

RISE 2020
REGULATORY INDICATORS
FOR SUSTAINABLE ENERGY



SUSTAINING
THE MOMENTUM



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country financing and policy dialogue in the energy sector. Through the World Bank Group (WBG), ESMAP works to accelerate the energy transition required to achieve [Sustainable Development Goal 7 \(SDG7\)](#) to ensure access to affordable, reliable, sustainable and modern energy for all. It helps to shape WBG strategies and programs to achieve the [WBG Climate Change Action Plan](#) targets.

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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 electricity¹, renewable energy, and energy efficiency pillars (the clean cooking pillar is only scored for 55 access-deficit countries²). 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 policy makers 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 into 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 figure below.

FIGURE A. RISE'S PILLARS AND INDICATORS

Pillar	Indicators			
ELECTRICITY ACCESS	<ul style="list-style-type: none"> • Electrification plan • Grid electrification framework 	<ul style="list-style-type: none"> • Framework for standalone systems • Utility transparency and monitoring 	<ul style="list-style-type: none"> • Scope of the electrification plan • Framework for mini grids 	<ul style="list-style-type: none"> • Consumer affordability • Utility creditworthiness
CLEAN COOKING	<ul style="list-style-type: none"> • Planning 	<ul style="list-style-type: none"> • Scope of planning 	<ul style="list-style-type: none"> • Standards and labeling 	<ul style="list-style-type: none"> • Incentives for clean cooking solutions
RENEWABLE ENERGY	<ul style="list-style-type: none"> • Legal framework for renewable energy • Incentives and regulatory support for renewable energy 	<ul style="list-style-type: none"> • Network connection and use • Carbon pricing and monitoring 	<ul style="list-style-type: none"> • Planning for renewable energy expansion • Attributes of financial and regulatory incentives 	<ul style="list-style-type: none"> • Counterparty risk
ENERGY EFFICIENCY	<ul style="list-style-type: none"> • National energy efficiency planning • Incentives and mandates: Public sector • Minimum energy performance standards 	<ul style="list-style-type: none"> • Transport sector • Energy efficiency entities • Incentives and mandates: Utilities 	<ul style="list-style-type: none"> • Energy labeling system • Carbon pricing and monitoring • Incentives and mandates: Industrial and commercial end users 	<ul style="list-style-type: none"> • Financing mechanisms for energy efficiency • Building energy codes

Source: World Bank RISE 2018



INTRODUCTION

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 efficiency 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 electrification has brought significant policy improvements since 2010, **most countries with deficits 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 electrification. Income levels have affected electrification policy efforts, 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 deficits 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 undeveloped since 2010, with 50 percent of the surveyed countries still not having policies in place in 2019.
- **Historically, energy efficiency 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 efficiency.

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 efficiency and the use of renewable energy while expanding access to electricity and clean cooking fuels. Marshalling policy data from well before the onset of the COVID-19 pandemic through December 2019, RISE 2020 reviews what governments have done to create an enabling environment for sustainable energy.

The economic crisis brought on by the pandemic is affecting 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 specific policies that are straining the energy industry and threatening access to energy just when it is needed most. With an additional 150 million people projected to be pushed into extreme poverty by 2021, the expected impact of COVID-19 on poverty decreases the chances of meeting the access targets of Sustainable Development Goal 7 on universal access to modern forms of energy (World Bank 2020a). In many countries where utilities were already under financial duress, the COVID-19 crisis has 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 difficult financing conditions have constrained the development of capital-intensive clean energy solutions.

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

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

Countries must not lose sight of the need to invest in clean energy, which would create jobs across sectors, boost economic 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 financial incentives for private investments in clean energy and digitalization, will be critical. The returns to such support would likely be immense. A large-scale shift toward electrification fueled by renewables between now and 2050, accompanied by a ramping up of energy efficiency, could more than triple global employment in renewable energy—from 12 million jobs in 2017 to 42 million by 2050. Solar photovoltaic (PV) technology, coupled with energy efficient buildings, appliances, and industrial processes, creates the most jobs per dollar of investment—up to 15 jobs per million (Ferroukhi, Casals, and Parajuli 2020). Options for governments to promote such investment include tax deductions, guaranteed lending, rebates, cash-for-replacement schemes, incentives for energy management systems, and programs for training and hiring energy managers (IEA 2020b).

The pandemic also constitutes a mandate for clean cooking solutions—the benefits 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 fires, may significantly sharpen the risk of dying from COVID-19 complications. It is therefore more important than ever to make clean cooking a policy and investment priority, especially in low-income countries.

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

THE RISE METHODOLOGY

RISE's geographic coverage has expanded from 133 countries in 2018 to 138 in 2020⁴. 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. Deficits in access to clean cooking, the most overlooked part of the sustainable energy agenda, affect 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 within 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.

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.

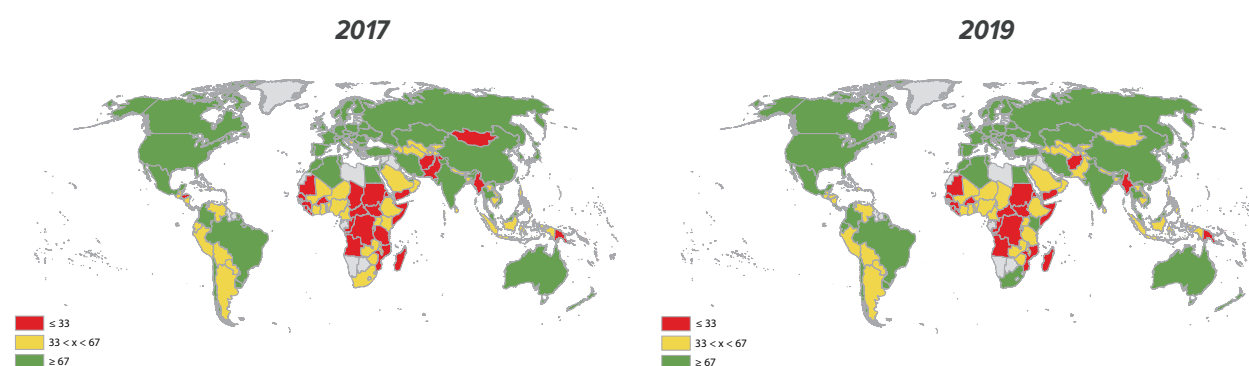


DEVELOPMENTS SINCE RISE 2018

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 regulatory systems. By 2019, 65 countries had done so, including many emerging and developing countries such as South Africa, Ecuador, Jamaica, and Kenya.

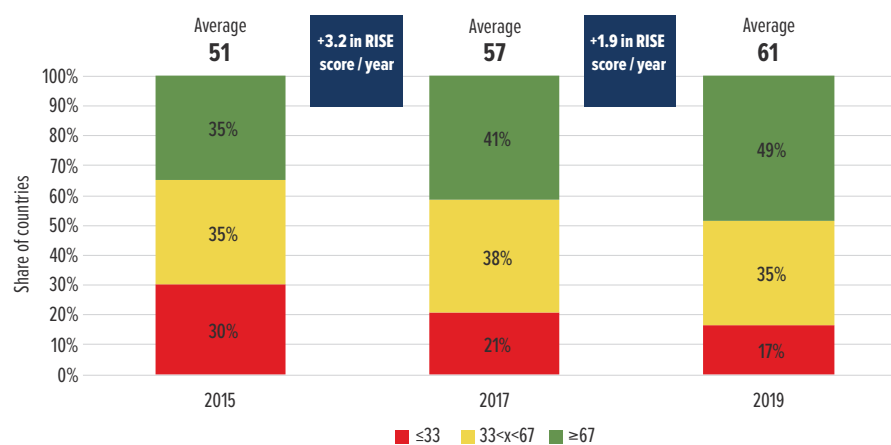
FIGURE 1. EVOLUTION OF RISE SCORES WORLDWIDE, 2017 VS. 2019



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 growth was around three points per year (figure 2). Nonetheless, from 2017 to 2019 the number of countries with advanced (green) policy frameworks rose from 41 to 49 percent, while the share of countries with undeveloped (red) policy frameworks fell from 21 to 17 percent. In 2019, 24 countries were still in the early stages of building a sound policy environment.

FIGURE 2. GLOBAL PROGRESS ON REGULATION RELATED TO SUSTAINABLE ENERGY, WITH PACE OF GROWTH, 2015–17 AND 2017–19

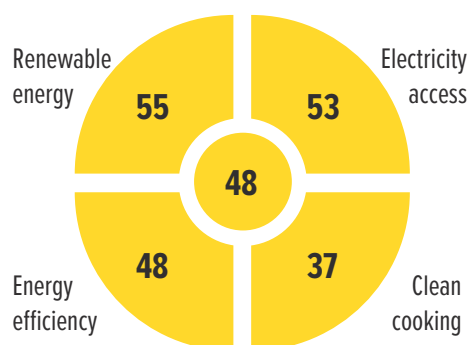


Source: World Bank, RISE 2020.

Policy frameworks for clean energy policies (both energy efficiency 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 efficiency improved by only 1.6 points per year between 2017 and 2019, compared with an annual rise of 3.6 points between 2015 and 2017. Yearly improvement in renewable energy policies slowed from the pace recorded during the 2015–17 period, dropping to 2.5 points annually over 2017–19. Standards for heating and cooling were among the fastest growing policies in both the renewable and efficiency pillars. Meanwhile, building codes that embraced policies on carbon pricing, energy efficiency, and monitoring of renewable energy use slowed in 2017–19. Clean cooking also slackened, moving from annual growth of 3.2 points per year in the 2015–17 period to 2.8 points in 2017–19. The energy access pillar showed the greatest increases in policy quality, with an annual rate of improvement of 5 points per year in 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 reflects performance on four pillars of sustainable energy: access to electricity; access to clean cooking; renewable energy; and energy efficiency. As of 2019, the global average score did not exceed 60 in any of these areas, indicating an intermediate (yellow) level of performance in all cases (figure 3).

