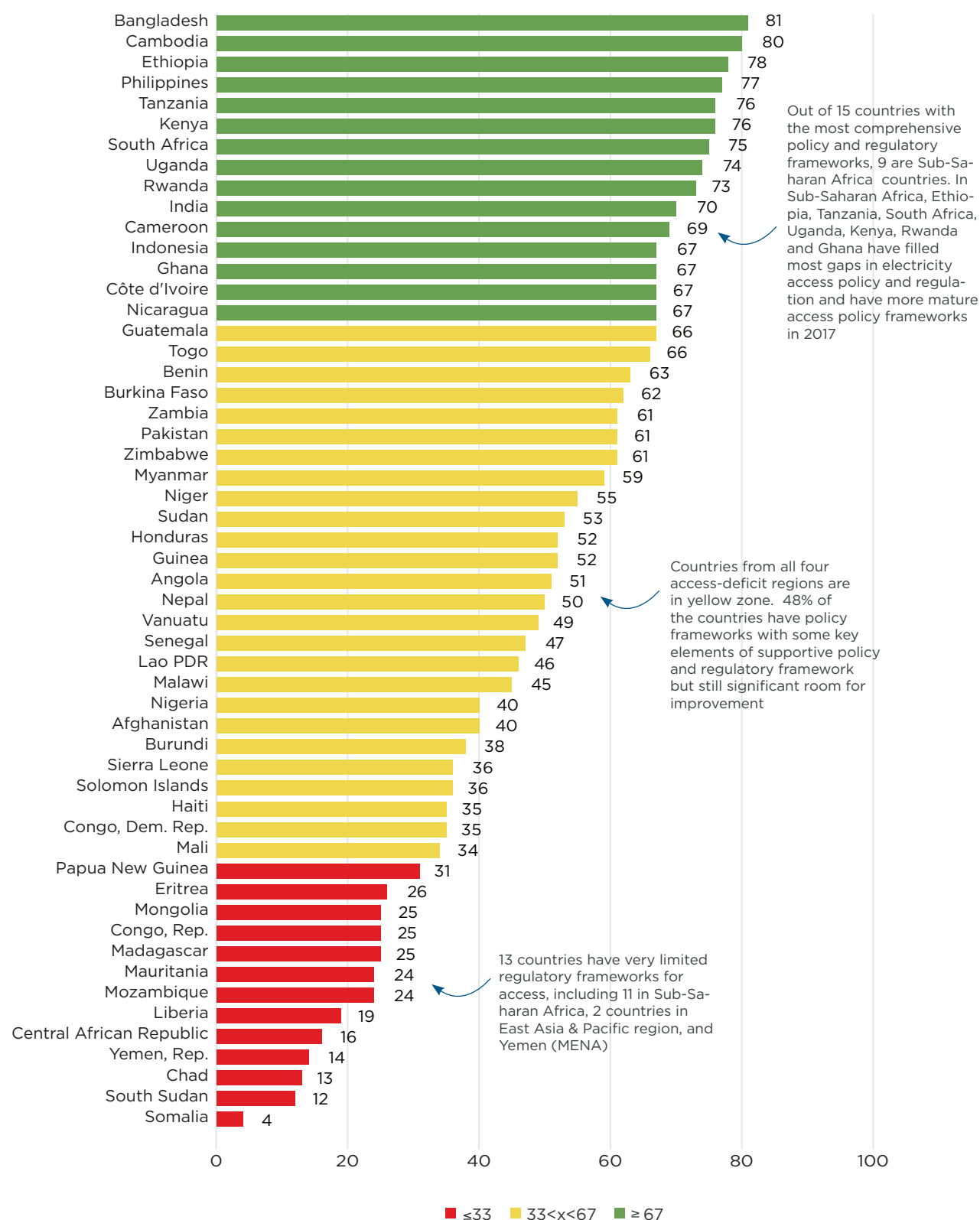
trification Programs in Africa, allowing it to develop clear policy frameworks for grid electrification, mini grids, and standalone systems. Tanzania and Kenya have dedicated their efforts to developing mini grids and standalone systems by establishing national programs and providing dedicated financing facilities. Meanwhile, South Africa benefits from its robust Integrated National Electrification Program (INEP), which not only sets ambitious universal access targets for 2025 but also lays out concrete steps to achieve them.

However, global policy advances have not trickled down to the least electrified countries and countries with fragility, conflict and violence, and their policy frameworks lag behind the rest of the world (Figure 3.10).

Bangladesh, Cambodia, and the Philippines are the three top-scoring countries for policy regulatory environment for electricity access in 2017 (Figure 3.9). All three countries have consistently laid the foundation to establish robust policies, from electrification plans to regulatory frameworks promoting each supply option (Figure 3.11). In Bangladesh, IDCOL (the financial intermediary) was the key player in developing guidelines and providing financ-

ing facilities for both suppliers and customers of mini grid and off-grid systems. In comparison, the Philippines decided to establish clear guidelines on setting tariffs and subsidies for small grids and standalone systems. In addition, both countries have regularly updated their national electrification plans, which include periodic valuation and reporting requirement. Cambodia has also committed to establishing an electrification monitoring system, but it has no provision yet to enforce the policy.

Indonesia, Rwanda, and Tanzania have been the fastest policy improvers from 2010 to 2017 (Figure 3.12). All countries have shown continuous progress throughout the seven years, showing that long-term effort is required to build strong and comprehensive electricity access policies. Across the three countries, the existence of national electrification plans stands out. However, each country adopted its own strategy and prioritized policies to promote specific supply options. On paper, Tanzania has established comprehensive policies across all three supply options, while Rwanda on policy level seems to have focused on promoting mini grid and standalone system solu-

FIGURE 3.9 DISTRIBUTION OF RISE 2017 ELECTRICITY ACCESS SCORES, 54 ACCESS-DEFICIT COUNTRIES

Source: World Bank RISE 2018

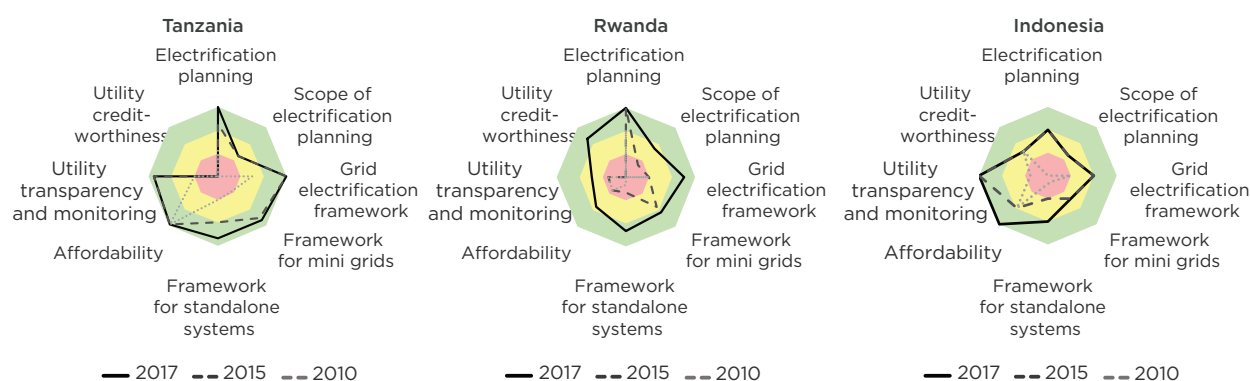
The treemap displays the following countries and their approximate relative sizes (based on area):

- Asia (Green):** India (largest), China, Japan, South Korea, Taiwan, Hong Kong, Macao, Singapore, Philippines, Vietnam, Laos, Myanmar, Thailand, Cambodia, Laos, Vietnam, Cambodia, Laos, Vietnam, Cambodia.
- Africa (Yellow):** Nigeria, Egypt, Sudan, Chad, Mali, Niger, Mauritania, Senegal, Gambia, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Nigeria, Egypt, Sudan, Chad, Mali, Niger, Mauritania, Senegal, Gambia, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana.
- Europe (Red):** Russia, Germany, France, United Kingdom, Italy, Spain, Greece, Portugal, Ireland, Finland, Sweden, Norway, Denmark, Netherlands, Belgium, Luxembourg, Switzerland, Austria, Czech Republic, Slovakia, Hungary, Poland, Czech Republic, Slovakia, Hungary, Poland.
- North America (Blue):** United States, Canada, Mexico, Central American countries (Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama), Caribbean countries (Cuba, Haiti, Dominican Republic, Jamaica, Trinidad and Tobago, Barbados, Guyana, Suriname, French Guiana).

