RISE 2020

REGULATORY INDICATORS FOR SUSTAINABLE ENERGY

SUSTAINING THE MOMENTUM

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ESMAP
Energy Sector Management Assistance Program

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The Energy Sector Management Assistance Program (ESMAP) is a partnership between the World Bank and 18 partners to help low- and income countries reduce poverty and boost growth through sustainable energy solutions. ESMAP's analytical and advisory services are integrated within the World Bank's country nancing and policy dialogue in the energy sector. Through the World Bank Group (WBG), E works to accelerate the energy transition required to achieve Sustainable Development Goal 7 (SDG7) to ensure access to a ordable, re sustainable, and modern energy for all. It helps to shape WBG strategies and programs to achieve the WBG Climate Change Action Plan Learn more at https://esmap.org

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WHAT IS RISE?

RISE—Regulatory Indicators for Sustainable Energy—is a set of indicators intended for use in comparing the policy and regulatory frameworks that countries have put in place to support the achievement of Sustainable Development Goal 7 on universal access to clean and modern energy. This third edition of the report captures policies and regulations that enhance sustainable energy in the form of 31 indicators distributed among four pillars: access to electricity, clean cooking, renewable energy, and energy efficiency.

The indicators, scored on a 0–100 scale, can be used to compare 138 economies that now account for 98 percent of the world's population. A country's overall score is an average of its scores for the access to electricity, renewable energy, and energy efficiency pillars (the clean cooking pillar is only scored for 55 access-deficit countries).[2] The data in RISE 2020 cover the years 2010 to 2019 and are current as of December 31, 2019.

Scores are grouped into three categories based on a "traffic light" system: green for the highest third of scores (67–100), indicating a relatively mature policy environment though still with room for improvement; yellow for the middle range (33–67), indicating that the country has begun to make serious efforts to develop a policy framework but still has some room for improvement; and red for the lowest scores (0–33), indicating that policy adoption remains at an early stage.

By measuring the level and ambition of policy adoption in countries, the indicators can help policymakers benchmark their own national energy framework against those of regional and global peers. By providing empirical evidence of the support provided by policy frameworks, the RISE database helps countries attract investment in their sustainable energy sector.

RISE is also a valuable resource for private investors and developers, who use it to carry out due diligence related to new projects, products, and services. RISE scores are intended to illustrate how close or far a country is from offering an attractive policy environment. They should not be construed as investment advice.

The RISE data platform also includes a comprehensive library of policies and regulations on sustainable energy in 138 countries. It highlights global, regional, and national best practices spanning the gamut of sustainable energy policy making and offers regional profiles and country policy profiles. Detailed information on methodology is available on the website (http://rise.esmap.org/).

1 54 countries were surveyed for electricity access in 2019. Access deficit countries were selected if they had access rates under 90% or if there were over 5 million people lacking access to electricity in the country. Countries with no electricity access deficit were scored 100.

2 The clean cooking pillar is scored for 55 access-deficit countries (as identified in IEA, IRENA, UNSD, World Bank, and WHO, 2020) and is averaged in the overall score for those countries only.

The RISE framework

Each of RISE's four pillars rests on a set of indicators as shown in the gure below.

FIGURE A RISE'S PILLARS AND INDICATORS

Pillar	Indicators			
ELECTRICITY ACCESS	• Electri cation plan • Grid electri cation framework	• Framework for standalone systems • Utility transparency and monitoring	• Scope of the electri cation plan • Framework for mini grids	• Consumer a ordability • Utility creditworthiness
CLEAN COOKING	• Planning	• Scope of planning	• Standards and labeling	• Incentives for clean cooking solutions
RENEWABLE ENERGY	• Legal framework for renewable energy • Incentives and regulatory support for renewable energy	• Network connection and use • Carbon pricing and monitoring	• Planning for renewable energy expansion • Attributes of nancial and regulatory incentives	• Counterparty risk
ENERGY EFFICIENCY	• National energy e ciency plannin • Incentives and mandates: Public sector • Minimum energy performance standards	• Transport sector • Energy e ciency entities • Incentives and mandates: Utilities	• Energy labeling system • Carbon pricing and monitoring • Incentives and mandates: Industrial and commercial end users	• Financing mechanisms for energy e ciency • Building energy codes

Source: World Bank RISE 2018

KEY FINDINGS

- Policy matters. Policies and regulations are critical for countries seeking to attract new investment and grow toward a sustainable energy sector in line with Sustainable Development Goal 7 (SDG7). RISE 2020 presents an inventory of sustainable energy policies and regulations in 138 countries
- Globally, steady progress was made on sustainable energy policy in 2017–2019, but the pace was slower than in the past. Progress on policy related to renewable energy and energy e ciency slowed by half compared with 2015–17, whereas scores for electricity access and clean cooking maintained their advance and even accelerated during 2017–19.
- Although the sustained global momentum toward electri cation has brought signi cant policy improvements since 2010, most countries with de cits in access to electricity still have room for improvement in building robust policies. Frameworks to support mini grid and standalone systems have seen faster development since 2010 compared to on-grid electri cation. Income levels have a ected electri cation policy e orts, with 67 percent of middle- and upper-income countries having adopted comprehensive access frameworks by 2019, compared with just 13 percent of low-income countries.
- Although only 15 percent of the countries with de cits in access to clean cooking solutions have achieved advanced policy frameworks, those countries, including Ethiopia, India, Indonesia, and Kenya, represent more than half of the unserved population globally. While the period between 2010 and 2017 was notable for progress in upper- and lower-middle-income countries in Asia (Bangladesh, Cambodia, China, India, Indonesia, Mongolia, and Nepal) and Latin America (Guatemala), the period between 2017 and 2019 saw large improvements in low income Sub-Saharan Africa countries, notably Benin, Kenya, Nigeria, and Tanzania, which moved from the red zone to the yellow zone.
- Renewable energy policies in the heating and cooling sector and the transport sector lag considerably behind those in the electricity sector, and the gap has widened. This is due to the historical priority of using renewable energy sources to produce electricity rather than to deploy them in other sectors. Despite overall progress in renewable energy policies, measures related to carbon pricing and monitoring, which are key to the use of renewables in heating and cooling and in transport, have gone relatively underdeveloped since 2010, with 50 percent of the surveyed countries still not having policies in place in 2019.
- Historically, energy e ciency policies in heating and cooling, or HVAC, have been more developed than those in electricity and transport, with the latter scoring lowest globally. Approximately 75 percent of the surveyed countries have adopted minimum HVAC energy performance standards and labelling measures, with roughly 60 percent making them mandatory.
- The countries that made the most rapid improvements were concentrated in Sub-Saharan Africa. Of the top ten performers in RISE 2020, nine were in Sub-Saharan Africa, including South Africa, Benin, and Sudan. Kenya, Kenya, Tanzania, and Chad had the largest improvements, increasing their RISE scores by more than nine points per year on average from 2017 to 2019. The increase was driven mainly by progress on electricity access and renewable energy, with Kenya also improving markedly on energy e ciency.