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



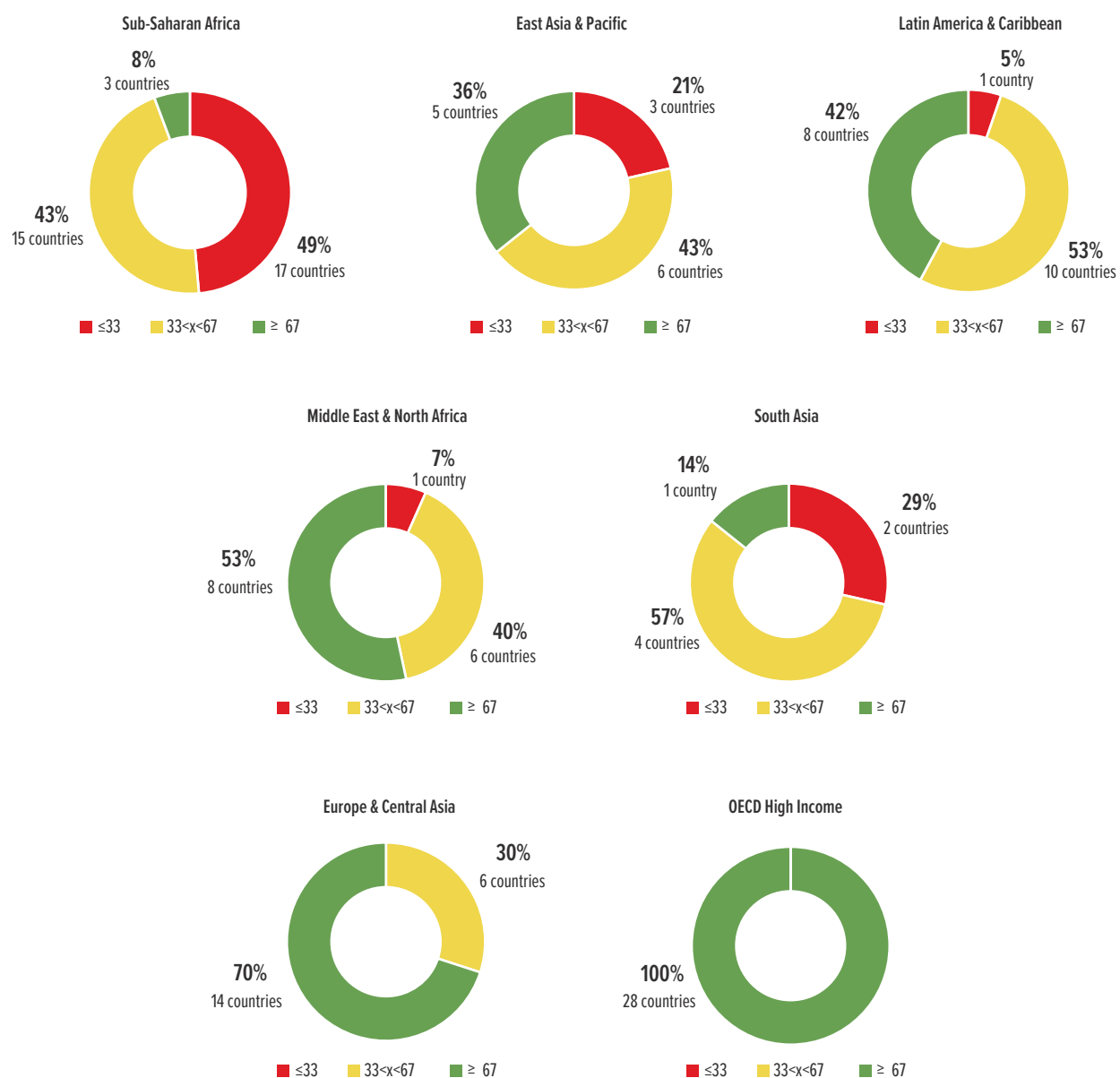
Source: World Bank, RISE 2020.

Note: Global scores for electricity access and clean cooking reflect the average scores for the access-deficit countries as identified in IEA, IRENA, UNSD, World Bank, and 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—for policy makers will only grow, given the rapid rate of technological progress in sustainable energy. Policies beyond those considered here will need to be put in place to cover emerging areas such as battery storage, digitalization of networks, and other innovations. Policies are often a prerequisite for other actions to follow; if the full suite of policy measures is not in place until 2025, this will leave little time to make progress toward global targets by 2030. The COVID-19 pandemic confronts energy policy makers with opportunities to support a low-carbon recovery and to reorient longer-term energy 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 frameworks for sustainable energy, and almost all of them have achieved advanced (green) policy frameworks (figure 4). At the other extreme, in Sub-Saharan Africa around half of all countries have undeveloped (red) policy frameworks. On overall policy development, two regions (Sub-Saharan Africa and Latin America and the Caribbean) made the greatest progress between 2017 and 2019, adding Costa Rica, Ecuador, Jamaica, Kenya, and South Africa to the green-zone countries by the end of the period.

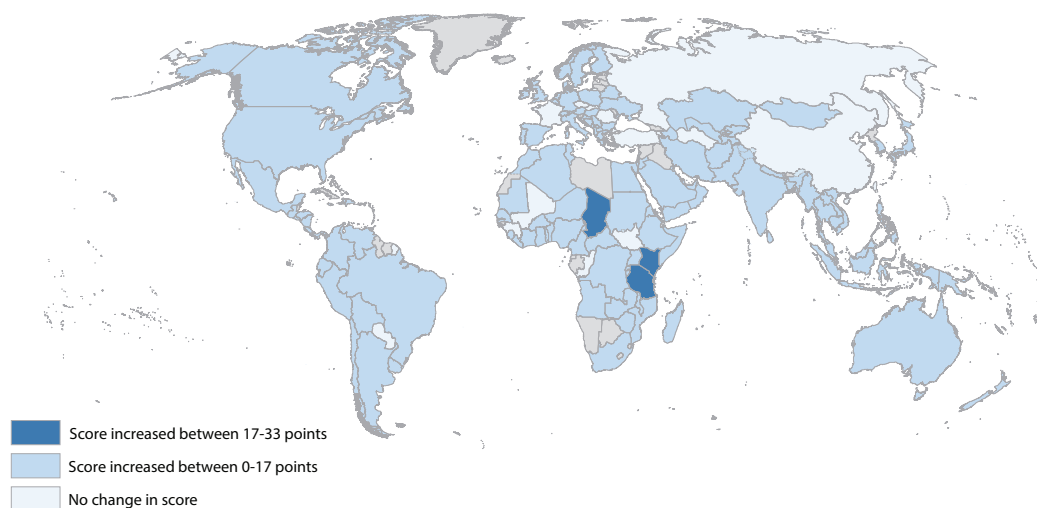
FIGURE 4. DISTRIBUTION OF RISE SCORES BY WORLD REGION, 2019



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 differing rates (figure 5). Of the world’s top ten fastest improving countries, nine were in Sub-Saharan Africa. As the fastest improving countries globally, Kenya, Tanzania, and Chad increased their RISE scores by more than nine points per year on average from 2017 to 2019. The increase was driven mainly by two pillars (energy access and renewable energy), with Kenya’s score driven mainly by its rising energy access and energy efficiency scores; Tanzania’s improvement stems solely from the spike in its renewable energy score.

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 evidence that a policy is in place. But the RISE methodology does not allow for field verification to ensure that the policy is being enforced. The Global Electricity Regulatory Index (GERI) complements the RISE database with de jure and de facto data on the structure and functioning of regulatory agencies (box 1).

BOX 1. GLOBAL ELECTRICITY REGULATORY INDEX (GERI)

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

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

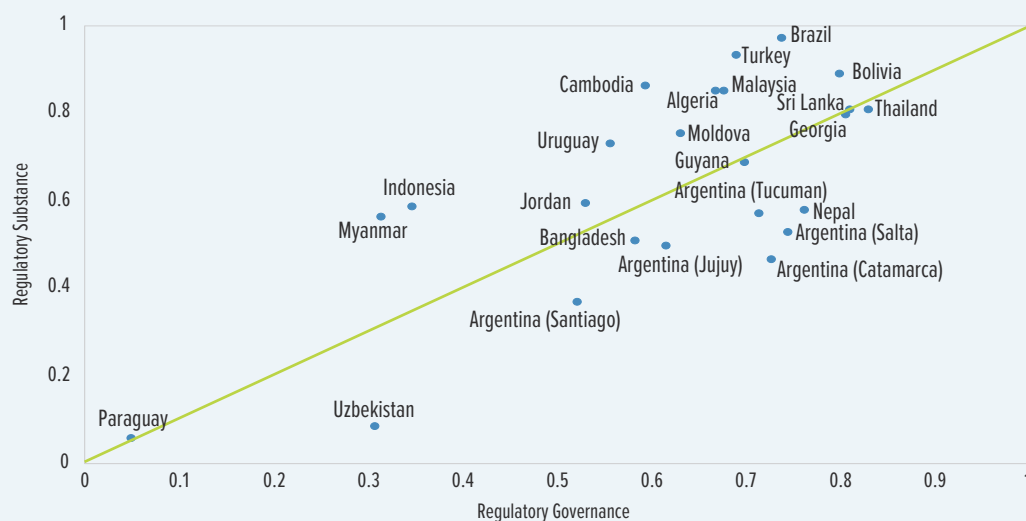
The *regulatory governance* component examines the institutional arrangement of each country's regulatory regime to see whether it embodies best-practice design. Indicators include legal mandate, clarity of role, independence, accountability, transparency, predictability, stakeholder participation, and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

The *regulatory substance* component focuses on the actual content of regulation. Its major indicators are tariff 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 spread across other regions. In the next RISE cycle, data collection will be extended to all RISE countries outside Africa while the AfDB continues to cover the African continent annually.

Although the data collected for the pilot countries are still being analyzed, significant results have already emerged. Whereas the countries of East Asia and the Pacific have the lowest average score on governance (55 percent), they score the 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 agenda. Financially healthy and creditworthy utilities are better able to attract financing and invest resources. As of 2018, however, power distribution utilities in just 45 percent of the world's countries met basic creditworthiness requirements (figure 6), showing a marginal decline from 2016, when those in half of countries were creditworthy. The situation is more dire in countries that have yet to electrify their entire population. There, distribution utilities were generally creditworthy in just over a fifth of countries in 2018 (figure 7), down from a third in 2016. This is of great concern because utilities in access-deficit countries shoulder the responsibility for expanding access and providing quality supply. Even in countries with universal access, where utilities are the main off-takers of renewable energy and principal implementers of energy efficiency programs, utilities in 20 percent of countries suffer from poor creditworthiness (figure 8).

FIGURE 6. UTILITY CREDITWORTHINESS, GLOBAL, 2018

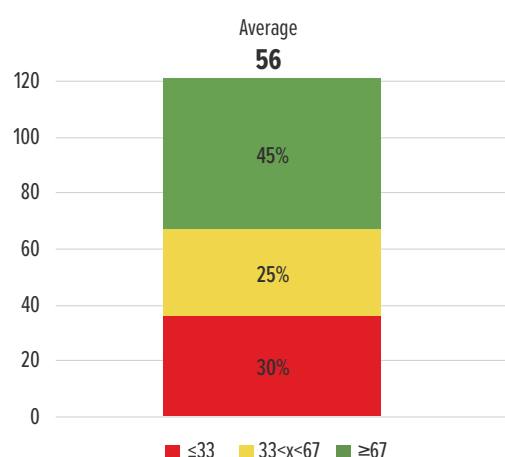


FIGURE 7. UTILITY CREDITWORTHINESS, ACCESS-DEFICIT COUNTRIES, 2018

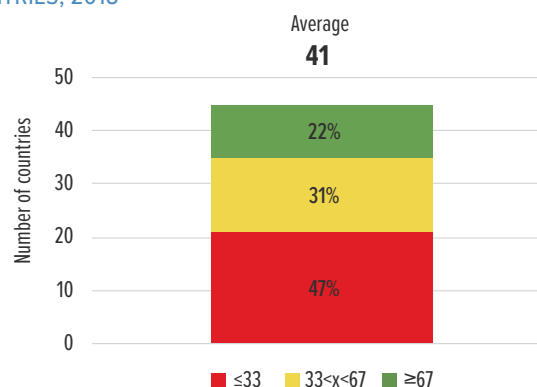
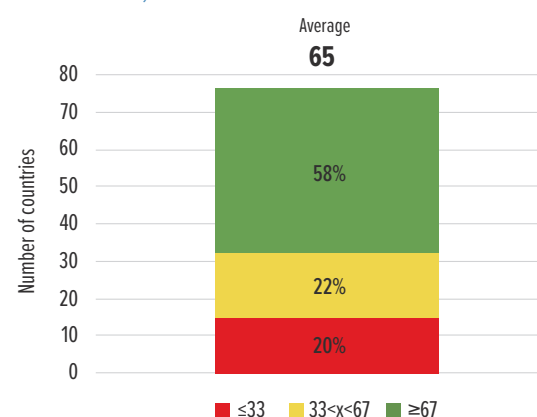


FIGURE 8. UTILITY CREDITWORTHINESS, NON-ACCESS-DEFICIT COUNTRIES, 2018

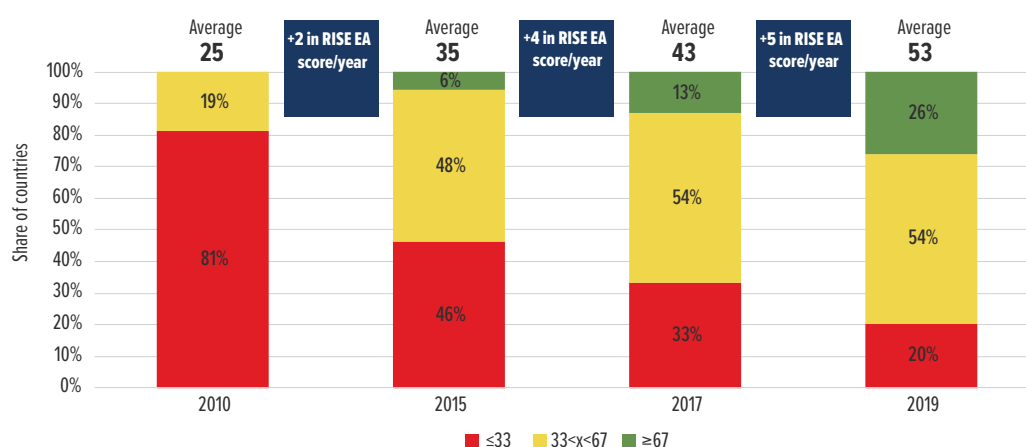


Source: World Bank, RISE 2020.