FIGURE 3.11 PROGRESS ON INDICATORS FOR THE TOP THREE PERFORMERS IN THE ELECTRICITY ACCESS PILLAR, 2010 - 2017

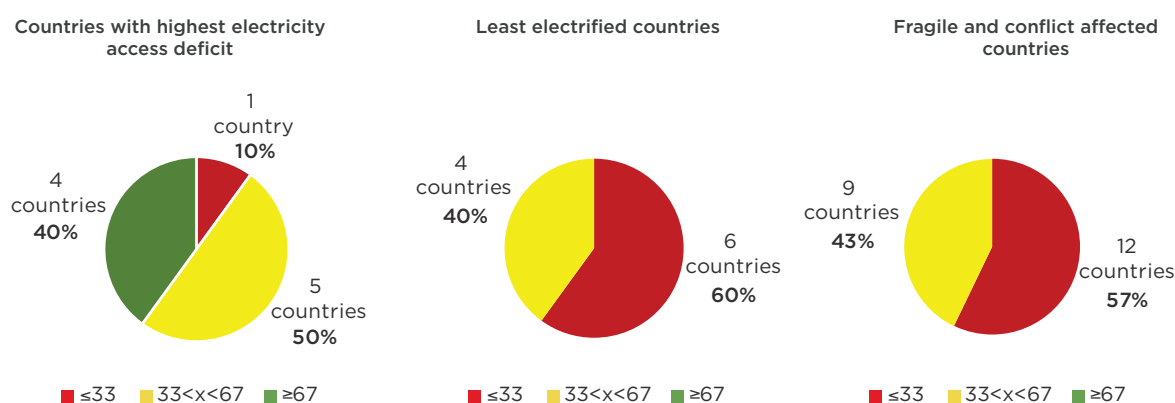


FIGURE 3.12 PROGRESS ON INDICATORS FOR THE TOP THREE FAST MOVERS IN THE ELECTRICITY ACCESS PILLAR, 2010-2017



Source: World Bank RISE 2018

FIGURE 3.13 RISE ELECTRICITY ACCESS SCORES FOR COUNTRIES WITH HIGHEST ACCESS DEFICIT, LEAST-ELECTRIFIED COUNTRIES, AND FRAGILE AND CONFLICT-AFFECTED COUNTRIES, 2017



Source: World Bank RISE 2018

tions rather than grid electrification.

Compared to countries with the largest access deficits, the least electrified countries have weaker access-policy frameworks and are yet to see a major push, especially in electrification planning. In the context of conflict, fragility and, as a consequence, deep uncertainty, only half of these latter countries have started to develop targeted regulation to foster electricity access (Figure 3.13). Electrification planning—which is relatively low-hanging fruit—and utility creditworthiness particularly lag behind.

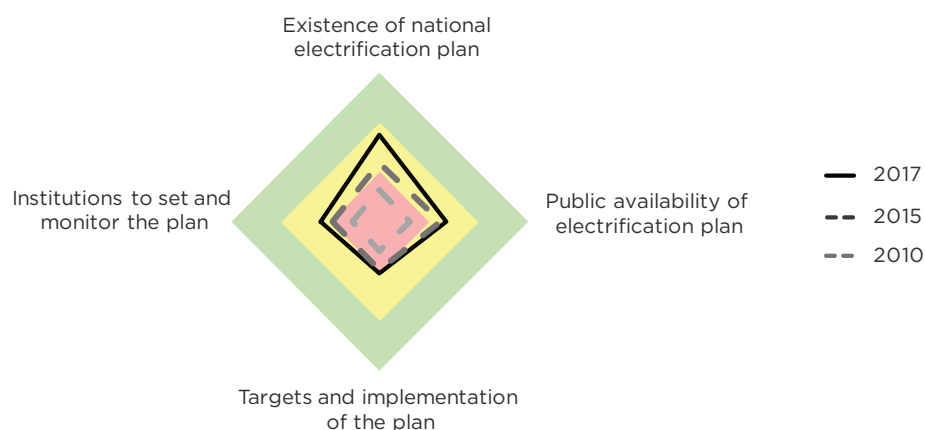
NATIONAL ELECTRIFICATION PLANS

The importance of national electrification plans as a preliminary step in developing a regulatory framework for electricity access is evident in RISE results across all countries with electricity access deficits. A majority of access-deficit countries have designed electrification strategies, and the number of countries with officially approved national electrification plans almost doubled from 2010 to 2017. Countries such as Mozambique, Togo, and Burundi approved their national electrification plans in 2018 (post the reporting period

of this RISE edition). However, among those countries that have approved such plans, only a few have set up measures to share, update, and track progress (*Figure 3.14*). Although most countries have established institutions to set electrification strategies and monitor their implementation, only half of the countries track progress and report an actual roll-out of the plans (*Figure 3.15*).

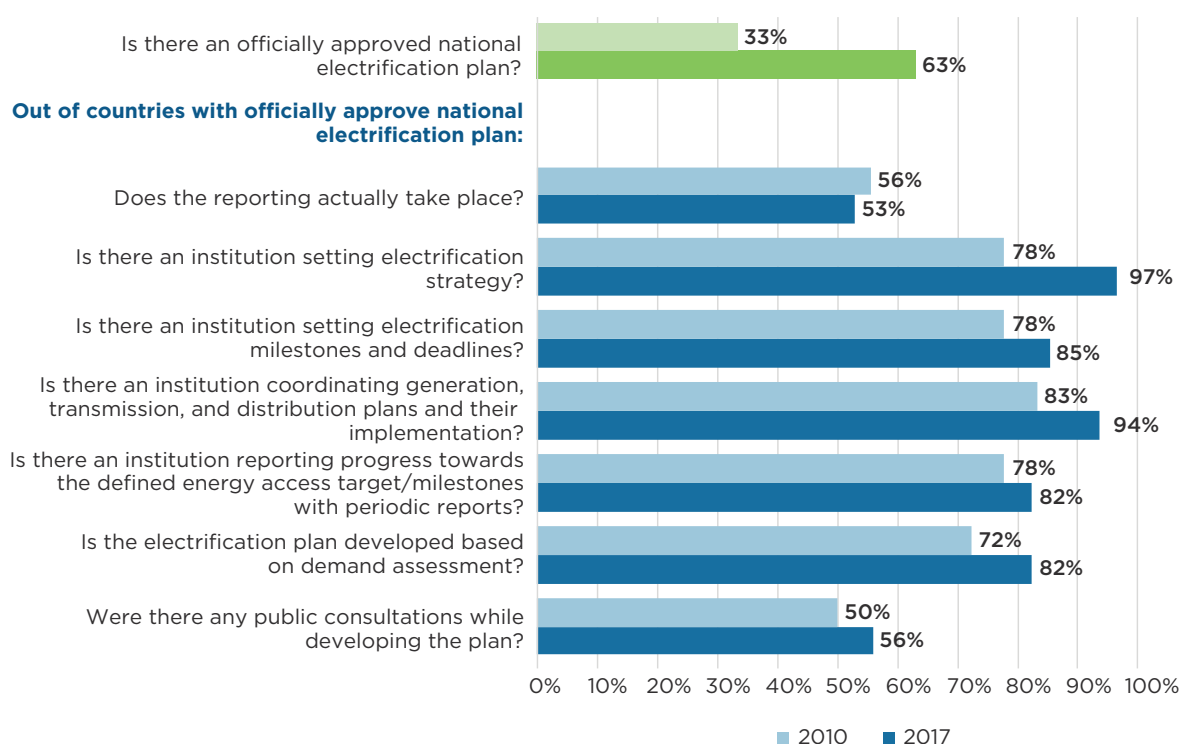
However, most electrification plans are not inclusive and comprehensive enough in scope. Having a national electrification plan alone is insufficient for developing a robust regulatory framework for electricity access. Best practices include incorporating all electrification solutions within the plans, as well as including a definition of quality of service, considering disparate pockets of the popula-