POLICIES TO SUPPORT SUSTAINABLE ENERGY IN THE TIME OF COVID 19

RISE 2020 monitors and assesses policy and regulatory support for sustainable energy to promote energy e ciency and the use of renewable energy while expanding access to electricity and clean cooking fuels. Mapping policy data from well before the onset of the COVID-19 pandemic through December 2019, RISE 2020 reviews what governmen done to create an enabling environment for sustainable energy.

The economic crisis brought on by the pandemic is a ecting sustainable energy in ways that are only beginning to emerge. In response to COVID-19, several countries introduced country-wide lockdowns as well as energy-sector sp policies that are straining the energy industry and threatening access to energy just when it is needed most. With an ad al 150 million people projected to be pushed into extreme poverty by 2021, the expected impact of COVID-19 on pov creases the chances of meeting the access targets of Sustainable Development Goal 7 on universal access to mode of energy (World Bank 2020a). In many countries where utilities were already under nancial duress, the COVID-19 cr exacerbated existing pressures and jeopardized utilities' ability to provide essential services.[3] In addition, low oil prices have reduced incentives to invest in clean energy, and more di cult nancing conditions have constrained the developme capital-intensive clean energy solutions.

In the short term, policies embedded in stimulus packages could support energy service providers and minimize mar ket disruptions in the energy sector. Governments will need to help utilities recover from cash shortfalls and restructure their debt. As recovery progresses, broader energy tari reforms can be undertaken, accompanied by measures to p lower-income customers. Governments could then take the opportunity to implement structural reforms by phasing ou fuel subsidies and investing in digital, resilient, and clean energy infrastructure designed for nancial recovery, long cost savings, and expanded access to electricity (IEA 2020a). Promoting sustainable energy through stimulus policie also tamp down the likely spike in emissions of greenhouse gases as the global economy recovers, a phenomenon ob in the crisis of 2008–09 (McKinsey & Company 2020).

Beyond challenges, the pandemic confronts energy policy makers with opportunities to build back better. Policymak ers have the opportunity to set new priorities and explore di erent trajectories to support a low-carbon recovery and ac ate the pace toward attaining SDG 7 (IEA 2020b). Short-term measures embedded in recovery plans are opportunitie longer-term strategies and align policies on energy with SDG 7 targets over the next decade. The crisis underlines th to continue strengthening the regulatory framework, including incentives for sustainable energy development to ens resilient recovery from COVID-19. It also highlights the need to adopt policies and regulations that mitigate the risk of shocks while gradually withdrawing support for energy ine cient sectors (World Bank 2020).

Countries must not lose sight of the need to invest in clean energy, which would create jobs across sectors, boost eco nomic growth, and improve energy sustainability and resilience. Around $1 trillion per year over the next three years will be needed to ensure the full recovery of the energy sector (IEA 2020b). Government support, such as nancial incent private investments in clean energy and digitalization, will be critical. The returns to such support would likely be imm A large-scale shift toward electri cation fueled by renewables between now and 2050, accompanied by a ramping energy e ciency, could more than triple global employment in renewable energy—from 12 million jobs in 2017 to 42 m by 2050. Solar photovoltaic (PV) technology, coupled with energy e cient buildings, appliances, and industrial proce creates the most jobs per dollar of investment—up to 15 jobs per million (Ferroukhi, Casals, and Parajuli 2020). O for governments to promote such investment include tax deductions, guaranteed lending, rebates, cash-for-replace schemes, incentives for energy management systems, and programs for training and hiring energy managers (IEA 20

The pandemic also constitutes a mandate for clean cooking solutions—the bene ts of which would extend beyond the immediate post-pandemic recovery. As COVID-19 is a respiratory disease, scientists expect that urban air pollution coupled with inhalation of smoke from household cooking res, may signi cantly sharpen the risk of dying from COV complications. It is therefore more important than ever to make clean cooking a policy and investment priority, espec low-income countries.

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3 Observed reductions in bill collections due to lockdowns are even more severe than observed reductions in demand. Sector-speci c policies introdu some countries (bill reductions, cancellations, or deferrals for all customer classes) have the greatest negative impact on utility nances in the short-term.

THE RISE METHODOLOGY

RISE's geographic coverage has expanded from 133 countries in 2018 to 138 in 2020.[4] RISE 2020 now encompasses 98 percent of the global population. Its basic scoring methodology has not changed from previous editions.

Clean cooking has been transformed from a pilot into a main pillar. Despite progress in access to clean cooking, the most overlooked part of the sustainable energy agenda, affects 2.8 billion people worldwide. The RISE clean cooking pillar covers 55 countries that account for more than 93 percent of the countries with low access scores (IEA, IRENA, UNSD, World Bank and WHO 2020).[5] Four indicators measure the pillar's policy frameworks: planning, inclusiveness, standards and labelling, and incentives to increase uptake.

To capture recent changes in the energy sector, RISE 2020 refines the indicators and subindicators for all pillars, producing recalculations of the entire time series for all countries. The survey methodology for the electricity access pillar now captures more nuances in national policy design for electrification frameworks (grid and off-grid). The questionnaire was updated to yield a better picture of how national electrification plans are drafted—taking into account the access target as well as the existence of clear licensing procedures for mini grid operators and consumers. Similar questions shared between indicators ("framework for mini grids" and "framework for standalone systems") were merged so that scores would better reflect sector realities. With respect to clean cooking, RISE 2020 incorporates questions with the three other pillars to capture policies that address the externalities of cooking practices on health and gender. With respect to energy efficiency, the questionnaire was refined from eleven indicators to two (eliminating "information provided to consumers about electricity usage" and "energy efficiency incentives from electricity rate structures"). With respect to renewable energy, some subindicators were modified (mainly to merge redundant questions). Because of these changes, scores from previous RISE reports cannot be directly compared with those in the latest edition.

Measuring the quality and enforcement of policies remains challenging. RISE provides a record of the legislation, policies, and strategies prevailing in a country over a specified timeline. As policies and regulations may exist without being enforced, a country's RISE score reflects laws that have been enacted, without making a judgment on whether they are being implemented. RISE cannot fully capture the quality of policies and regulations, which is highly context-specific and may produce subjective assessments. Some policies may not be completely relevant for all countries given country-specific strategies and political choices. One example is electrification strategies, where some countries have elected to rely only on publicly owned service providers or on grid expansion.

Cross-pillar comparisons must be nuanced. The indicators included under the four pillars yield a holistic view of the state of regulation and policy making within each pillar. Comparing results across pillars reveals differences in the relative maturity of, say, energy access versus clean cooking or renewable energy versus energy efficiency.