ELECTRICITY ACCESS: MAJOR PROGRESS OVER THE PAST TWO YEARS

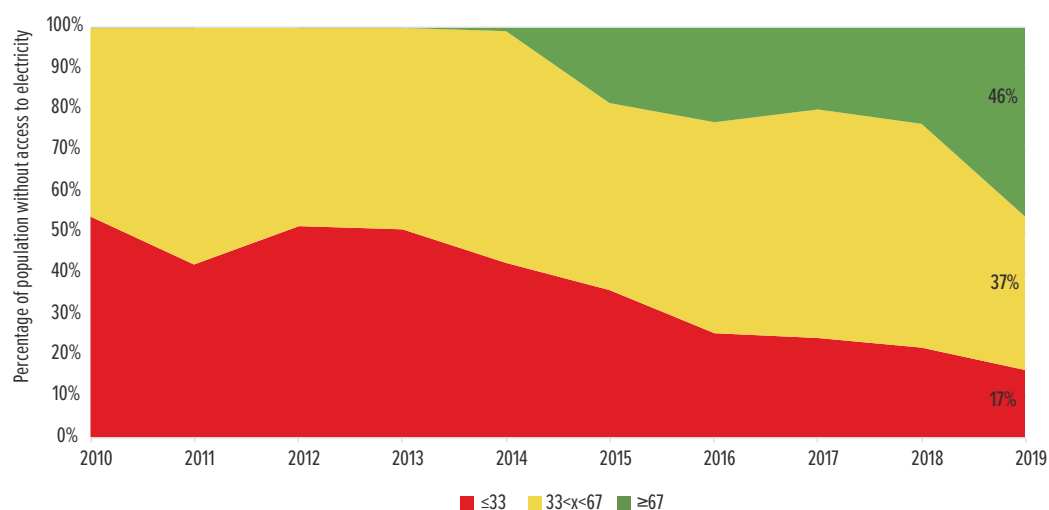
Electrification policies have advanced since 2010, with the advance quickening after 2017. Since 2017, more than 10 percent of the access-deficit countries moved into the green zone. Between 2017 and 2019, 13 percent improved their access-related regulations enough to move from the red zone to the yellow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

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



Source: World Bank, RISE 2020.

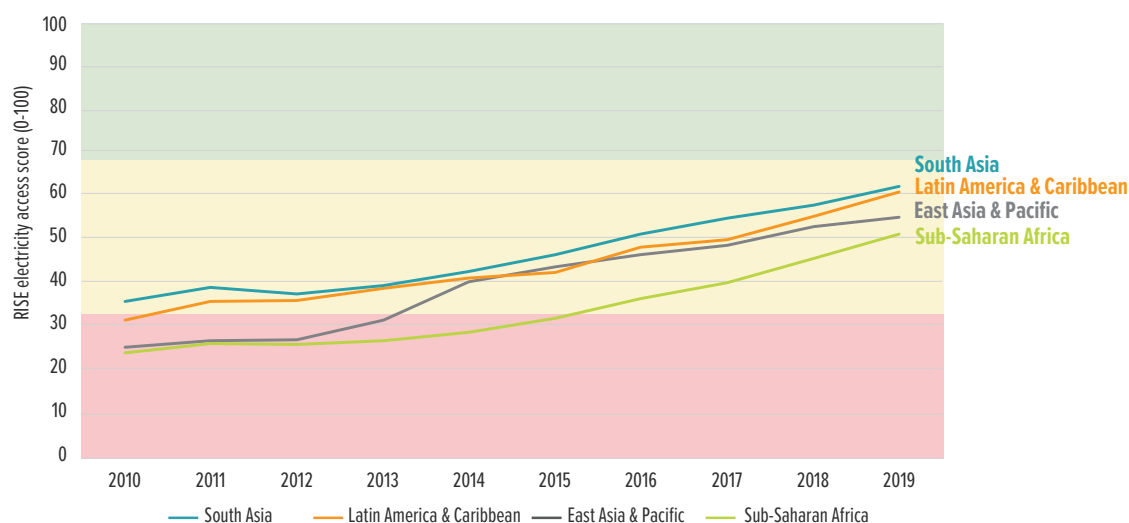
FIGURE 10. ELECTRICITY ACCESS: RISE PILLAR SCORE WEIGHTED BY POPULATION WITHOUT ACCESS, 2010–19



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 most advanced policy frameworks for electricity access, pulling up the region's average score. The South Asia region remains the highest scoring region, while the East Asia and Pacific region made the greatest improvement between 2010 and 2019 (figure 11). Bangladesh retained the most comprehensive enabling environment over the period, both in designing and implementing effective electricity access policies.

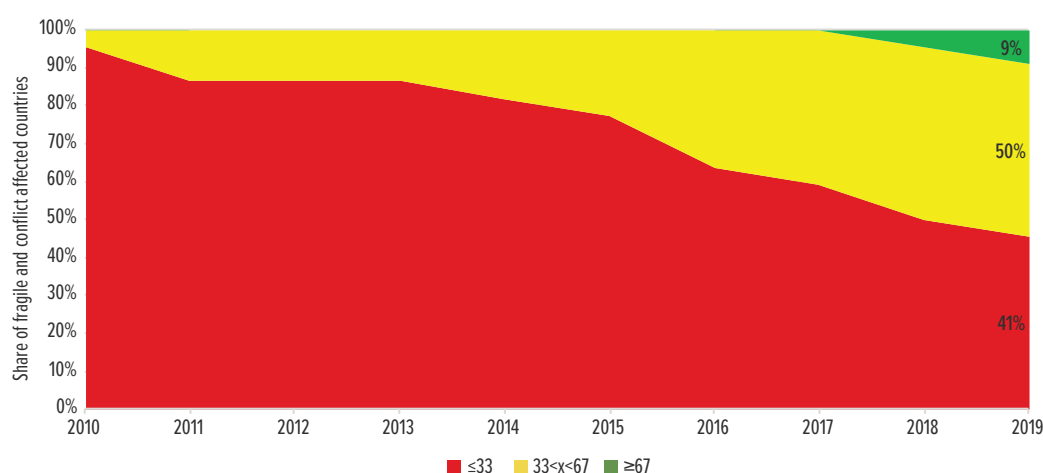
FIGURE 11. ELECTRICITY ACCESS: EVOLUTION OF RISE SCORE BY REGION, 2010–19 ⁶



Source: World Bank, RISE 2020.

Some progress has been observed in fragile and conflict-affected settings.⁷ In 2010, policy frameworks were poor in 95 percent of the countries characterized by fragility, conflict, and violence. This figure was halved by 2019, with 50 percent of fragile countries making strides toward adopting electricity regulations and moving out of the red zone (figure 12). Sudan and Niger progressed after 2017 on their electricity access policies, especially for mini grids and standalone systems. A trend for fragile regions is that electrification planning and frameworks for grid electrification have become lagging indicators (figure 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 FRAGILITY, CONFLICT, AND VIOLENCE, 2010–19

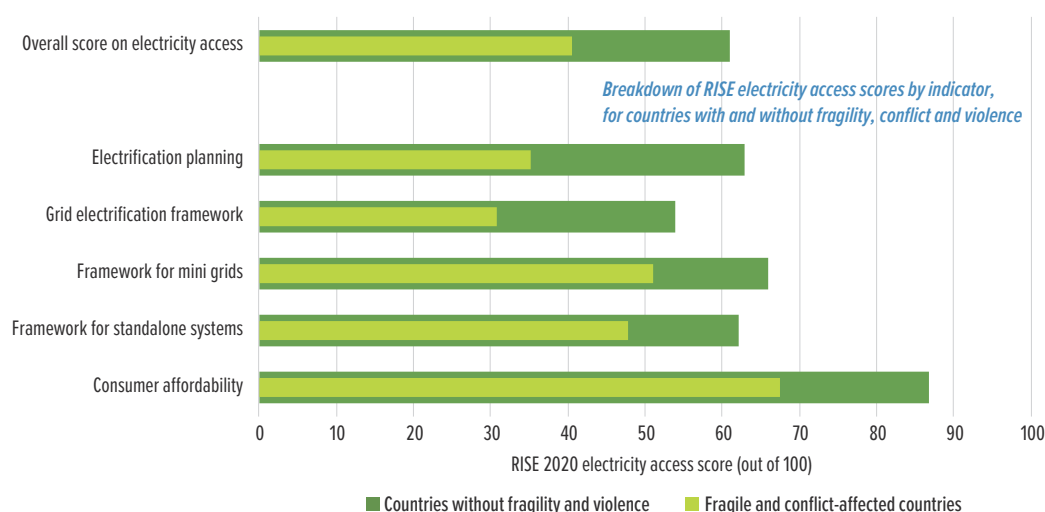


Source: World Bank, RISE 2020.

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 red 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, conflict, and violence; they are home to 33 percent of the global population without access (263 million people).

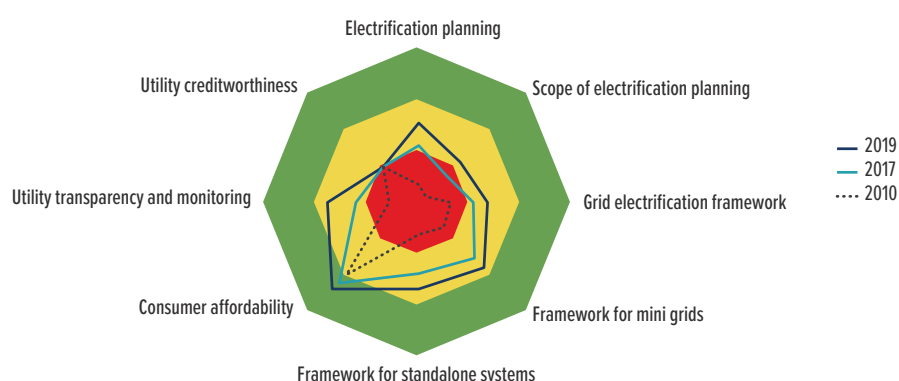
FIGURE 13. ELECTRICITY ACCESS: RISE SCORES FOR FCV AND NON-FCV COUNTRIES, BY INDICATOR, 2019



Source: World Bank, RISE 2020. Note: FCV = fragility, conflict, 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, electrification planning and scope (that is, targeted service, inclusion, and electrification of productive uses and public facilities) have still not reached the green zone (figure 14), although they have become the needed first step for the design of efficient strategies. Grid electrification frameworks have been steadily improving as well, but at a slightly slower pace. Since 2010, affordability has improved consistently and rapidly, a trend that reflects progress on implementing strategies 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