FIGURE 3.14 PROGRESS ON NATIONAL ELECTRIFICATION PLANS, BY SUB-INDICATOR, 2010, 2015 AND 2017



Source: World Bank RISE 2018

FIGURE 3.15 PROGRESS ON THE MAIN ATTRIBUTES OF NATIONAL ELECTRIFICATION PLANNING BEYOND APPROVAL: PERCENTAGE OF COUNTRIES, 2010 VS. 2017



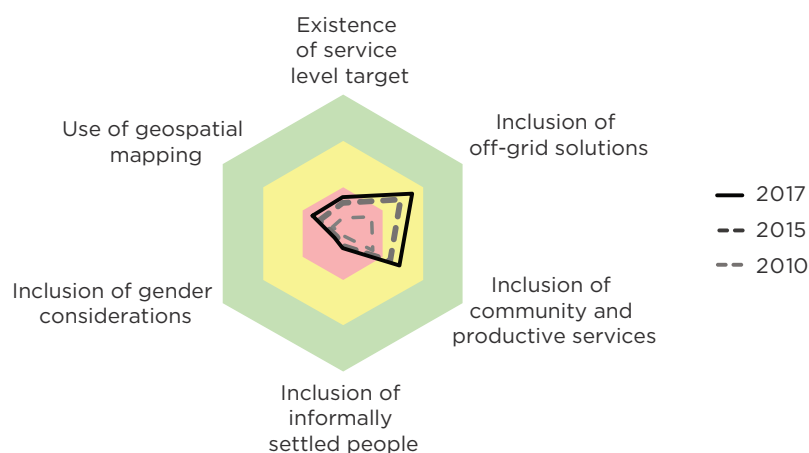
Source: World Bank RISE 2018

tion, and using technical tools like geospatial mapping. Only six countries have developed plans with a comprehensive scope that scores in the green zone in the last seven years: Angola, Cameroon, Ethiopia, Guinea, South Africa, and Tanzania.

The development of off-grid solutions has been the most common attribute included in national electrification plans, followed by the inclusion of community and productive

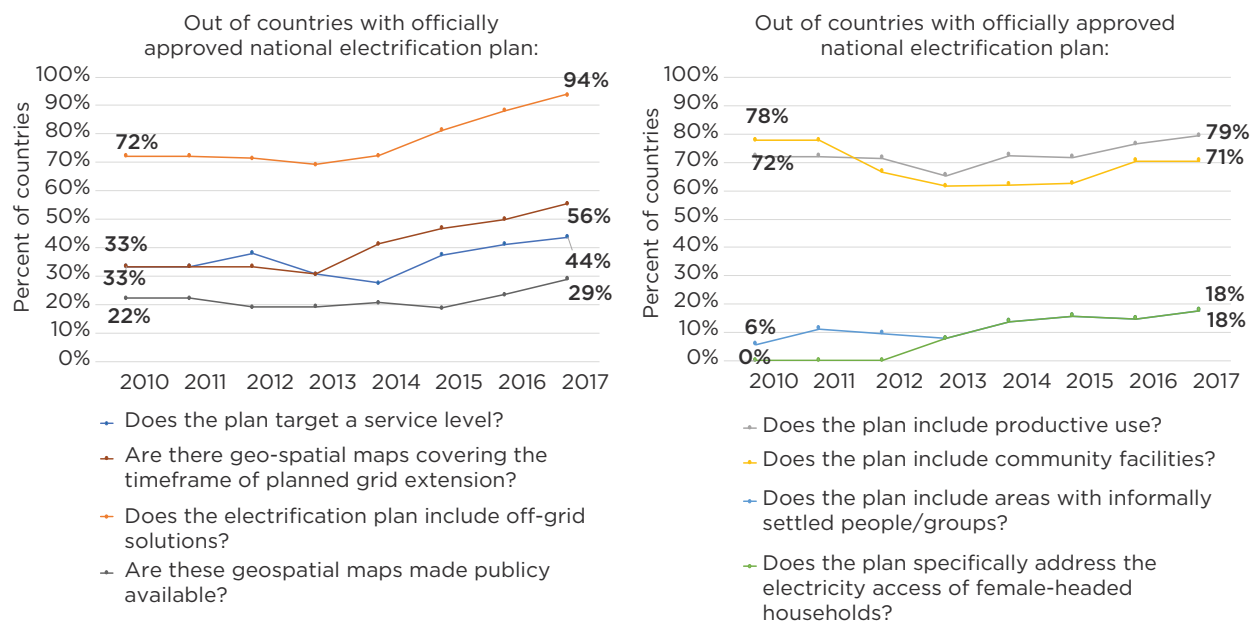
services (Figure 3.16). Of the countries with approved national electrification plans, 94 percent have included off-grid solutions, and 79 percent have planned for the productive use of electricity. Meanwhile, only 18 percent of them (Ethiopia, Ghana, Myanmar, Senegal, Tanzania, and Vanuatu) have introduced energy provisions to foster electricity access among female-headed households (Figure 3.17).

FIGURE 3.16 PROGRESS ON INCLUSIVE ELECTRIFICATION PLANS, BY SUB-INDICATOR, 2010 – 2017



Source: World Bank RISE 2018

FIGURE 3.17 IMPROVING SCOPE OF ELECTRIFICATION PLANS: PERCENTAGE OF COUNTRIES WITH QUALITATIVE AND INCLUSIVE PLAN ELEMENTS, BY SUB-INDICATOR, 2010 – 2017



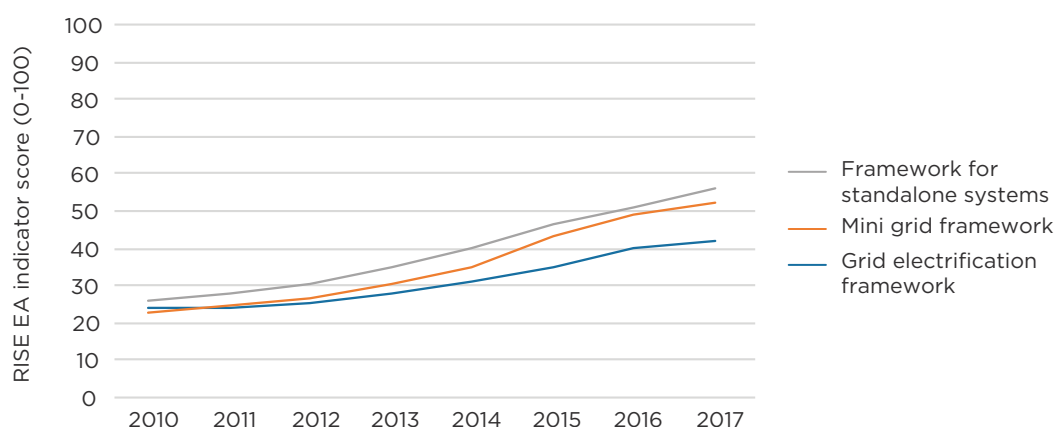
Source: World Bank RISE 2018

DEVELOPMENT OF OFF-GRID SOLUTIONS

Policies and regulations to support the development of mini grids and standalone systems across regions have improved rapidly since 2010, surpassing (as of 2017) those designed to support grid electrification. In almost all