The RISE score is not the only precursor or indicator of SDG 7 progress or investment. RISE is intended to provide a record of laws, regulations, and policies that countries enact to support sustainable energy. The policy environment alone is insufficient, however, to attract investment or ensure progress toward SDG 7. It must be backed by strong institutions, open markets, access to finance, an open flow of information, and a strong private sector. Nevertheless, RISE can help explain trends in sustainable energy investment and SDG 7 outcomes.

Except where otherwise noted, the figures in this report are based on RISE project data.

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4 The 5 countries added are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, and North Macedonia.

5 The 55 countries in the RISE clean cooking pillar are made up of 54 countries in the RISE electricity access pillar, plus China. For access-deficit countries, the overall country scores are the average of the scores for electricity access, clean cooking, renewable energy and energy efficiency

DEVELOPMENTS SINCE RISE 2018

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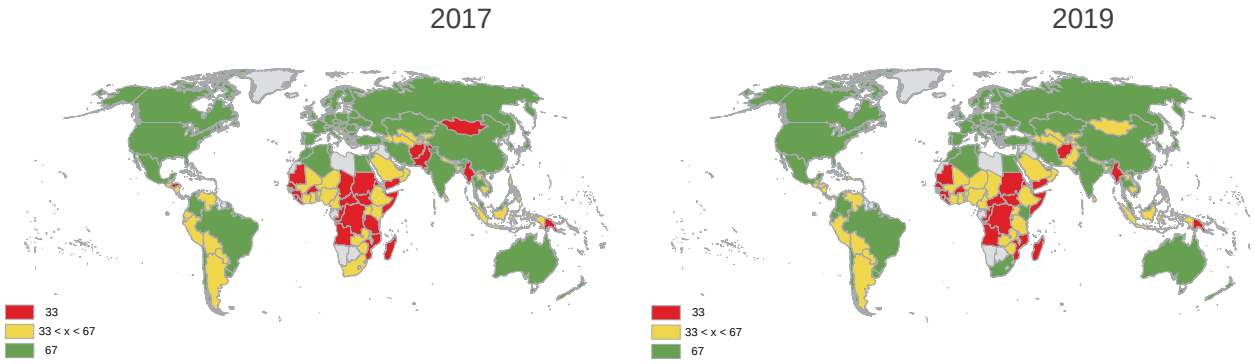
DEVELOPMENTS SINCE RISE 2018

Since RISE 2018, the number of countries with advanced policy frameworks for sustainable energy has grown at a good pace. In 2017, 57 countries had built advanced policy frameworks for sustainable energy into their regulator systems. By 2019, 65 countries had done so, including many emerging and developing countries such as South A Ecuador, Jamaica, and Kenya.

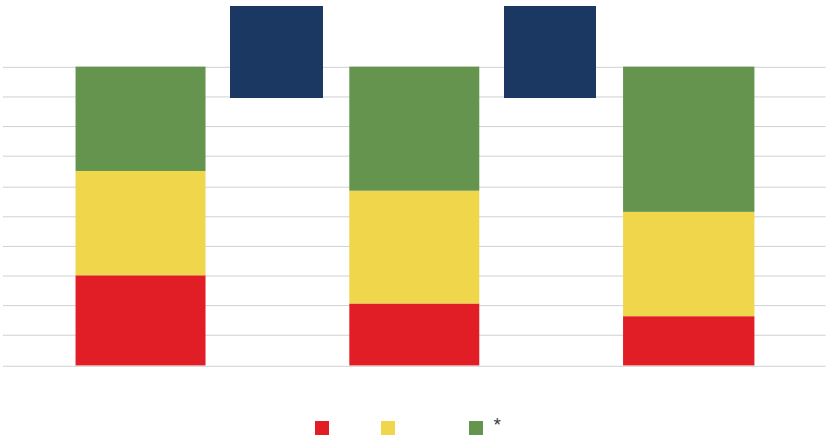
FIGURE 1. EVOLUTION OF RISE SCORES WORLDWIDE, 2017 VS. 2019



Source: World Bank, RISE 2020.

But the pace of improvement from 2017 to 2019 was slower than that from 2015 to 2017. Compared with RISE 2018, the global average score has improved almost two points per year, whereas in the previous period annual average gro was around three points per year (gure 2). Nonetheless, from 2017 to 2019 the number of countries with advanc (green) policy frameworks rose from 41 to 49 percent, while the share of countries with undeveloped (red) policy fra works fell from 21 to 17 percent. In 2019, 24 countries were still in the early stages of building a sound policy environm

FIGURE 2. GLOBAL PROGRESS ON REGULATION RELATED TO SUSTAINABLE ENERGY, WITH PACE OF GROWTH, 2 2017 19

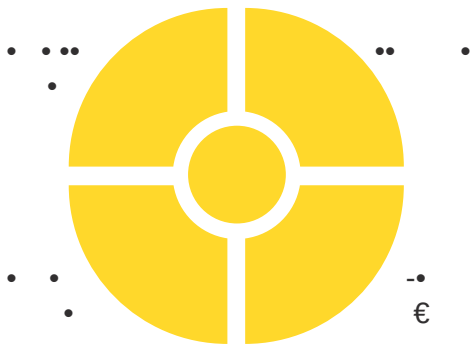


Source: World Bank, RISE 2020.

Policy frameworks for clean energy policies (both energy e ciency and renewable energy) improved more slowly than those for the other pillars over the period 2017–19. The annual rate of improvement in the global average score for energy e ciency improved by only 1.6 points per year between 2017 and 2019, compared with an annual rise of points between 2015 and 2017. Yearly improvement in renewable energy policies slowed from the pace recorded du the 2015–17 period, dropping to 2.5 points annually over 2017–19. Standards for heating and cooling were among fastest growing policies in both the renewable and e ciency pillars. Meanwhile, building codes that embraced policie on carbon pricing, energy e ciency, and monitoring of renewable energy use slowed in 2017–19. Clean cooking al slackened, moving from annual growth of 3.2 points per year in the 2015–17 period to 2.8 points in 2017–19. The en access pillar showed the greatest increases in policy quality, with an annual rate of improvement of 5 points per yea the 2017–19 period compared with 4 points per year for 2015–17.

Across all dimensions of sustainable energy, average global scores suggest considerable scope to improve policy and regulatory frameworks. As noted, the overall RISE score re ects performance on four pillars of sustainable energy: access to electricity; access to clean cooking; renewable energy; and energy e ciency. As of 2019, the global avera score did not exceed 60 in any of these areas, indicating an intermediate (yellow) level of performance in all cas (gure 3).