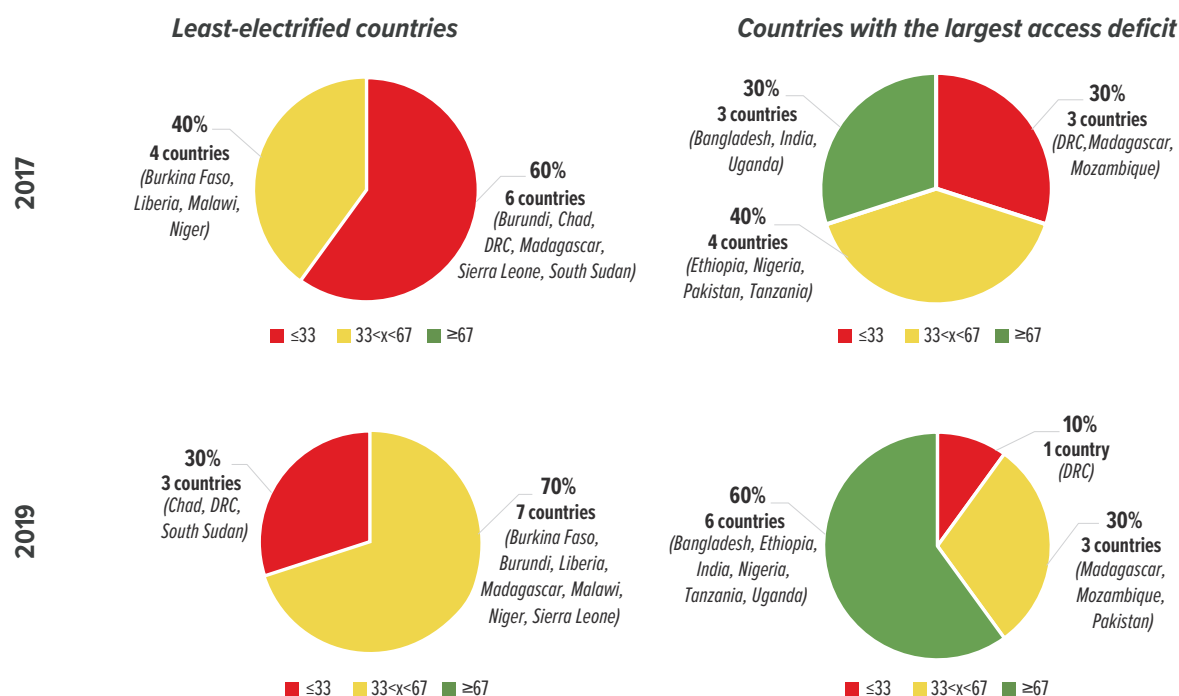


Source: World Bank, RISE 2020.

⁸ Consumer affordability is evaluated based on a combination of three measures: (i) the affordability 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 the population); (ii) the affordability of connection fees (meaning that the upfront cost of connection is below the gross average monthly household income of the bottom 40 percent of the population); and (iii) the existence of a lifeline tariff.

Among countries with the highest access deficits, Ethiopia, Nigeria, and Tanzania have made the most progress in adopting corrective policies since 2017 (figure 15). Among these countries, the greatest improvements are in frameworks for mini grids, consumer affordability, and utility transparency.

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



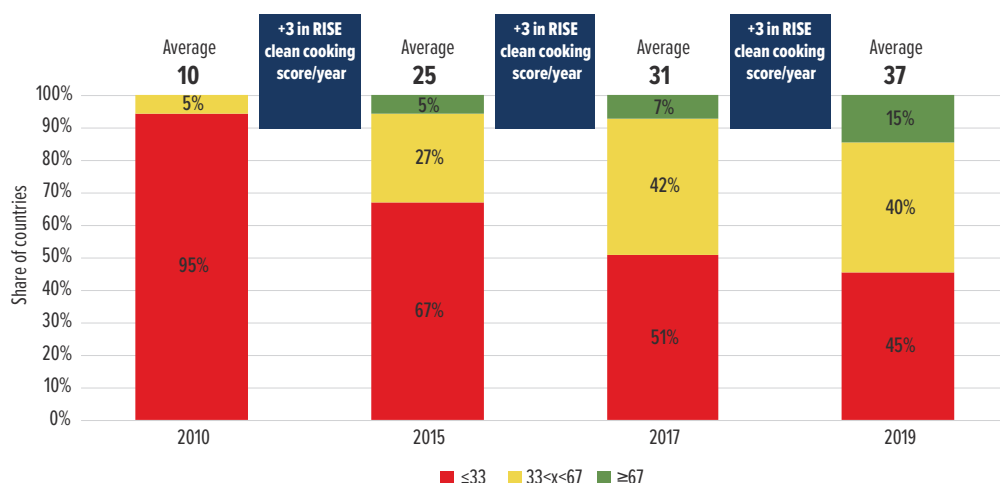
Source: World Bank, RISE 2020.

Note: The least-electrified countries are Burkina Faso, Burundi, Chad, the Democratic Republic of Congo (DRC), Liberia, Madagascar, Malawi, Niger, Sierra Leone, and South Sudan. The countries with largest access deficit are Bangladesh, the Democratic Republic of Congo (DRC), Ethiopia, India, Madagascar, Mozambique, Nigeria, Pakistan, Tanzania, and Uganda. See IEA, IRENA, UNSD, World Bank, and WHO (2020).

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 making. Yet RISE scores have improved consistently across the 55 countries reporting on deficits in access to clean cooking since 2010 (figure 16). The number of countries with advanced policy frameworks rose from zero in 2010 to eight in 2019, moving 15 percent of access-deficit countries into the green zone on the RISE index. Of the remainder, 22 countries made 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-deficit 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 policymaking. These countries are home to 1.4 billion people who lack access, more than half the global population in that situation (figures 17, 18).

FIGURE 17. CLEAN COOKING: RISE SCORE, 2010–19

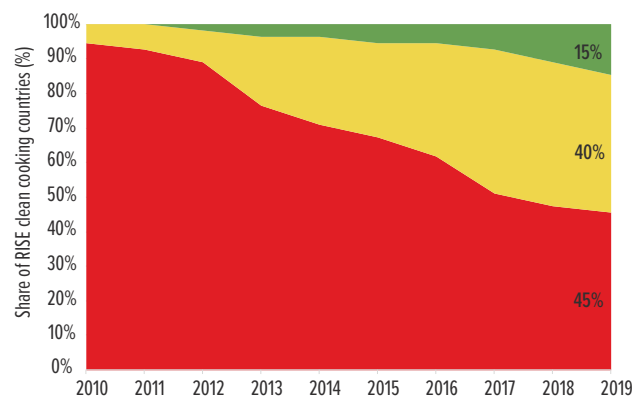
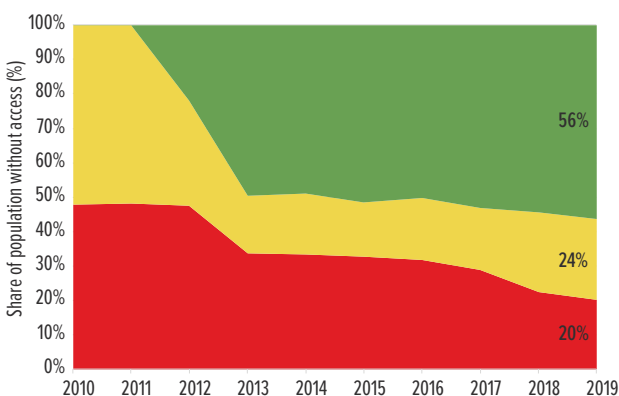


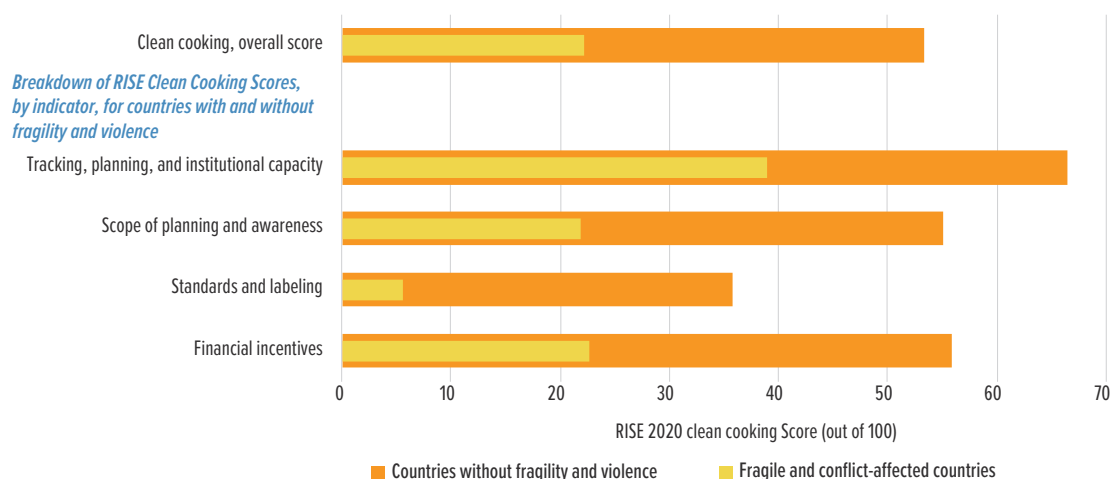
FIGURE 18. CLEAN COOKING: RISE SCORE WEIGHTED BY POPULATION WITHOUT ACCESS, 2010–19



Source: World Bank, RISE 2020.

Countries experiencing fragility and conflict have seen few if any policy improvements in clean cooking. On every indicator and in their overall scores for policy making, countries marked by fragility have on average half the score for clean cooking of nonfragile countries. Standards and labeling are particularly weak in fragile countries; average scores on this indicator are 15 percentage points lower than scores of nonfragile countries (figure 19). There is an urgent need for cooking interventions in countries marked by fragility and conflict, where fuel-collection tasks not only expose women and girls to violence but also damage the environment. Yet the clean cooking agenda is largely ignored in this group of countries.

FIGURE 19. CLEAN COOKING: RISE SCORES IN FCV AND NON-FCV COUNTRIES, BY INDICATOR, 2019

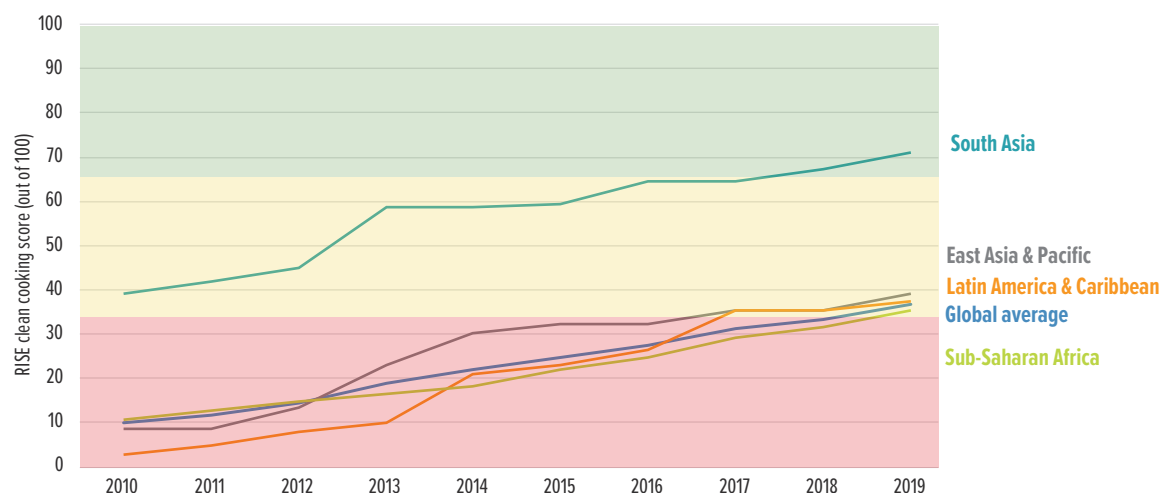


Source: World Bank, RISE 2020.