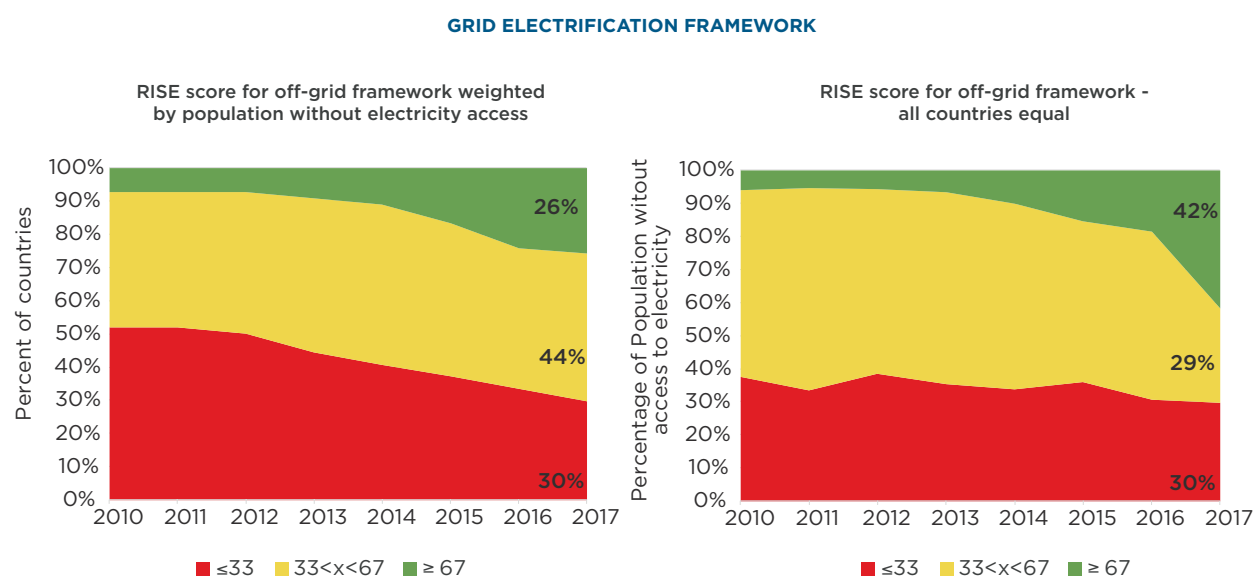
the countries with the largest electricity access deficits, policy and regulatory frameworks for mini grids and standalone systems are usually more common than frameworks for grid electrification (*Figures 3.18 and 3.19*). Countries such as the DRC and Mozambique have actually neglected policies supporting grid expansion altogether.

FIGURE 3.18 EVOLUTION OF RISE SCORES FOR FRAMEWORKS FOR GRID ELECTRIFICATION, MINI GRIDS AND STANDALONE SYSTEMS BETWEEN 2010 AND 2017

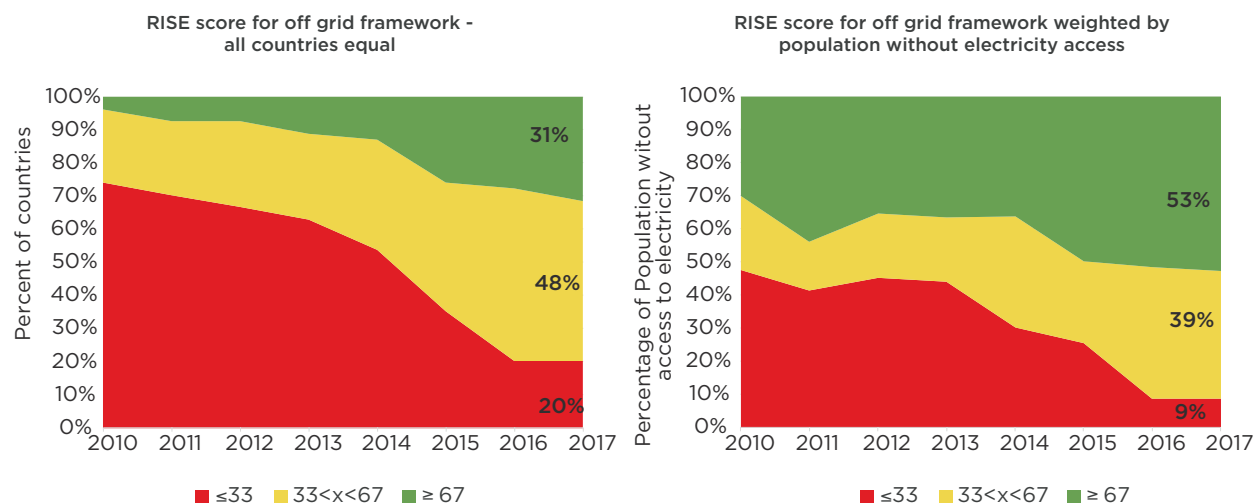


Source: World Bank RISE 2018

FIGURE 3.19 DISTRIBUTION OF RISE SCORES FOR GRID ELECTRIFICATION VS OFF GRID FRAMEWORKS BETWEEN 2010 AND 2017

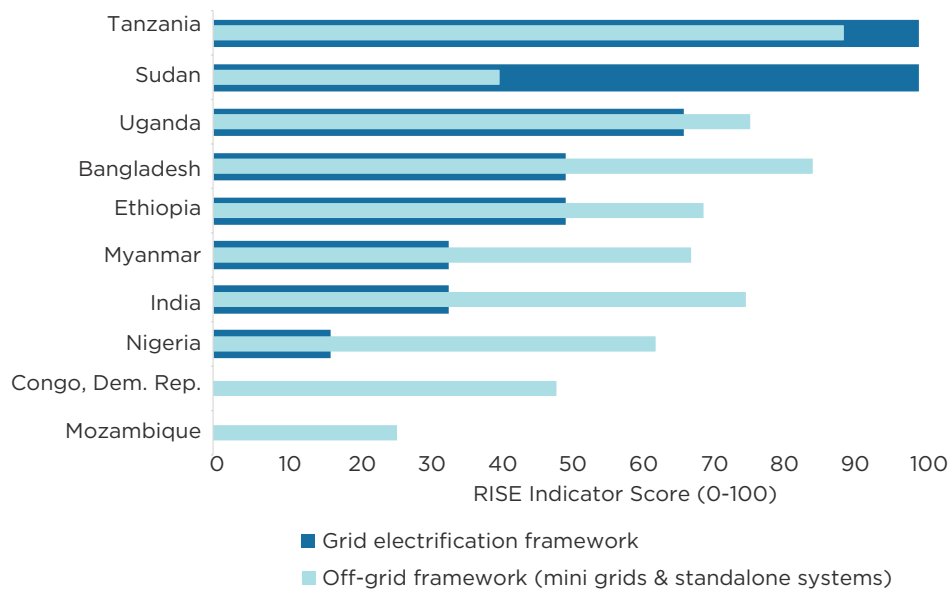


FRAMEWORK FOR OFF-GRID SOLUTIONS (COMBINED FRAMEWORK FOR MINI GRIDS & STANDALONE SYSTEMS)