FIGURE 3 GLOBAL AVERAGE RISE SCORE FOR EACH PILLAR AND ACROSS ALL PILLARS, 2019



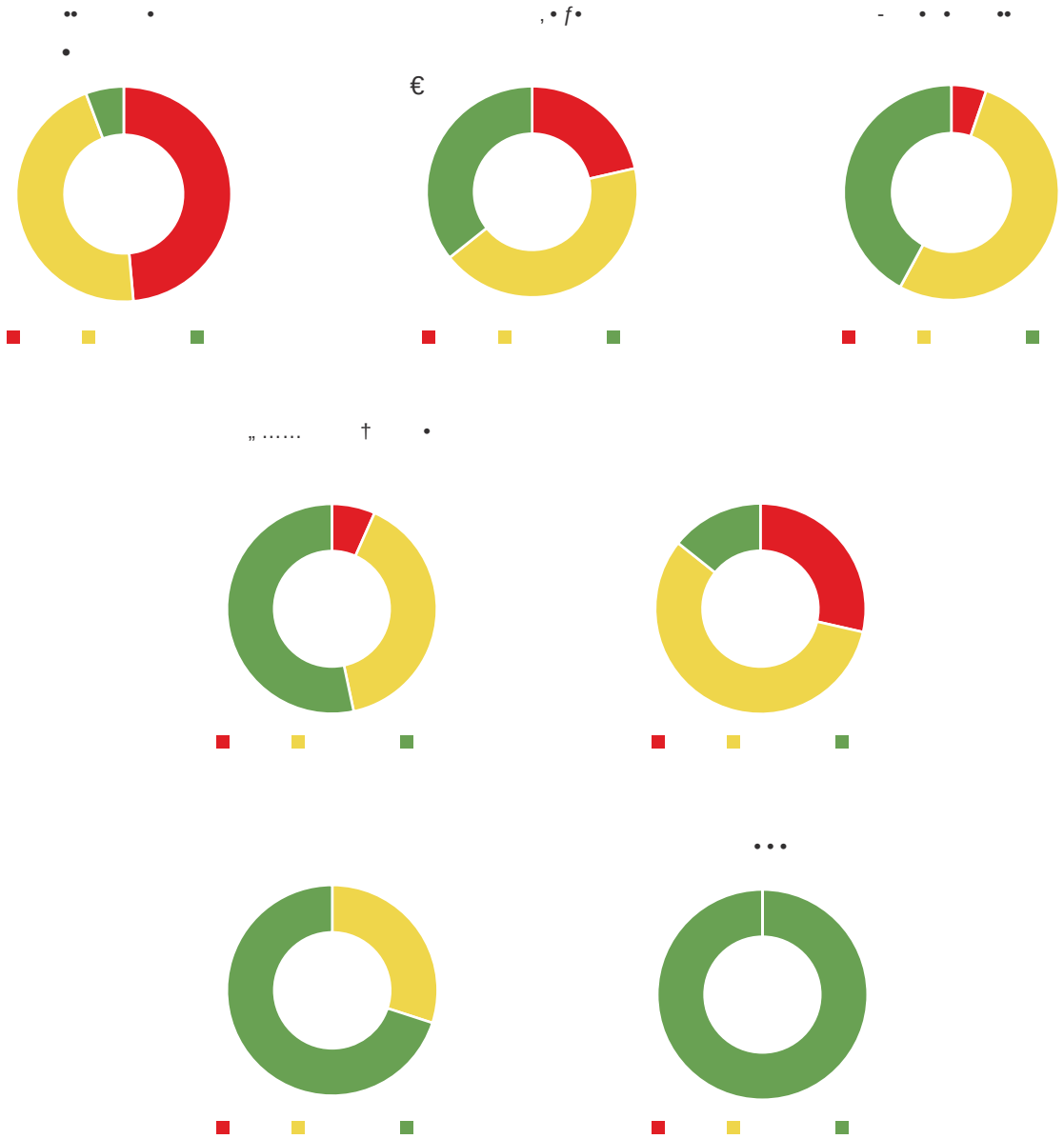
Source: World Bank, RISE 2020.

Note: Global scores for electricity access and clean cooking re ect the average scores for the access-de cit countries as identi ed in IEA, IRENA, UNSD, World Ban WHO (2020)

If the world continues to improve at the pace of growth achieved between 2017 and 2019, the average global RISE score will not reach the green zone until 2025. Given that SDG 7 expresses global commitments to be achieved by 2030, this rate of progress will not be enough to reach the 2030 target. Moreover, the challenges—and opportunities— policy makers will only grow, given the rapid rate of technological progress in sustainable energy. Policies beyond th considered here will need to be put in place to cover emerging areas such as battery storage, digitalization of netwo and other innovations. Policies are often a prerequisite for other actions to follow; if the full suite of policy measures not in place until 2025, this will leave little time to make progress toward global targets by 2030. The COVID-19 pande confronts energy policy makers with opportunities to support a low-carbon recovery and to reorient longer-term ene strategies and align energy policies with SDG 7 targets over the next decade.

All country groupings saw advances in comprehensive policy and regulatory frameworks in the 2017–19 period, but progress was uneven. At the regional level, OECD countries have led in building robust policy and regulation frame works for sustainable energy, and almost all of them have achieved advanced (green) policy frameworks (gure 4). At other extreme, in Sub-Saharan Africa around half of all countries have undeveloped (red) policy frameworks. On ov policy development, two regions (Sub-Saharan Africa and Latin America and the Caribbean) made the greatest prog between 2017 and 2019, adding Costa Rica, Ecuador, Jamaica, Kenya, and South Africa to the green-zone countries end of the period.

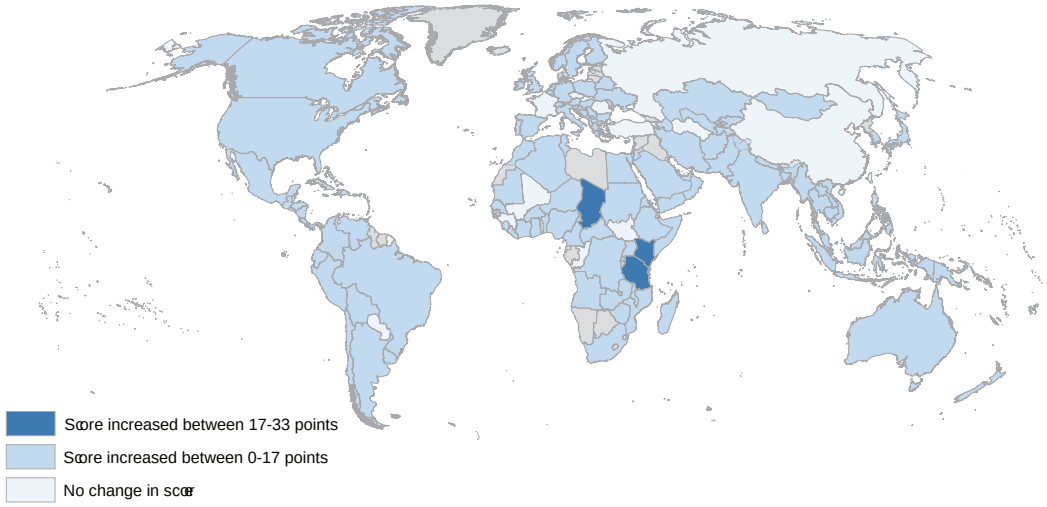
FIGURE 4 DISTRIBUTION OF RISE SCORES BY WORLD REGION, 2019



Source: World Bank, RISE 2020.