Note: FCV = fragility, conflict, and violence.

There are policy-making disparities in clean cooking within and between regions. While Latin America and the Caribbean has shown the greatest gains since 2010, South Asian countries are leading on policy and regulatory frameworks, where progress continues driven by consistent progress by Bangladesh, India and Nepal (figure 20). Although Sub-Saharan Africa has the lowest regional average, since 2010 it has shown a consistent uptick, albeit from a lower starting point. In three out of four access-deficit regions—East Asia and Pacific, South Asia, and Sub-Saharan Africa—RISE scores range from 0 to 83. In Latin America and the Caribbean, where only four countries have a significant access deficit (Guatemala, Haiti, Honduras, and Nicaragua), country-level scores on the pillar are less uneven, ranging from 24 to 53.

FIGURE 20. CLEAN COOKING: EVOLUTION OF RISE SCORES BY REGION, 2010–19



Source: World Bank, RISE 2020.

The top regional performers on the RISE index are also among the fastest improvers, gaining six to eight points annually since 2010 (table 1). But the concerted policy push seen in certain low-access countries (Lao People's Democratic Republic, Nigeria, and Tanzania) is particularly noteworthy.

TABLE 1. CLEAN COOKING: FASTEST IMPROVERS, BY REGION

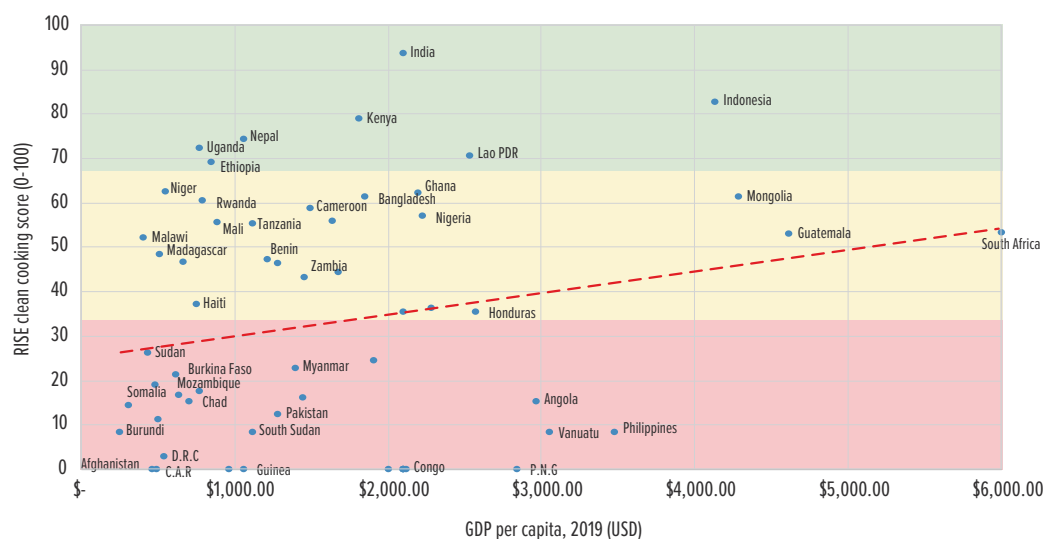
(RISE score on pillar in 2020, annual rate of improvement in RISE score 2010–19, 2018 access rate)

East Asia & Pacific	Latin America & Caribbean	South Asia	Sub-Saharan Africa
Indonesia (83, 8.5, 80%)	Guatemala (53, 5.9, 46%)	Bangladesh (61, 6.8, 24%)	Kenya (79, 8.8, 10%)
Lao PDR (70, 6.9, 7%)	Honduras (37, 4.9, 57%)	Nepal (74, 6.8, 29%)	Nigeria (57, 6.3, 10%)
Mongolia (61, 6.8, 50%)	Haiti (35, 3.9, 4%)	India (94, 3.5, 49%)	Tanzania (55, 6.1, 4%)

Source: World Bank, RISE 2020.

Performance on the RISE clean cooking index soars as income rises. There are notable exceptions, however, to this link between income and mature policy frameworks. Lower-income countries are concentrated in the red zone, suggesting that they have not yet developed policy frameworks for clean cooking. Meanwhile, green zone countries include low-income nations like Ethiopia, Malawi, and Uganda, which have robust policy frameworks (figure 21). While the period between 2010 and 2017 was notable for progress in upper- and lower-middle-income countries in Asia and Latin America (e.g., Bangladesh, Cambodia, China, Guatemala, India, Indonesia, Mongolia, and Nepal), the period between 2017 and 2019 saw large gains in poorer Sub-Saharan Africa countries like Benin, Kenya, Nigeria, and Tanzania. The presence of low-access countries among top RISE performers shows that prioritizing the policy agenda is not enough. Scaling up access on the ground depends on the finer aspects of allocating resources and planning implementation. In low-income countries like Uganda and Ethiopia, scale-up will require gradually stepping away from artisanal production of biomass stoves toward clean solutions (liquefied petroleum gas, biogas, and electricity). As this transition will occur over a longer time period, interim solutions (such as quality-assured biomass stoves) will help to mitigate the worst health impacts of charcoal and firewood.

FIGURE 21. CLEAN COOKING: RISE SCORES AND GDP PER CAPITA, 2019



Source: World Bank, RISE 2020.

Even where planning frameworks for clean cooking are present, policies that drive wider adoption and set standards and labeling may lag. Examining progress at a granular level shows that maximum traction is driven by policies that (i) track household-level access; (ii) establish institutional capacity to create action plans, set science-based standards for solutions, and track adoption; and (iii) increase uptake of clean cooking solutions by raising awareness (figure 22). Whether cooking solutions are clean or not depends on the technical attributes of combustion and heat-transfer efficiency, as well as emissions and safety of use. Less than a third of the countries with significant access deficits have set standards for efficiency, emissions, and safety related to cooking solutions.

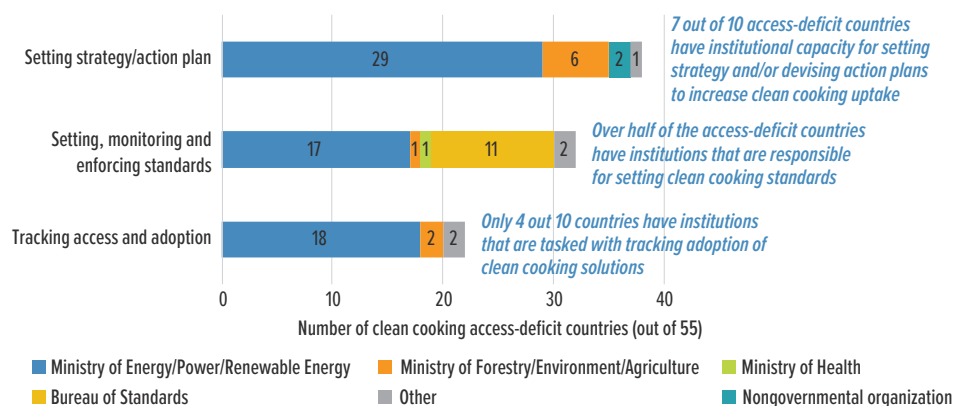
FIGURE 22. CLEAN COOKING: PROGRESS BY RISE SUB-INDICATOR, 2010, 2017, AND 2019



Source: World Bank, RISE 2020.

Clean cooking is a cross-sectoral issue. It requires an institutional champion to help coordinate clean cooking efforts across the sectors of energy, health, gender-inclusion, and climate change. Given the significant implications of cooking practices on outcomes in all four areas, the responsibility for policy making and implementation must be shared by government and nongovernment actors, engaging multiple government ministries/departments (figure 23). Even the strategies deployed to build awareness and drive adoption are multifaceted. Most countries build their awareness strategy on the health aspects of clean cooking; half use income, geography, and gender in their campaigns. In many countries, the ministry of energy is involved in all aspects of policy making for clean cooking—from creating an action plan for uptake to setting standards and monitoring progress, emphasizing the need for a coordinating institution that can lead policy deployment. Bangladesh has demonstrated the effectiveness of having such an institution. The Infrastructure Development Company Limited, a government-owned development finance institution, coordinates with nongovernmental organizations to strengthen the commercial market for clean cooking solutions, acting as a hub for the testing of improved cookstoves and setting technical specifications.

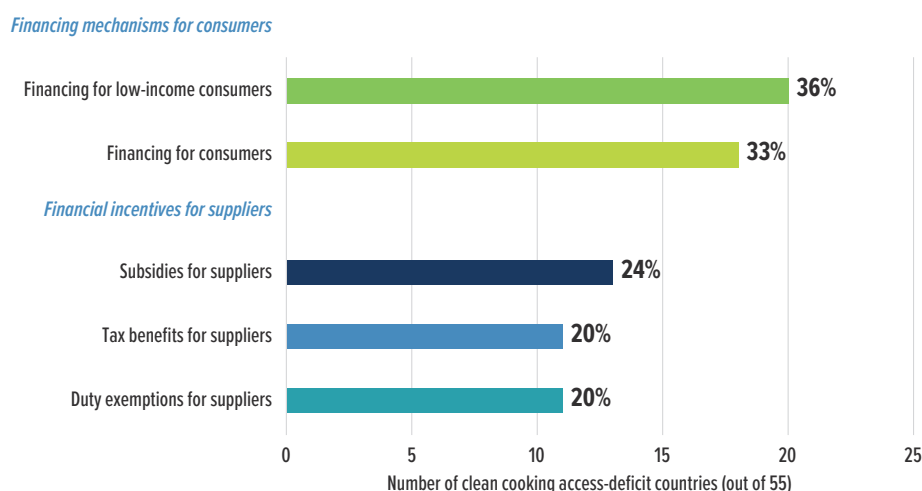
FIGURE 23. CLEAN COOKING: INSTITUTIONAL RESPONSIBILITY FOR CLEAN COOKING, 2019



Source: World Bank, RISE 2020.

If the overall cooking ecosystem is to improve, financial incentives must receive greater emphasis. Financial incentives for consumers and suppliers of solutions are available in about a third of the access-deficit countries. Overall, there is greater support for consumers of clean cooking solutions than for suppliers. Only a quarter of the countries in which significant populations lack access provide financial incentives to suppliers (figure 24). Subsidies are the most common incentive, followed by tax benefits and duty exemptions. These incentives are usually directed toward biogas, liquefied petroleum gas, and solar cookstoves.

FIGURE 24. CLEAN COOKING: SHARE OF COUNTRIES OFFERING INCENTIVES FOR SUPPLIERS AND FINANCING FOR CONSUMERS, 2019

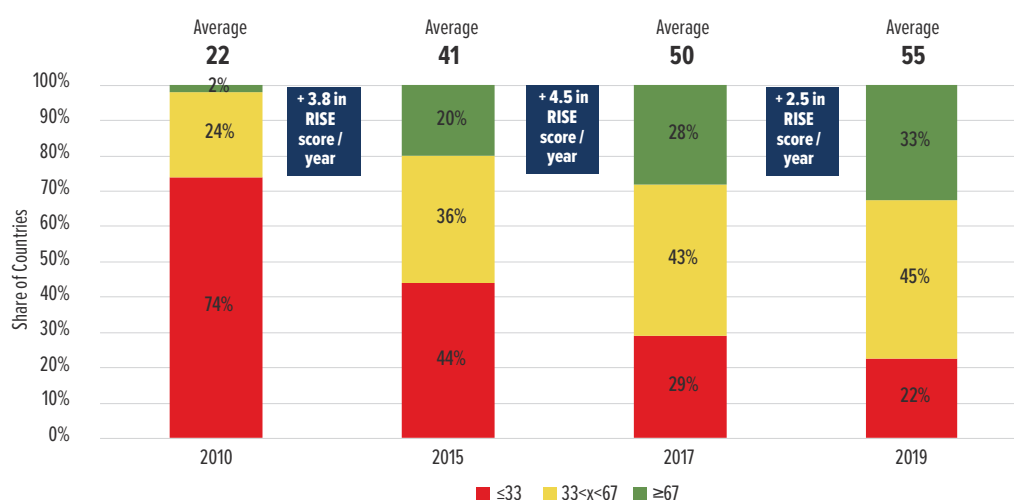


Source: World Bank, RISE 2020.