Source: World Bank RISE 2018, World Bank Tracking SDG7: The Energy Progress Report 2018

FIGURE 3.20 RISE SCORES FOR GRID AND OFF-GRID ELECTRIFICATION FRAMEWORKS FOR 10 COUNTRIES WITH THE LARGEST POPULATIONS WITHOUT ACCESS TO ELECTRICITY, 2017

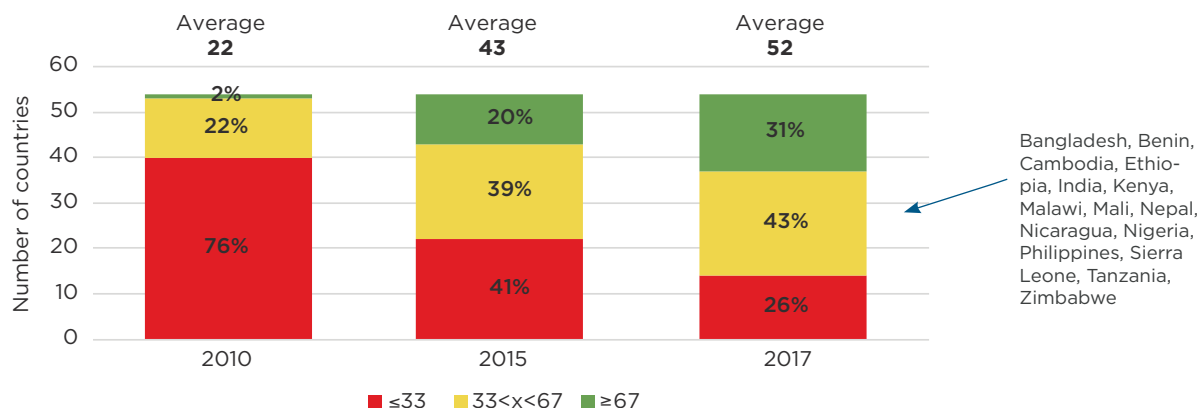


Source: World Bank RISE 2018

Since 2010, the number of countries with comprehensive mini grid framework policies and regulations has increased from 1 to 17. Starting from having only one country (Nicaragua) in 2010 with a robust mini grid framework, by 2017 there were 17 countries (Figure 3.21). While almost 60 percent of the countries introduced programs dedicated to mini

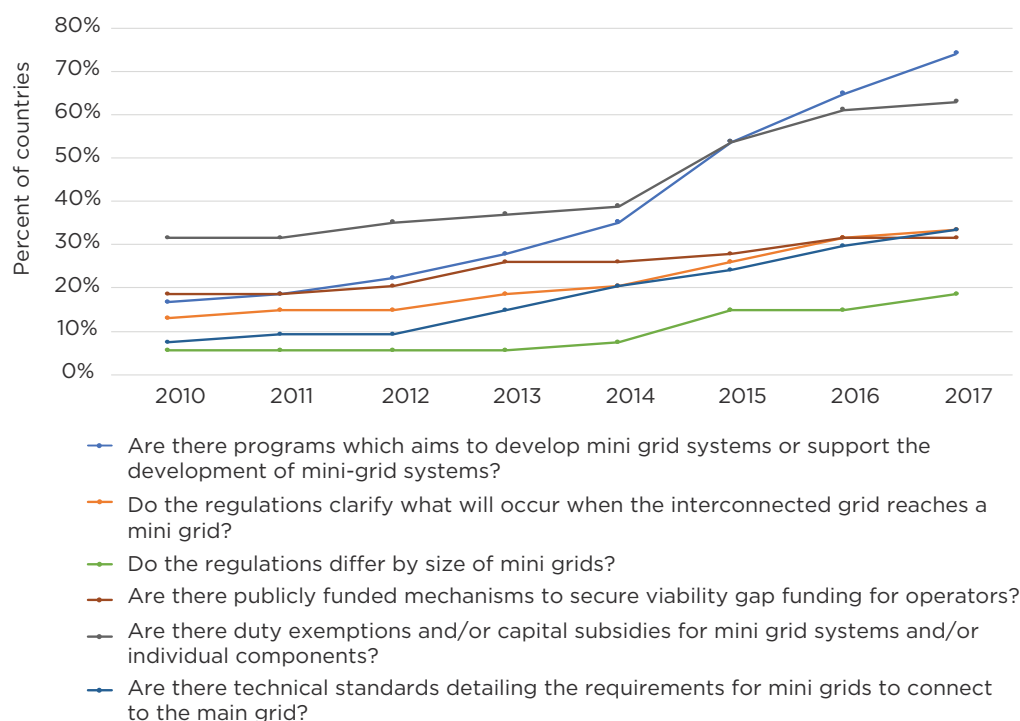
grid development between 2010 and 2017, a smaller number of countries developed more detailed provisions, such as having regulations that differ by the size of the mini grids (19 percent of countries) or clarifying what will occur when a main grid reaches a mini grid (33 percent) (Figure 3.22).

FIGURE 3.21 DISTRIBUTION OF SCORES FOR MINI GRID FRAMEWORKS, 2010, 2015, AND 2017



Source: World Bank RISE 2018

FIGURE 3.22 EVOLUTION OF THE MAIN ATTRIBUTES FOR MINI GRID FRAMEWORKS: PERCENTAGE OF COUNTRIES WITH ATTRIBUTES IN PLACE, 2010 – 2017

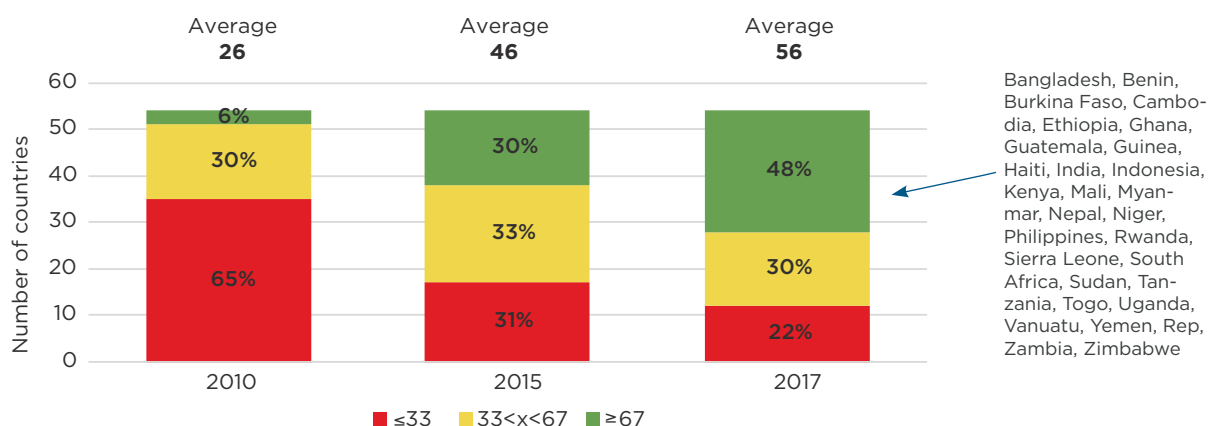


Source: World Bank RISE 2018

In addition, good policy practices to promote standalone systems have been established rapidly in more than half of the countries covered since 2010 (Figure 3.23). However, countries concentrate on expanding their markets