The countries improving most rapidly over 2017–19 are concentrated in Sub-Saharan Africa. Most countries in the region saw their RISE scores increase between 2017 and 2019, though at di ering rates (gure 5). Of the world's top fastest improving countries, nine were in Sub-Saharan Africa. As the fastest improving countries globally, Kenya, Tanz and Chad increased their RISE scores by more than nine points per year on average from 2017 to 2019. The increas driven mainly by two pillars (energy access and renewable energy), with Kenya's score driven mainly by its rising en access and energy e ciency scores; Tanzania's improvement stems solely from the spike in its renewable energy sco

FIGURE 5. THE EVOLUTION OF OVERALL RISE SCORES, 2017–19



Source: World Bank, RISE 2020.

Good policies will not deliver SDG 7 targets without consistent enforcement. Reforms are adopted on paper, but they often lack an enforcement body and mechanisms for implementation and compliance. RISE collects objective evide that a policy is in place. But the RISE methodology does not allow for eld veri cation to ensure that the policy is bei enforced. The Global Electricity Regulatory Index (GERI) complements the RISE database with de jure and de facto d the structure and functioning of regulatory agencies (box 1).

BOX 1GLOBAL ELECTRICITY REGULATORY INDEX GERI

The African Development Bank (AfDB) and the World Bank are collaborating to create the rst global index of regulato frameworks in the power sector. The Global Electricity Regulatory Index (GERI) is based on the AfDB's Electricity Regula Index, launched in 2018, and a complementary index the World Bank developed in the same time period (Foster and Ra 2020).

By measuring the adoption of regulatory best practices, GERI enables countries to Identify gaps in their regulatory fram work and benchmark their performance against global peers. The index has two components: regulatory governance ar regulatory substance.

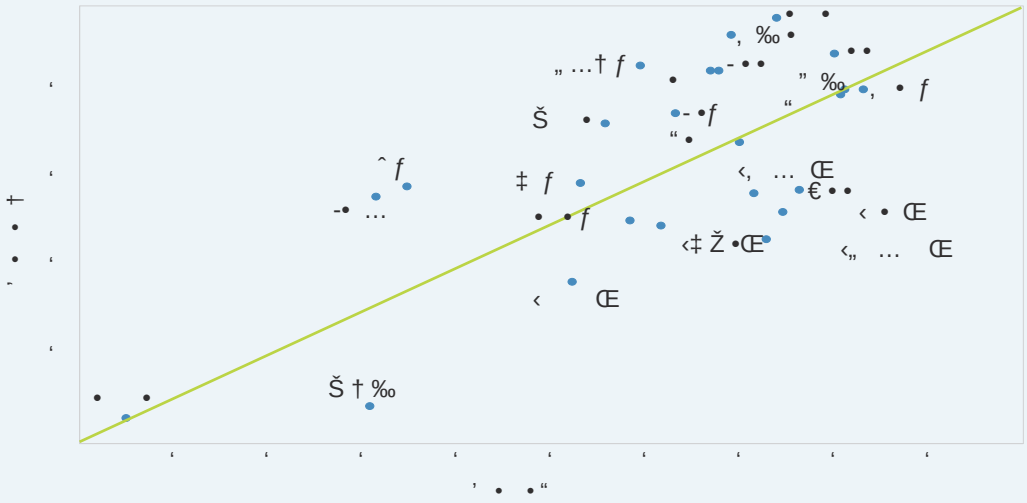
The regulatory governance component examines the institutional arrangement of each country's regulatory regime to see whether it embodies best-practice design. Indicators include legal mandate, clarity of role, independence, accountabilit transparency, predictability, stakeholder participation, and open access to information.

The regulatory substance component focuses on the actual content of regulation. Its major indicators are tari setting methodology, quality of service, licensing framework, and institutional regulatory capacity.

For 2020, as the AfDB collected data on 36 African countries, the World Bank conducted a pilot study of 20 countries spre across other regions. In the next RISE cycle, data collection will be extended to all RISE countries outside Africa while AfDB continues to cover the African continent annually.

Although the data collected for the pilot countries are still being analyzed, signi cant results have already emerged. Wher as the countries of East Asia and the Paci c have the lowest average score on governance (55 percent), they score t highest on substance (73 percent). More detailed results can be found in AfDB and World Bank 2020.

FIGURE B1.1 COUNTRY SCORES ON GERI: HIGHER ON FORM THAN SUBSTANCE



Source: GERI Pilot 2020, based on preliminary analysis

Utilities are central to the power sector and play a crucial role in the promotion of the sustainable energy agen da. Financially healthy and creditworthy utilities are better able to attract nancing and invest resources. As of 201 however, power distribution utilities in just 45 percent of the world's countries met basic creditworthiness requiremen (gure 6), showing a marginal decline from 2016, when those in half of countries were creditworthy. The situation is m dire in countries that have yet to electrify their entire population. There, distribution utilities were generally creditwort in just over a fth of countries in 2018 (gure 7), down from a third in 2016. This is of great concern because utilities access-de cit countries shoulder the responsibility for expanding access and providing quality supply. Even in count with universal access, where utilities are the main o -takers of renewable energy and principal implementers of ener e ciency programs, utilities in 20 percent of countries su er from poor creditworthiness (gure 8).

FIGURE 6 UTILITY CREDITWORTHINESS, GLOBAL, 2018

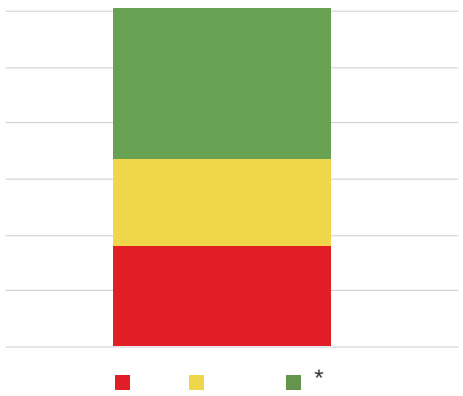


FIGURE 7 UTILITY CREDITWORTHINESS, ACCESS DEFICIT COUNTRIES, 2018

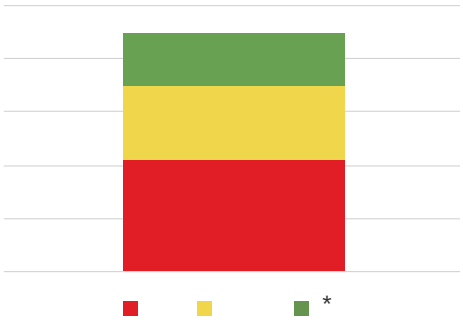
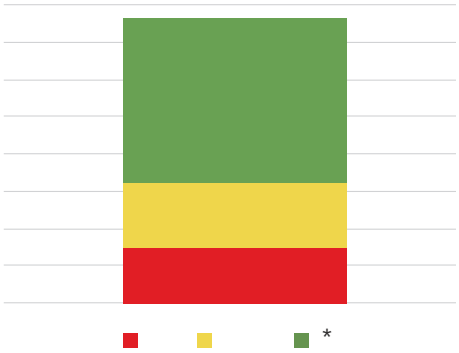