RENEWABLE ENERGY: SLOWED PROGRESS OVER THE PAST TWO YEARS

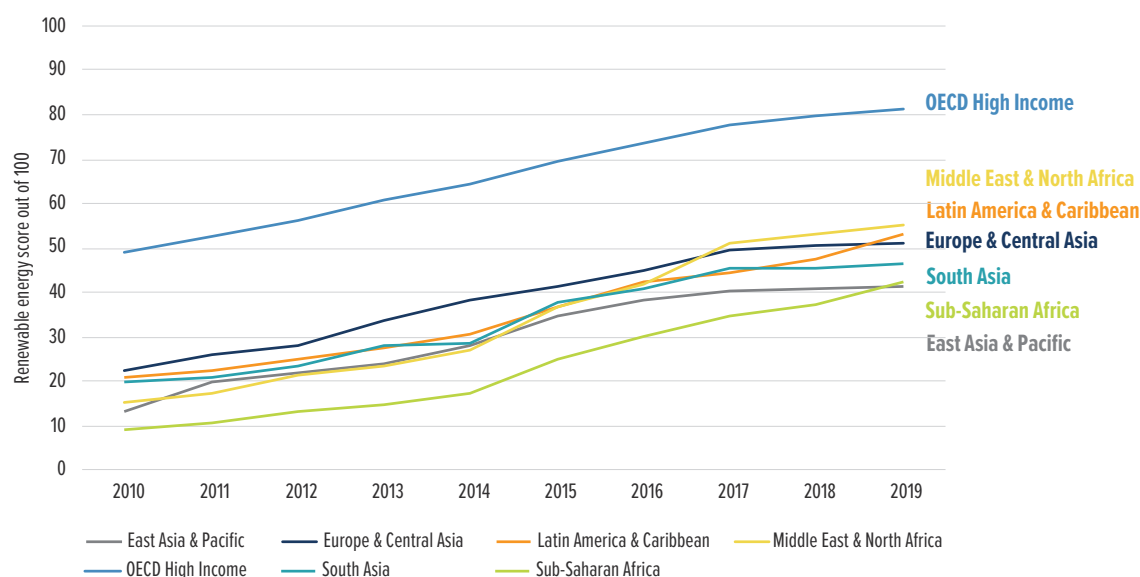
Although renewable energy policies saw vast improvements between 2010 and 2017, progress has slowed in recent years, decreasing by almost half during the 2017–19 period (figure 25). By 2019, a third of countries worldwide had developed legal frameworks for renewable energy and related regulatory policies. Forty-five percent had begun to develop and adopt policy measures but remained in the yellow zone, suggesting significant room for improvement. Compared with 2017, fewer countries were in the red zone, which still groups nearly a quarter of all countries. Despite the slowdown in global RISE scores for renewable energy, Sub-Saharan Africa and Latin America and the Caribbean made significant progress between 2017 and 2019 (figure 26).

FIGURE 25. RENEWABLE ENERGY: PROGRESS IN RISE SCORES FOR PILLAR, 2010–19



Source: World Bank, RISE 2020.

FIGURE 26. RENEWABLE ENERGY: EVOLUTION OF SCORE BY REGION, 2010–19



Source: World Bank, RISE 2020.

Latin America and the Caribbean made the fastest progress on renewable energy regulations and policies over the past two years, rising from an average score of 45 in 2017 to 53 in 2019. Colombia—a top performer in 2019 and one of the fastest improvers between 2017 and 2019—gave renewable energy policies and regulations more attention, rising from 55 points in 2017 to 78 points in 2019. The country set targets for renewables in electricity. In 2018, it began to offer small-scale producers long-term power purchase agreements for renewable electricity production. The following year, other direct fiscal incentives for renewable energy were introduced. Also forthcoming in 2019 were policies to encourage the transportation sector to adopt cleaner-powered modes of transport, financial support for electric and hybrid vehicles, and electrification of public transportation.

TABLE 2. RENEWABLE ENERGY: FASTEST IMPROVERS, BY REGION
(RISE score on pillar in 2017, 2019)

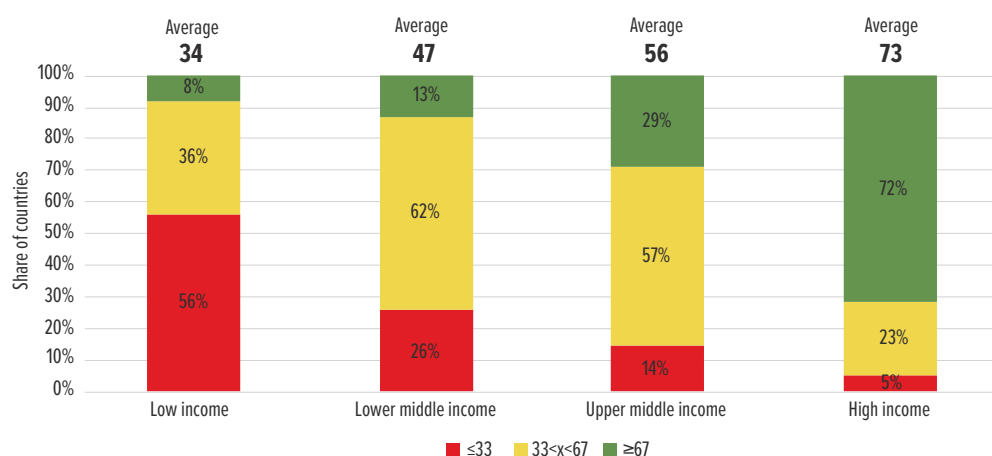
East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	OECD high income	South Asia	Sub-Saharan Africa
Indonesia (44, 51)	North Macedonia (28, 40)	Colombia (55, 78)	Kuwait (17, 28)	Korea, Rep. (73, 81)	Pakistan (35, 42)	Chad (7, 77)
Singapore (53, 55)	Bosnia and Herzegovina (45, 54)	Argentina (42, 60)	Oman (42, 51)	Sweden (73, 81)	India (89, 89)	Tanzania (30, 60)
Cambodia (33, 35)	Serbia (58, 61)	Costa Rica (49, 67)	Qatar (39, 47)	Finland (77, 84)	—	South Africa (60, 82)

Source: World Bank, RISE 2020.

Sub-Saharan Africa is the other region that made significant recent progress in renewable energy policies, increasing its average RISE score from 35 points in 2017 to 42 points in 2019. Chad and Tanzania improved their scores by 70 points and 30 points, respectively, during the period (table 2). In 2018, Chad established an action plan and target for renewable energy, one that included measures to integrate renewable energy into electricity generation and transmission planning, as well as a legal framework for private sector ownership of generation.

Different income groups show great variations in their renewable energy performance (figure 27). Despite the overall pattern of low-income countries having a less-developed policy and regulatory framework, exceptions are found across different income groups. Although the high-income countries had an average RISE score of 73 on the renewable energy pillar in 2019, and although 72 percent of these countries were in the green zone, two—Bahrain and Kuwait—were still in the red zone at the end of 2019. On the other hand, Chad and Rwanda, low-income countries, leaped into the green zone in 2019, due to active development and the introduction of policies and regulations conducive to development of renewable energy.

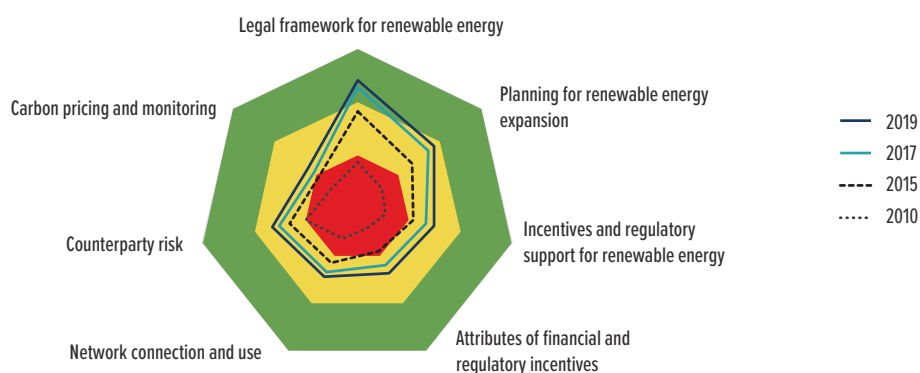
FIGURE 27. RENEWABLE ENERGY: RISE SCORES BY INCOME GROUP, 2019



Source: World Bank, RISE 2020.

Although each region has shown different levels of effort in improving renewable energy policies and regulations since 2010, it is encouraging to observe that 99 percent of the countries around the world have at least begun to establish a comprehensive legal framework for renewable energy (figures 28). Carbon pricing and monitoring has been the least developed policy area since 2010, with half of the countries still not having a mechanism or policy in place in 2019.

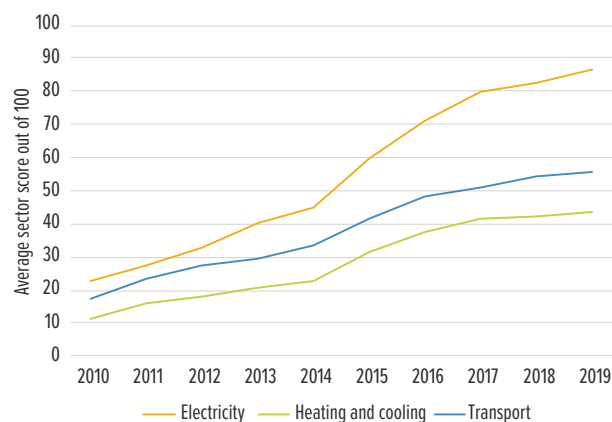
FIGURE 28. RENEWABLE ENERGY: PROGRESS OF RISE SCORES BY INDICATOR, 2010, 2015, 2017, AND 2019



Source: World Bank, RISE 2020.

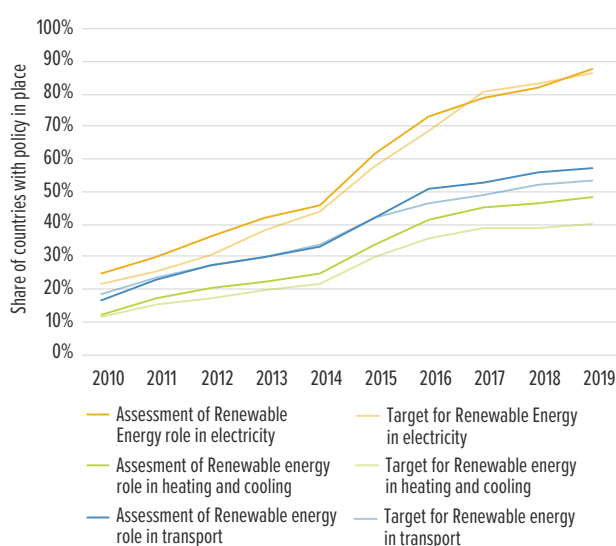
Globally, the gap between renewable energy development policies and regulations in the electricity sector and those in the heating and cooling and transport sectors widened from 2017 and 2019 (figure 29). In the high-income countries of the OECD average scores for renewable energy development policies in all three sectors were quite high in 2019: 100 for electricity, 95 for transport, and 81 for heating and cooling. As a comparison, the average scores for the non-OECD countries were: 83 for electricity, 43 for transport, and 33 for heating and cooling. This disparity clarifies the global results presented in the figures below. Globally, 88 percent of countries have conducted assessments of renewables in the electricity sector, and 86 percent have a clear target and plan for renewables in the sector (figure 30). Meanwhile, at the end of 2019, only 40 percent of countries had a clear target or plan for renewable energy in heating and cooling, and only about half had one for renewables in the transport sector. These two sectors, which account for more than two-thirds of global energy consumption, must be paid more attention by the policy makers in order to increase the use of renewable energy.