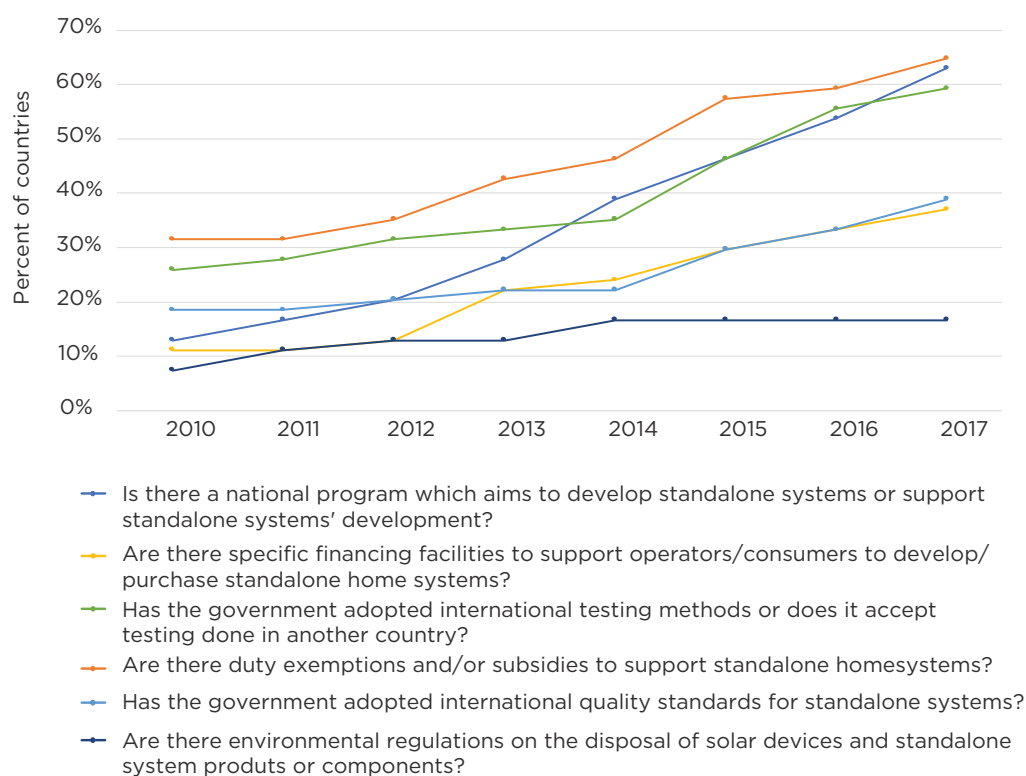
by establishing national promotion programs, but give much less consideration to standards, quality control, and waste management (Figure 3.24).

FIGURE 3.23 DISTRIBUTION OF COUNTRY SCORES FOR STANDALONE SYSTEM FRAMEWORKS, 2010, 2015, AND 2017



Source: World Bank RISE 2018

FIGURE 3.24 EVOLUTION OF MAIN ATTRIBUTES FOR STANDALONE SYSTEM FRAMEWORKS: PERCENTAGE OF COUNTRIES WITH ATTRIBUTES IN PLACE, 2010 - 2017



Source: World Bank RISE 2018

BOX 3.1 MULTI-TIER FRAMEWORK: HOW HIGH-QUALITY ELECTRIFICATION DATA INFORM BETTER NATIONAL POLICIES TO ACHIEVE UNIVERSAL ACCESS

The Multi-Tier Framework (MTF) collects information on seven attributes of electricity service: capacity, service hours, reliability of service, quality of voltage, affordability, legality, and safety. These attributes are used to classify household into five levels of service (MTF tiers), from tier 1 (minimum basic service) to tier 5 (highest level of service).

Countries have already been incorporating data obtained from the MTF surveys to inform and update their targets and policies. Both Ethiopia and Rwanda are using the MTF terminology to set or adjust their energy access targets. Moreover, the Rural Electrification Fund in Rwanda – the entity responsible for rural electrification – is using information obtained from the MTF surveys to inform their investment needs. Other country examples include Cambodia and Myanmar, which are using information from the MTF surveys, such as households' willingness to pay, expenditures, consumption patterns, appliance use, and other variables, to quantify the need for private-sector investment in the sector.

The combined analysis of the MTF survey and RISE results, points to a time lag between the establishment of the policy framework and the encouraging results that the policy achieves (*Table 3.1 shows an example for standalone systems*). This time lag should be taken into consideration by countries when they set energy access targets and develop detailed electrification road maps.

TABLE 3.1 THE FRAMEWORK ON STANDALONE SYSTEMS FOR MTF-SURVEYED COUNTRIES

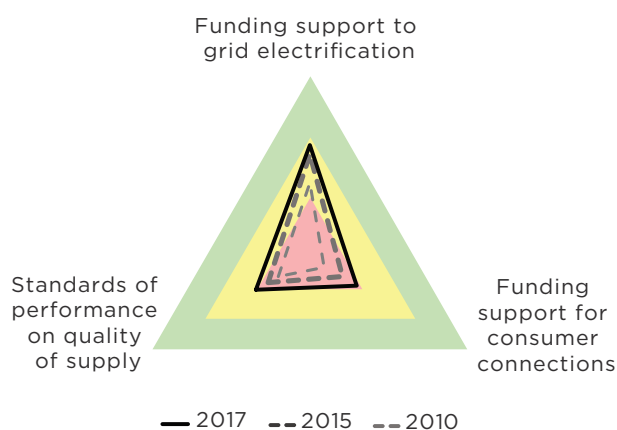
Countries	RISE score for standalone system framework (out of 100)	Percent of households which obtain electricity through off-grid technologies, 2017	Launch year of the national standalone system program
Cambodia	100	26.1%	2013
Ethiopia	89	23.9%	2010
Myanmar	78	48%	2014
Rwanda	67	5.1%	2016

Source: World Bank RISE 2018

GRID ELECTRIFICATION POLICY FRAMEWORK

Compared to other policies, the development of grid electrification frameworks in the period 2010-2017 has been moderate. Encouragingly, however, while in 2010 there were 15 out of 54 countries that had both dedicated funding for national electrification and capital subsidies for rural grid electrification, this number increased to 25 countries in 2017. The main improvement in the grid electrification framework is to set a dedicated funding line for electrification, followed by specifying standards of performance on reliability (*Figure 3.25*). In addition, 31 percent of countries provide financing mechanisms for consumers to connect to the grid in 2017, compared to only

FIGURE 3.25 GLOBAL PROGRESS ON GRID ELECTRIFICATION FRAMEWORKS BY SUB-INDICATOR, 2010, 2015, AND 2017



Source: World Bank RISE 2018

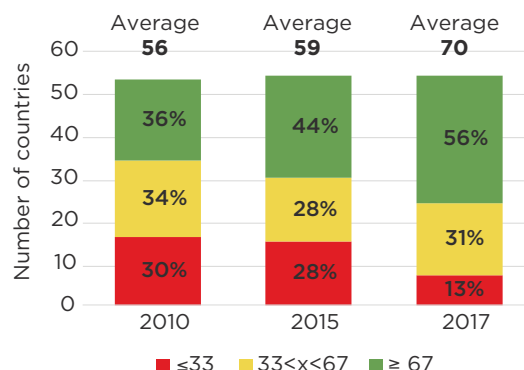
9 percent in 2010. However, eight countries still have not set up any form of supporting grid policies (Central African Republic, Chad, Democratic Republic of Congo, Mozambique, Sierra Leone, Somalia, South Sudan, and Yemen), many of these countries, however, are in conflict or post-conflict situations, which may have prevented them from actively pursuing grid infrastructure building.