FIGURE 8 UTILITY CREDITWORTHINESS, NON ACCESS DEFICIT COUNTRIES, 2018

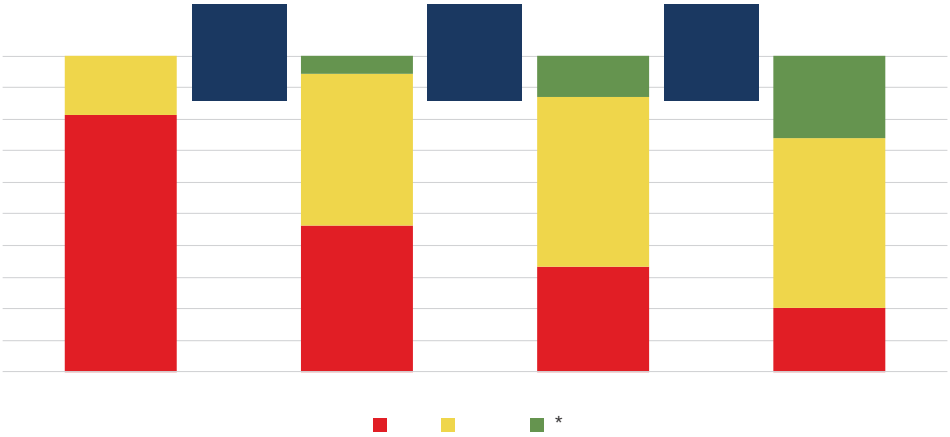


Source: World Bank, RISE 2020.

ELECTRICITY ACCESS:
MAJOR PROGRESS OVER THE PAST TWO YEA

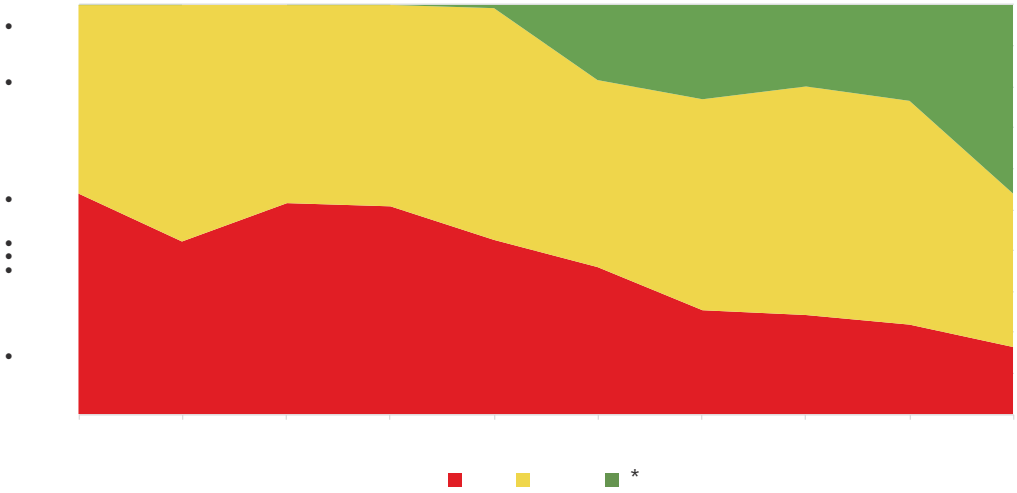
Electri cation policies have advanced since 2010, with the advance quickening after 2017. Since 2017, more than 10 percent of the access-de cit countries moved into the green zone. Between 2017 and 2019, 13 percent improved access-related regulations enough to move from the red zone to the yellow zone, leaving 20 percent of the access-de countries without the basic set of policies needed to accelerate electri cation (gure 9). Notable is the steady progre of Nigeria and several other countries with large access de cits. However, more than half the global population lacki access to electricity remained in countries with weak regulatory frameworks at the end of 2019 (gure 10).

FIGURE 9 ELECTRICITY ACCESS: EVOLUTION OF RISE SCORES FOR PILLAR, 2010 19



Source: World Bank, RISE 2020.

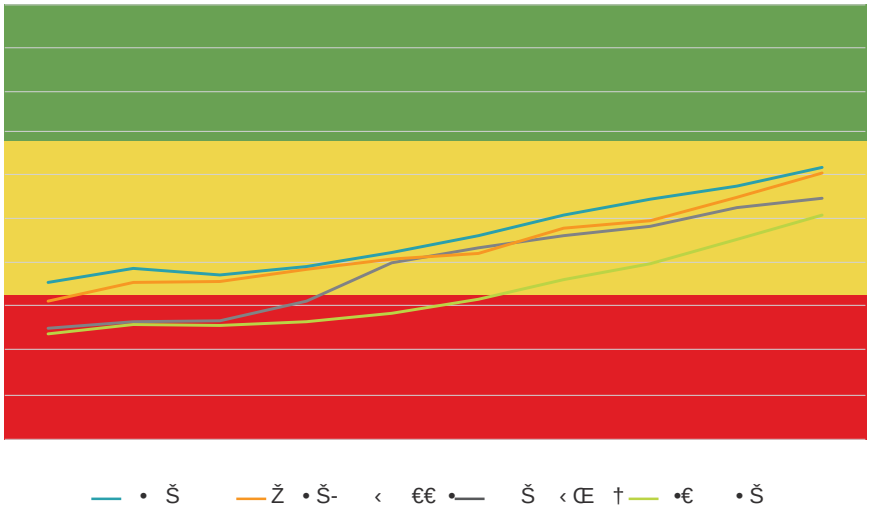
FIGURE 10 ELECTRICITY ACCESS: RISE PILLAR SCORE WEIGHTED BY POPULATION WITHOUT ACCESS, 2010 19



Source: World Bank, RISE 2020.