FIGURE 29. RENEWABLE ENERGY: EVOLUTION OF RISE SCORE BY SECTOR, 2010–19



Source: World Bank, RISE 2020.

FIGURE 30. RENEWABLE ENERGY: EVOLUTION OF ASSESSMENT AND TARGET SCORE BY SECTOR, 2010–19



Policy frameworks for utility-scale renewable energy projects are better developed than those for small-scale producers (figure 31). As of 2019, 75 percent of countries had made it possible for small-scale producers to connect to the grid (figure 32). Contracts for such producers still need to be made more flexible. For example, only about half of countries have made fixed-tariff contracts available, and only 44 percent differentiate tariffs by technology or size of the generation plant and index tariffs to an international currency or inflation.

FIGURE 31. EVOLUTION OF UTILITY-SCALE RENEWABLE ENERGY PROJECTS, 2010–19

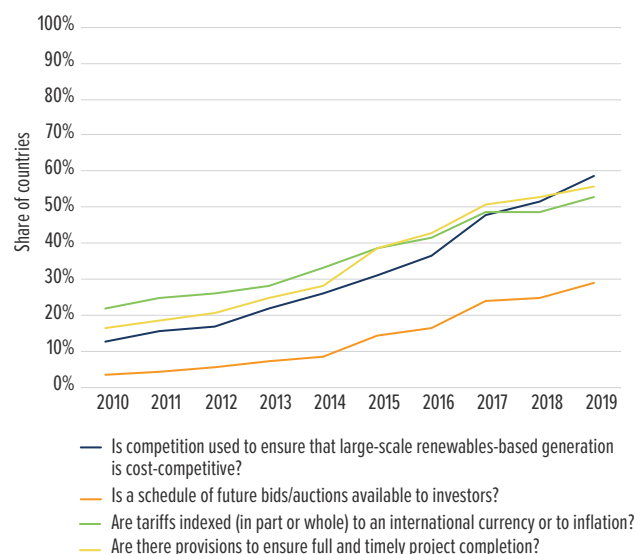
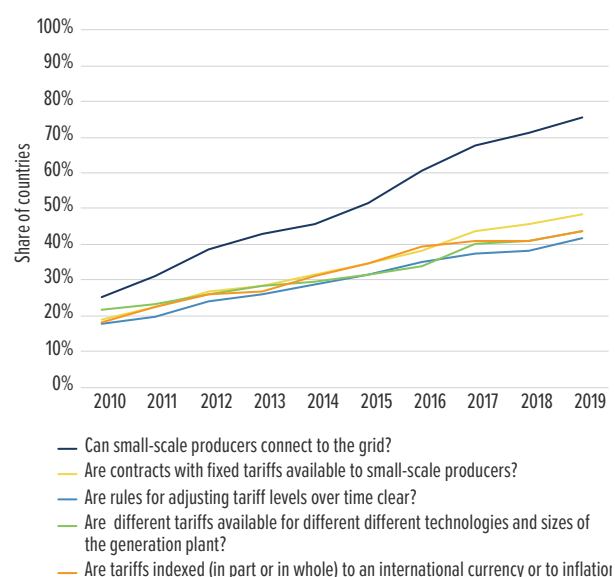


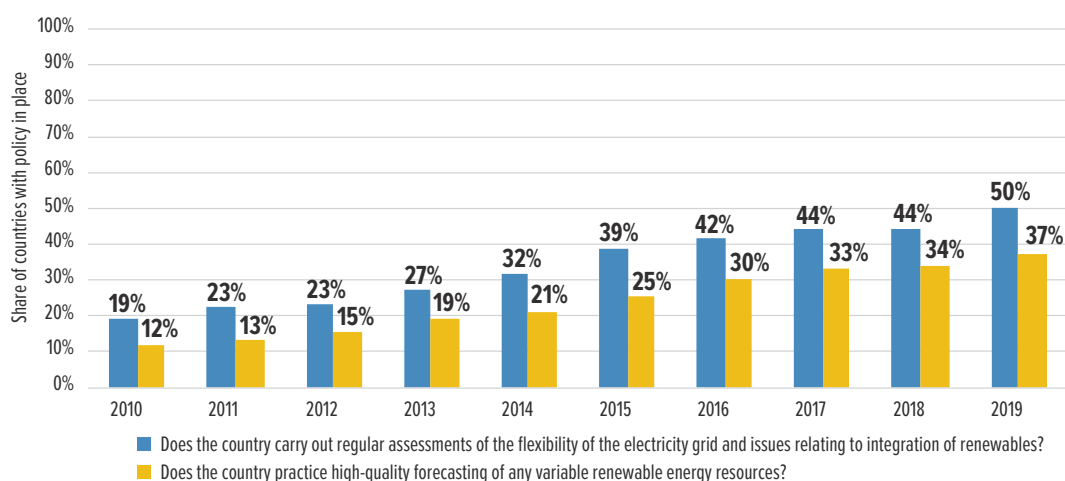
FIGURE 32. EVOLUTION OF SMALL-SCALE RENEWABLE ENERGY PROJECTS, 2010–19



Source: World Bank, RISE 2020.

Globally, grid flexibility and forecasting are improving—but slowly. By 2019, half of countries were conducting regular assessments of the flexibility of the electricity grid and its ability to integrate variable renewable energy (figure 33), but only 37 percent are presently capable of high-quality forecasting for variable renewable energy. Among 71 countries that carry out regular assessments of grid flexibility, 63 percent also integrate high-quality forecasting for variable renewable resources.

FIGURE 33. PROGRESS ON GRID FLEXIBILITY AND FORECASTING, 2010–19

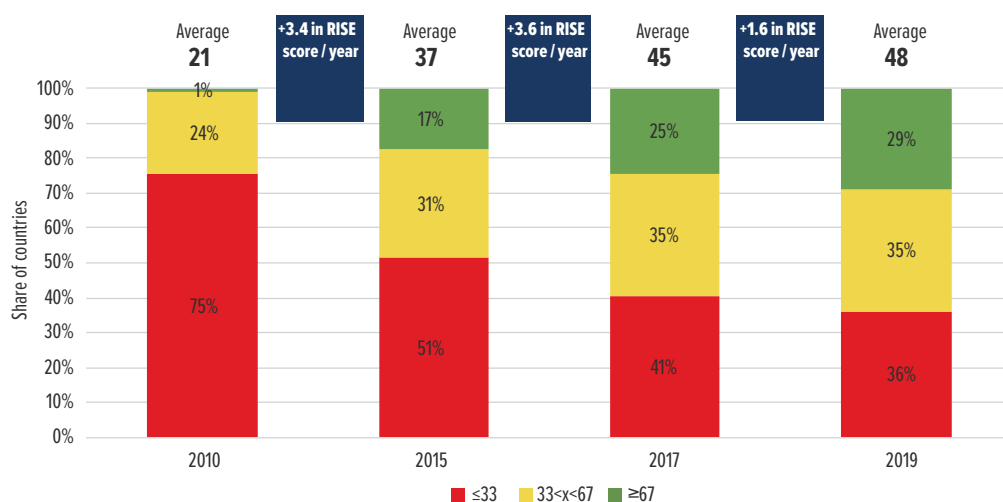


Source: World Bank, RISE 2020.

ENERGY EFFICIENCY: A STRONG UPWARD TREND ACROSS ALL REGIONS

The energy efficiency pillar, despite overall progress, shows the slowest rise of the four pillars over 2017–19. This could be explained by the possibility that most of the easier actions were taken between 2010 and 2017 where more complex policies require more time to implement as well as additional investment and infrastructure. The average growth rate for the energy efficiency pillar was 1.6 points per year between 2017 and 2019, less than half the growth rate between 2015 and 2017 (figure 34). The percentage of countries achieving a RISE score in the green zone increased almost thirty-fold over the period, from 1 percent in 2010 to 29 percent in 2019, as the percentage of countries with few or no meaningful energy efficiency policies in place declined by more than half, from 75 percent to 36 percent. The global average, however, remains relatively low.

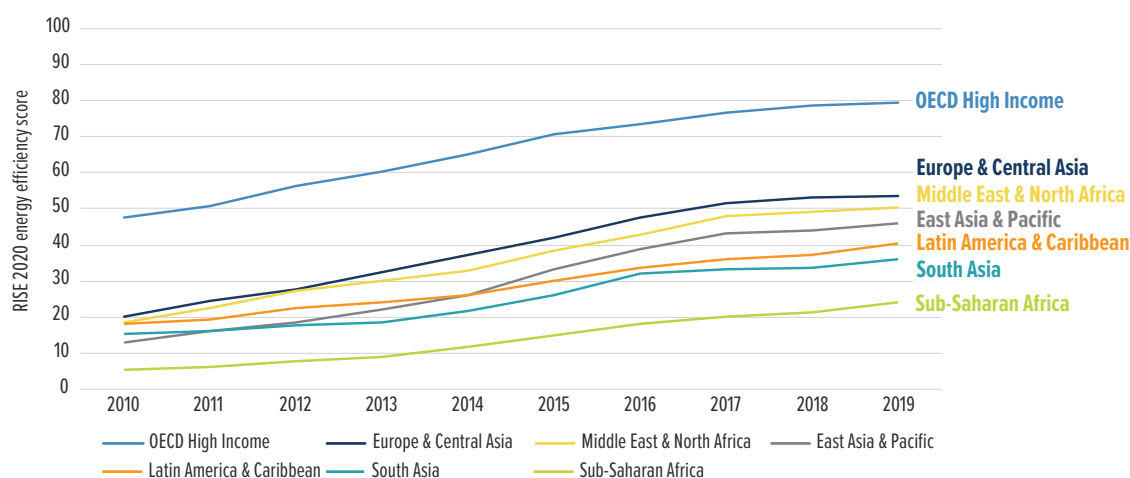
FIGURE 34. ENERGY EFFICIENCY: PROGRESS IN RISE SCORES FOR PILLAR, 2010–19



Source: World Bank, RISE 2020

All regions and income groups increased their adoption of policy and regulatory frameworks for energy efficiency between 2010 and 2019 (figure 35). The observed trend reveals a global emphasis on meeting higher standards for energy efficiency. Across the 138 countries covered in RISE 2020, the higher standards align closely with RISE best practices for legislation, policies, and strategies on energy efficiency. By the end of 2019, nearly 70 percent of the RISE 2020 countries had adopted legislation planning for energy efficiency. However, with respect to policies targeting sectors that have a major impact on energy consumption (e.g., buildings and transport), a great deal of room remains for improvement. OECD (high-income) countries are leaders in policy and regulatory frameworks for energy efficiency, chalking up an average score of 79 in 2019. South Asia and Sub-Saharan Africa have the lowest scores.

FIGURE 35. ENERGY EFFICIENCY: EVOLUTION OF RISE SCORES BY REGION, 2010–19



Source: World Bank, RISE 2020.