AFFORDABILITY AND UTILITY CREDITWORTHINESS

The affordability of electricity to consumers improved significantly between 2015 and 2017, compared to relatively slow progress between 2010 and 2015. Consumer affordability is evaluated based on a combination of three relevant measures, comprising: the affordability of subsistence consumption (meaning that the cost of a minimal consumption of 30 kilowatt-hours per month falls below a threshold of 5 percent of household monthly GNI for the poorest 40% of the population); the affordability of connection fees (meaning that the up-front cost of connection falls below average monthly household GNI for the bottom 40% of the population); as well as the existence of a lifeline tariff. In 2017, half of the access-deficit countries provided affordable subsistence electricity supply and electricity connection to households for the bottom 40% of their population, with affordability having substantially improved in half of the access-deficit countries between 2010 and 2017 (*Figure 3.26*).

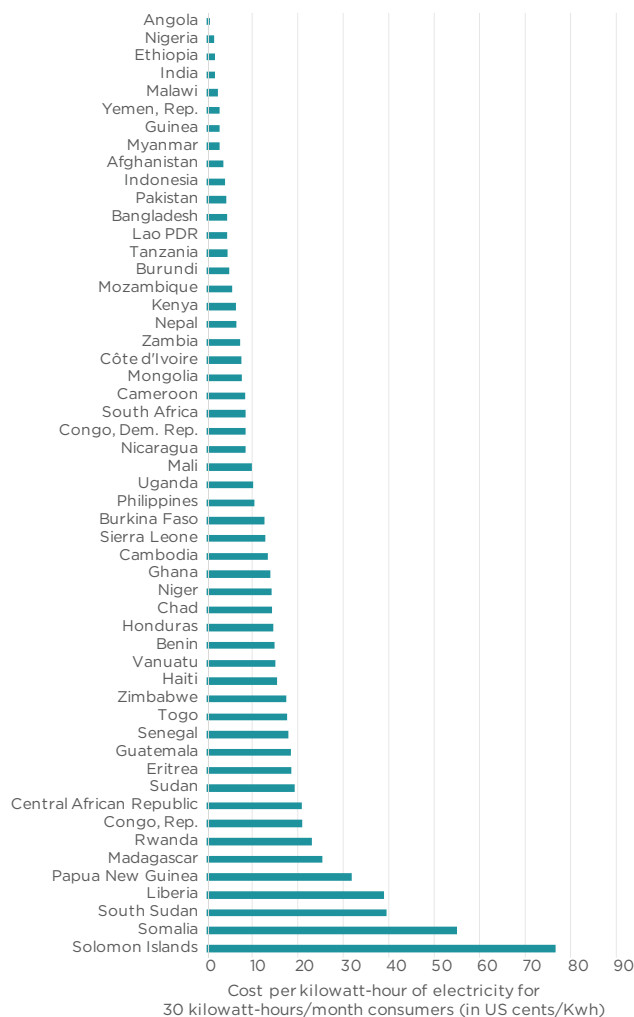
Nevertheless, in about half of the countries the poorest 40 percent of households could not afford subsistence consumption of electricity due to a combination of low incomes and high costs.¹¹ The monthly cost of subsistence consumption of electricity varied from under \$0.01 per kilowatt-hour in Angola to over \$0.75 per kilowatt-hour in Solomon Islands, with a median value of around \$0.10 per kilowatt-hour (*Figure 3.27*). A significant minority comprising 18 out of 54 countries face relatively high electricity tariffs in excess of \$0.15 per kilowatt-hour, entailing monthly expendi-

FIGURE 3.26 DISTRIBUTION OF COUNTRY SCORES ON CONSUMER AFFORDABILITY OF ELECTRICITY, 2010, 2015, AND 2017



Source: World Bank RISE 2018

FIGURE 3.27 COST OF ELECTRICITY/KILOWATT-HOUR FOR 30 KILOWATT-HOURS/MONTH CONSUMERS, BY COUNTRY, 2017



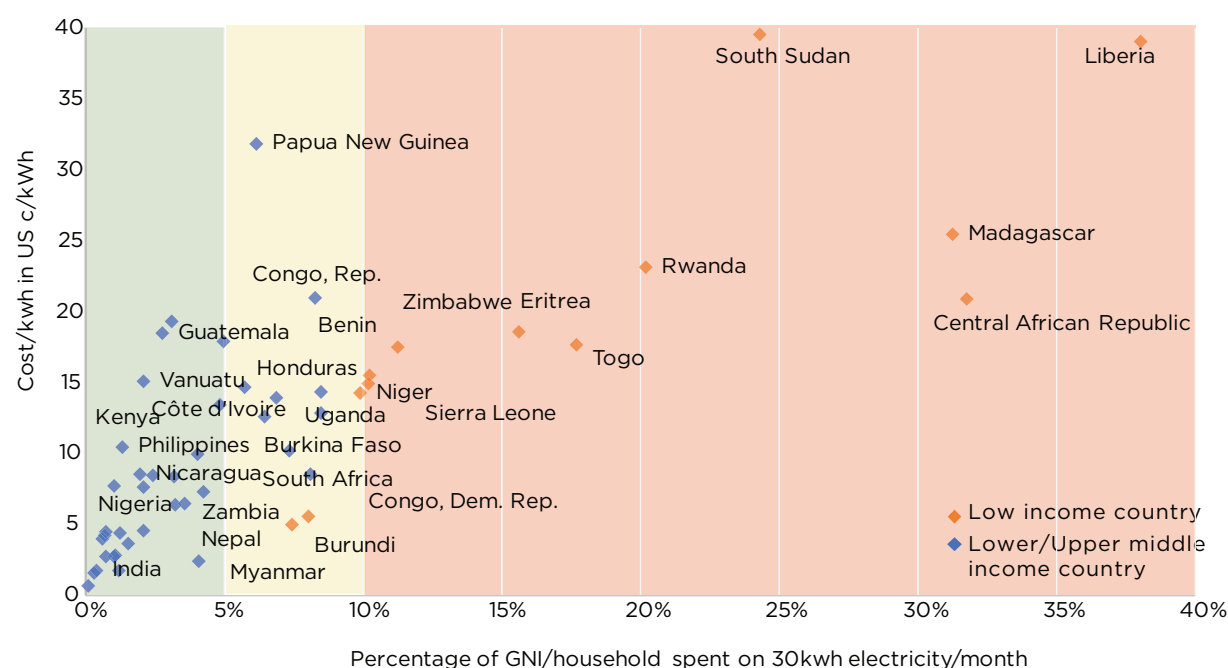
*Note: This chart excludes Mauritania.
Source: World Bank RISE 2018

tures in excess of \$4.50 for 30 kilowatt-hours of electricity. High costs are often associated with landlocked countries (Rwanda), island states (Madagascar, Papua New Guinea), or fragile countries with under-developed power systems (Liberia, Somalia). Affordability problems arise when low income countries also face high costs of electricity. All the countries in the red zone are low income countries facing power costs in excess of \$0.15/kWh, meaning that subsistence consumption absorbs

more than 10% of the budget of the poorest 40% (*Figure 3.28*). Countries with lower cost electricity and/or middle income status typically do not face affordability challenges for subsistence consumption.

At the same time, as of 2017, in over half of the access-deficit countries, getting connection to electricity costs more than one month's income of a household in the bottom 40 percent. (*Figure 3.29*). In over one-third of

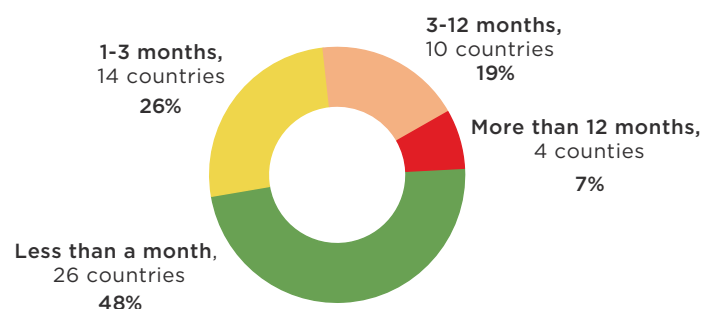
FIGURE 3.28 ELECTRICITY TARIFFS AS A SHARE OF GNI PER HOUSEHOLD FOR THE BOTTOM 40 PERCENT OF HOUSEHOLDS, BY COUNTRY, 2017



Source: World Bank RISE 2018

Note: This chart excludes Mauritania and Solomon Islands.