Although all regions have improved their policies and regulations on electricity access, progress has been uneven. Progress in Sub-Saharan Africa is the most mixed. As of 2019, South Africa and Tanzania had some of the region's advanced policy frameworks for electricity access, pulling up the region's average score. The South Asia region rem the highest scoring region, while the East Asia and Paci c region made the greatest improvement between 2010 and 2 (gure 11). Bangladesh retained the most comprehensive enabling environment over the period, both in designing implementing e ective electricity access policies.

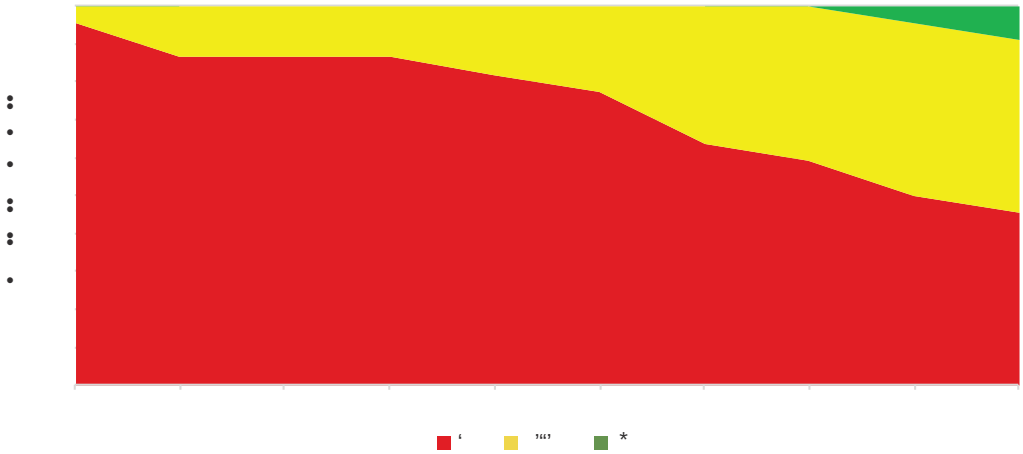
FIGURE 11. ELECTRICITY ACCESS: EVOLUTION OF RISE SCORE BY REGION[6], 2010 19



Source: World Bank, RISE 2020.

Some progress has been observed in fragile and con ict-a ected settings[7]. In 2010, policy frameworks were poor in 95 percent of the countries characterized by fragility, con ict, and violence. This gure was halved by 2019, with 5 percent of fragile countries making strides toward adopting electricity regulations and moving out of the red zone (gu 12). Sudan and Niger progressed after 2017 on their electricity access policies, especially for mini grids and standa systems. A trend for fragile regions is that electri cation planning and frameworks for grid electri cation have becom lagging indicators (gure 13). In 2019, Nigeria, Cameroon, and Myanmar led in adopting electricity access policies.

FIGURE 12. ELECTRICITY ACCESS: THE EVOLUTION OF THE RISE PILLAR SCORE FOR COUNTRIES MARKED BY FR CONFLICT, AND VIOLENCE, 2010 19

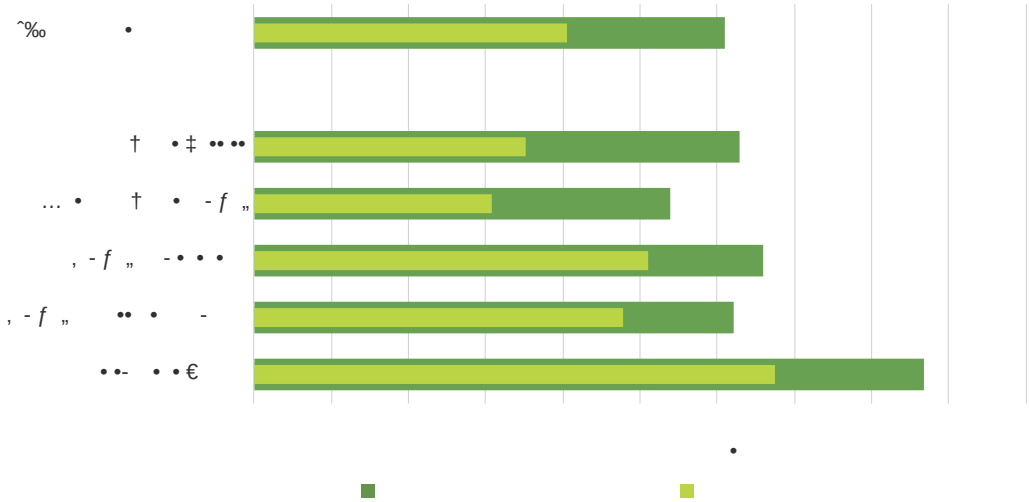


Source: World Bank, RISE 2020.

6 MENA region is not displayed because Yemen is the only country from the region included in the electricity access country list for RISE 2020. In the zone, Yemen has a score of 21 for this edition of RISE.

7 Out of 54 countries surveyed for electricity access, 22 were countries characterized by fragility, con ict, and violence; they are home to 33 percent o the global population without access (263 million people).

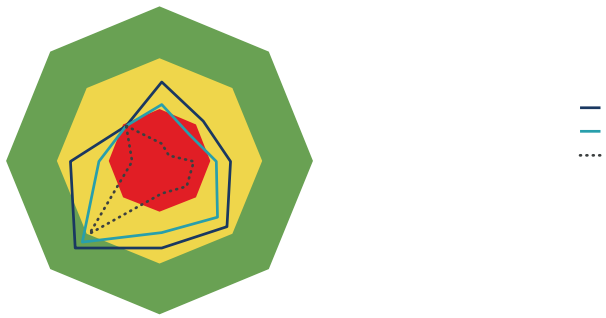
FIGURE 13 ELECTRICITY ACCESS: RISE SCORES FOR FCV AND NON FCV COUNTRIES, BY INDICATOR, 2019



Source: World Bank, RISE 2020. Note: FCV = fragility, con ict, and violence.

Frameworks for mini grids and standalone systems have enjoyed fast-increasing policy support across countries, attesting to growing understanding of their potential to accelerate electricity access. Despite continuous progress, electri cation planning and scope (that is, targeted service, inclusion, and electri cation of productive uses and pub facilities) have still not reached the green zone (gure 14), although they have become the needed rst step for the des of e cient strategies. Grid electri cation frameworks have been steadily improving as well, but at a slightly slower pac Since 2010, a ordability has improved consistently and rapidly, a trend that re ects progress on implementing strategi that target the poorest populations without access.[8] Improvements in utility creditworthiness, by contrast, have lagged since 2010.

FIGURE 14 ELECTRICITY ACCESS: GLOBAL PROGRESS ON PILLAR, BY INDICATOR, 2010, 2017, AND 2019

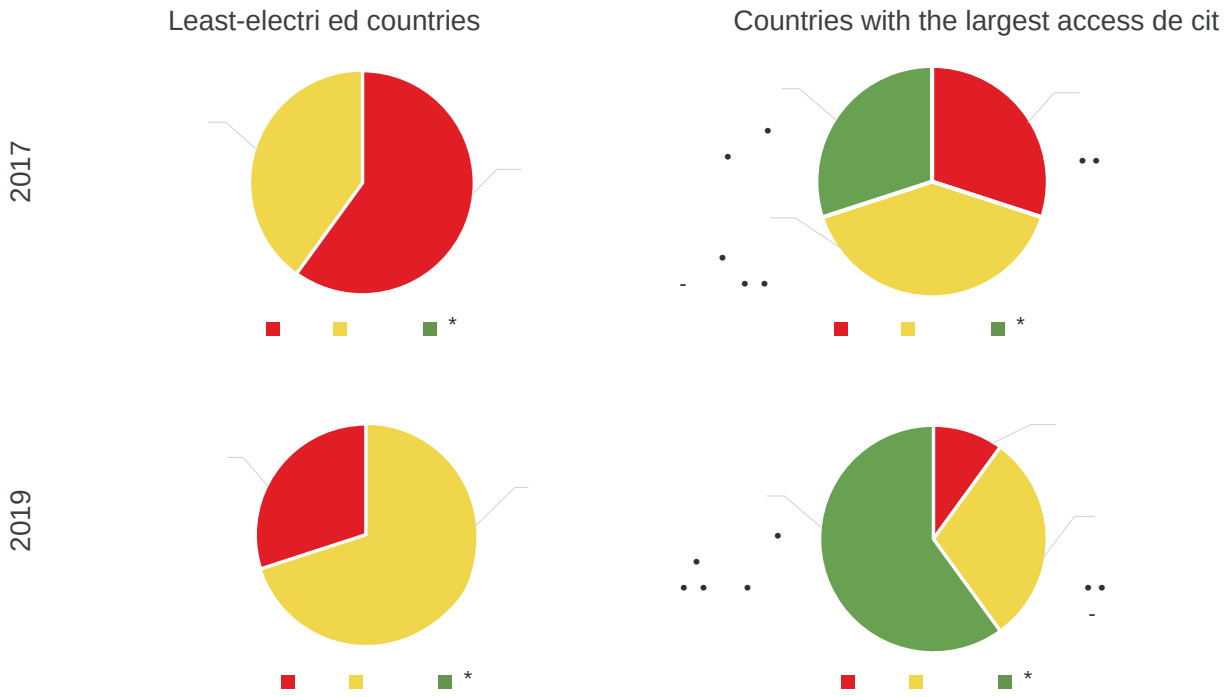


Source: World Bank, RISE 2020.

8 Consumer a ordability is evaluated based on a combination of three measures: (i) the a ordability of subsistence consumption (meaning that the cost of a minimal consumption of 30 kilowatt-hours per month is less than 5 percent of the gross household monthly income of the poorest 40 percent of t population); (ii) the a ordability of connection fees (meaning that the upfront cost of connection is below the gross average monthly household income of t bottom 40 percent of the population); and (iii) the existence of a lifeline tari .

Among countries with the highest access de cits, Ethiopia, Nigeria, and Tanzania have made the most progress in adopting corrective policies since 2017 (gure 15). Among these countries, the greatest improvements are in frame works for mini grids, consumer a ordability, and utility transparency.

FIGURE 15. ELECTRICITY ACCESS: RISE PILLAR SCORES FOR TOP 10 ACCESS DEFICIT COUNTRIES AND 10 LEAS COUNTRIES, 2017 AND 2019



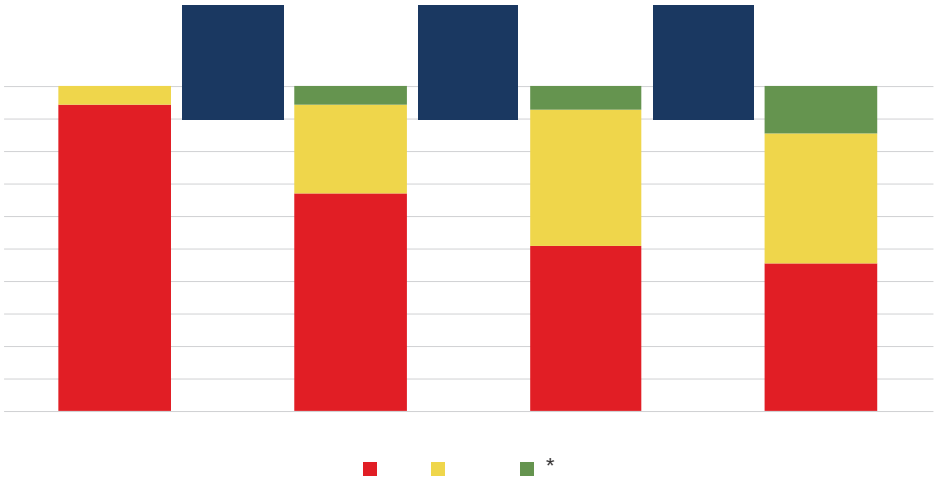
Source: World Bank, RISE 2020.

Note: The least-electri ed countries are Burkina Faso, Burundi, Chad, the Democratic Republic of Congo (DRC), Liberia, Madagascar, M Niger, Sierra Leone, and South Sudan. The countries with largest access de cit are Bangladesh, the Democratic Republic of Congo (DR Ethiopia, India, Madagascar, Mozambique, Nigeria, Pakistan, Tanzania, and Uganda. See IEA, IRENA, UNSD, World Bank, and WHO (2

CLEAN COOKING:
STEADY PROGRESS SINCE 2010

Of the four pillars of sustainable energy, clean cooking is the most often overlooked when it comes to policy mak ing. Yet RISE scores have improved consistently across the 55 countries reporting on de cits in access to clean cook since 2010 (gure 16). The number of countries with advanced policy frameworks rose from zero in 2010 to eight in 2 moving 15 percent of access-de cit countries into the green zone on the RISE index. Of the remainder, 22 countries n moderate progress; in 25, the policy apparatus remains nascent.

FIGURE 16. CLEAN COOKING: PROGRESS IN RISE SCORE FOR PILLAR, 2010 19



Source: World Bank, RISE 2020.

Less than a quarter of the access-de cit countries, but half of the population without access to clean cooking have advanced policy frameworks for clean cooking. Although only eight of these countries are in the green zone; of them, China, Ethiopia, India, Indonesia, and Kenya made particularly great strides in clean cooking policy-making. These c tries are home to 1.4 billion people who lack access, more than half the global population in that situation (gures 17,

FIGURE 17. CLEAN COOKING: RISE SCORE, 2010 19

FIGURE 18. CLEAN COOKING: RISE SCORE WEIGHTED BY POPULATION WITHOUT ACCESS, 2010 19

Source: World Bank, RISE 2020.