FIGURE 3.29 DISTRIBUTION OF COUNTRIES BY ELECTRICITY CONNECTION FEE (IN MONTHS OF HOUSEHOLD GNI), 2017

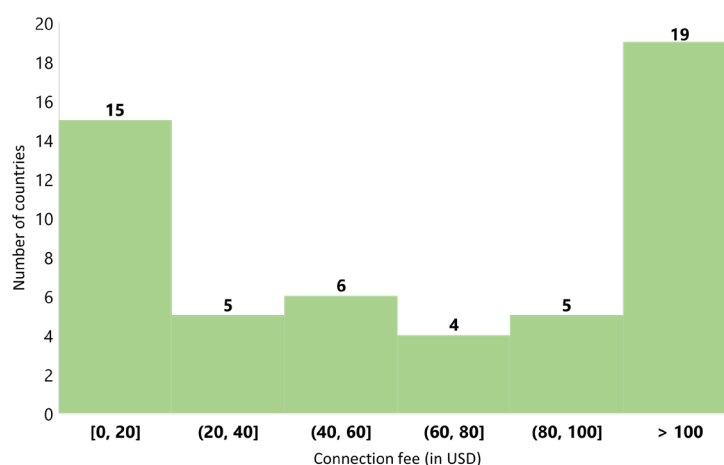


Source: World Bank RISE 2018

the countries, the connection fee was greater than US\$100 (Figure 3.30). To tackle the burden of electricity connection costs, some countries provide government subsidies to connection, offer consumers the option to pay for connection by installments, or simply allow utilities to recover connection costs through general tariffs.

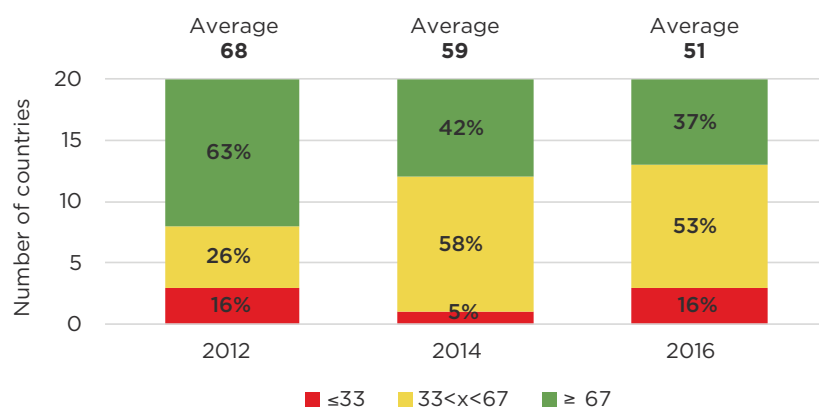
While consumer affordability of electricity has improved, utility creditworthiness has declined in access deficit countries. Between 2012 and 2016, the creditworthiness of utilities declined in almost two-third of the access-deficit countries (Figure 3.31). Factors responsible for the decline in creditworthiness of utilities in access-deficit countries include

FIGURE 3.30 NUMBER OF COUNTRIES BY THE RANGE OF ELECTRICITY CONNECTION FEE CHARGED (USD), 2017



Source: World Bank RISE 2018

FIGURE 3.31 DISTRIBUTION OF COUNTRIES' UTILITY CREDITWORTHINESS, 2012, 2014, AND 2016

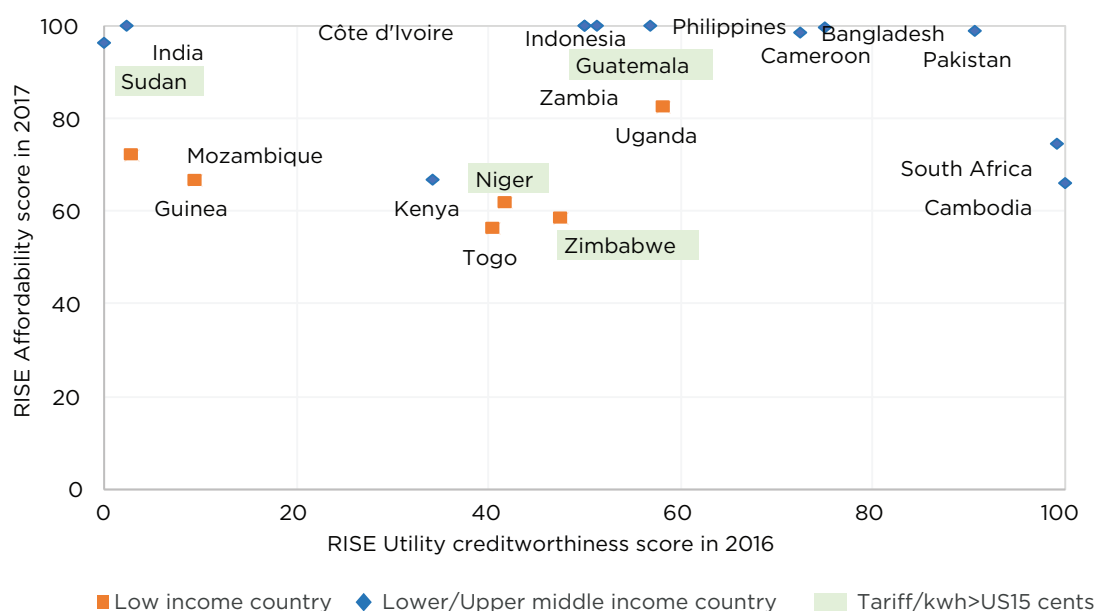


Note: The time series for utility creditworthiness is available only for 20 out of 54 access deficit countries.
Source: World Bank RISE 2018

the difficulty of setting cost-recovery tariffs or cross-subsidizing the use of revenue from other consumer bases and the financial pressures of providing connections to remote, low-volume consumption areas. (Figure 3.32). While there are some countries that are managing to deliver simultaneously on affordability and creditworthiness objectives (e.g., Bangladesh, Pakistan, South Africa in the top right-hand quadrant of Figure 3.32), many others seem to have bought affordability at the expense

of creditworthiness (e.g., India, Mozambique, Guinea in the top left-hand quadrant of Figure 3.32). Almost all of the countries that have sacrificed creditworthiness in the interests of affordability are either low income countries and/or countries facing relatively high prices for electricity in excess of \$0.15 per kilowatt-hour. Interestingly, there are no countries that have chosen to sacrifice affordability in the interests of creditworthiness; as the bottom right-hand quadrant is blank.

FIGURE 3.32 COMPARISON BETWEEN RISE AFFORDABILITY SCORE IN 2017 AND RISE UTILITY CREDITWORTHINESS SCORE IN 2016



Note: The time series for utility creditworthiness is available only for 20 out of 54 access deficit countries
Source: World Bank, RISE 2018

ENDNOTES

⁹ Electricity access policies were assessed in countries where less than 90% of the population or more than 5 million people lack access to electricity.

¹⁰ Tracking SDG 7: The Energy Progress Report was authored by the International Energy Agency, International Renewable Agency, United Nations Statistics Division, World Bank, and the World Health Organization. It is available online at <https://trackingsdg7.esmap.org/>

¹¹ This calculation is used to determine household affordability of electricity. 30 kWh per month is considered the minimum electricity consumption for subsistence.