The fastest improving regions in the adoption of energy efficiency policies between 2017 and 2019 were Latin America and the Caribbean and Sub-Saharan Africa (table 3). Their average scores rose 2.3 and 2 points per year, respectively. Panama improved the fastest among Latin America and Caribbean countries, implementing, among other measures, mandates for small and medium-sized enterprises and binding energy-saving obligations for public buildings covering water supply, wastewater services, municipal solid waste, street lighting, transportation, and heat supply. Among Sub-Saharan African countries, Chad advanced the most by imposing penalties on utilities for noncompliance with efficiency requirements in generation, transmission and distribution networks, and demand-side management.

TABLE 3. ENERGY EFFICIENCY: FASTEST IMPROVERS, BY REGION

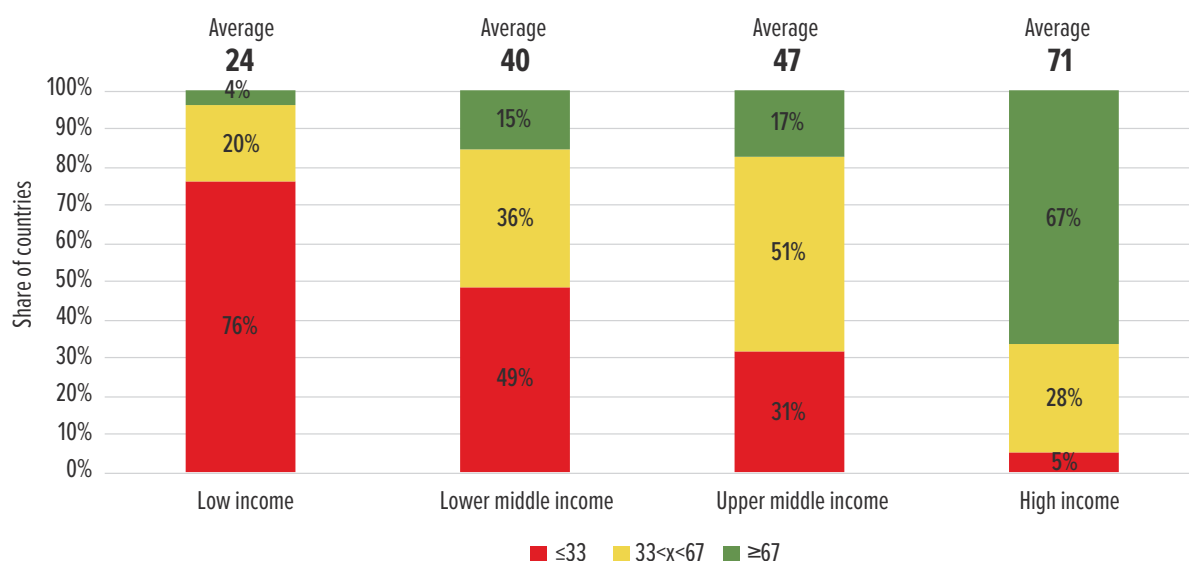
(RISE score on pillar in 2020, annual rate of improvement in RISE score 2017–19)

East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	OECD High Income	South Asia	Sub-Saharan Africa
Singapore (83, 6.4)	Montenegro (61, 6.0)	Panama (66, 8.7)	Kuwait (41, 4.1)	Korea, Rep. (94, 9.5)	Nepal (27, 6.4)	Chad (42, 16.6)
Vietnam (73, 5.6)	Kosovo (55, 4.6)	Ecuador (58, 8.5)	Oman (18, 3.3)	United Kingdom (92, 5.5)	India (91, 4.6)	Kenya (67, 9.8)
Thailand (68, 1.8)	Bosnia and Herzegovina (55, 3.7)	Costa Rica (63, 6.8)	Iran (65, 1.7)	Norway (82, 4.5)	Sri Lanka (46, 3.0)	Togo (28, 5.8)

Source: World Bank, RISE 2020.

In general, income level appears to correlate with energy efficiency scores. Lower-income countries are clustered mostly in the red zone (figure 36), suggesting that their policy frameworks are not prepared for energy efficiency. Higher-income countries with more advanced policy frameworks cluster mainly in the green zone.

FIGURE 36. ENERGY EFFICIENCY: RISE SCORES BY INCOME GROUP, 2019



Source: World Bank, RISE 2020.

There were major exceptions in this general trend. Persian Gulf countries have high income levels, but they perform poorly in their uptake of efficiency measures. Bahrain and Oman fall in the red zone, while the RISE scores of Saudi Arabia and Qatar place them in the yellow zone. Low-income Rwanda, on the other hand, has scored in the yellow zone since it puts a lot of emphasis on implementing energy efficiency incentive programs across the transport, power and residential & commercial sectors.

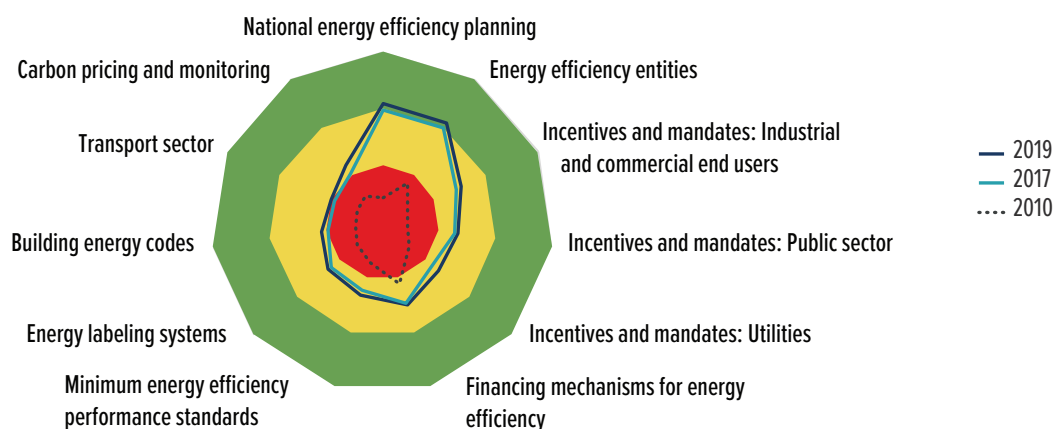
FIGURE 37. ENERGY EFFICIENCY: RISE SCORES AGAINST GDP PER CAPITA, 2019



Source: World Bank, RISE 2020.

RISE 2020 examines progress on energy efficiency using 11 carefully tailored indicators. Those showing the greatest improvement since 2010 are national energy efficiency planning, followed by energy efficiency entities and incentives, and mandates for industrial and commercial end users (figure 38). Meanwhile, the indicator on financing mechanisms for energy efficiency showed the least improvement, as countries appear to have been slow to adopt discounted green mortgages, green or energy efficiency bonds, and partial risk guarantees. The residential sector lacks mechanisms available to the commercial and industrial sectors.

FIGURE 38. ENERGY EFFICIENCY: PROGRESS BY RISE INDICATOR, 2010, 2017, AND 2019



Source: World Bank, RISE 2020.

Although overall growth has slowed in the adoption of policy frameworks, some policy areas have gained more traction than others. Since 2017, the three fastest improving sub-indicators are (i) national energy efficiency legislation and action planning; (ii) minimum energy efficiency performance standards; and (iii) new residential and commercial building codes. Implementation of national legislation and action planning rose from 79 percent of countries in 2017 to 88 percent in 2019. Minimum energy efficiency performance standards increased from 68 percent in 2017 to 73 percent in 2019. New residential and commercial building codes rose from 56 percent in 2017 to 61 percent in 2019.

In terms of energy efficiency consumption in the electricity, transport, and heating and cooling sectors, RISE countries scored highest on efficiency policies in the HVAC sector, with scores increasing by approximately 3 points per year between 2017 and 2019 to reach an average of 61 in 2019 (figure 39). This is because approximately 75 percent of the surveyed countries across all regions⁹ adopted minimum HVAC energy performance standards and labeling measures, with roughly 60 percent making those measures mandatory (figure 40). These findings are in line with the growing recognition of heating and cooling as vital priorities. The transport sector scored the lowest (see figure 39), reflecting a lack of mandates and incentive programs to support reductions in transport demand and widespread failure to shift to more energy-efficient modes for commercial and industrial use (such as freight rail and heavy-duty vehicles covered by mandatory fuel-economy standards).

9 103 countries (out of the 138 countries surveyed) have adopted these measures.

FIGURE 39. ENERGY EFFICIENCY: RISE SCORES BY SECTOR, 2017–19

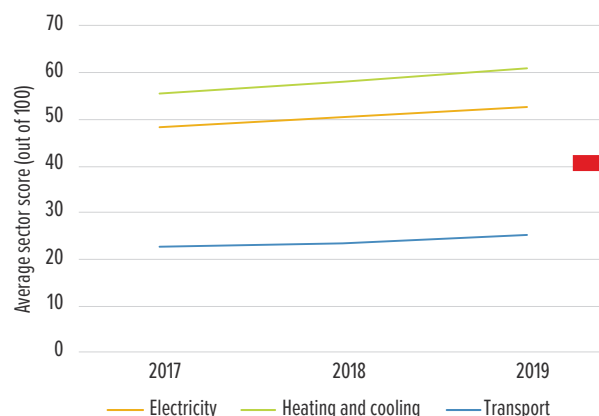
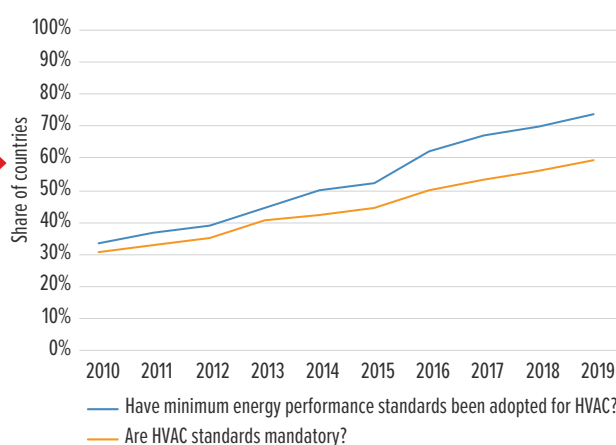


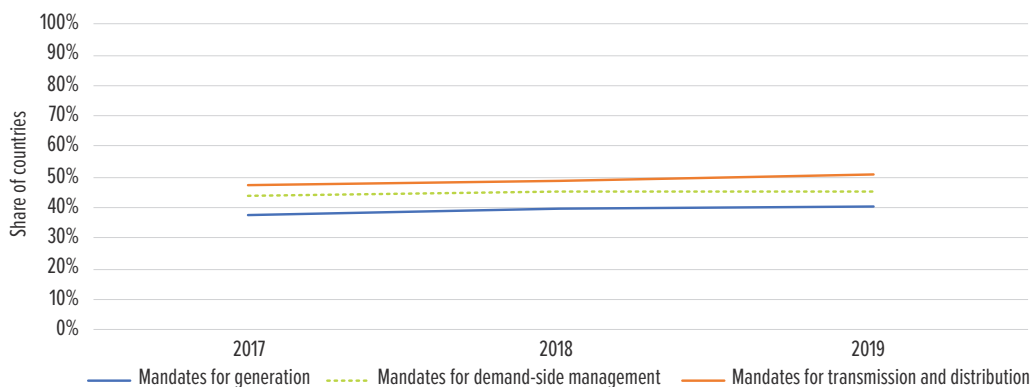
FIGURE 40. EVOLUTION OF HVAC ADOPTION GLOBALLY, 2010–19



Note: HVAC = heating, ventilation, and air conditioning.
Source: World Bank, RISE 2020.

Incentives and mandates shape the generation, transmission, distribution, and demand-side management of utilities. These flatlined between 2017 and 2019, showing almost no change (figure 41). Despite increasing energy demand worldwide, only 40 percent of RISE countries have adequate mandates in place for generation. As seen below, countries seem to place higher emphasis on mandates for transmission and distribution and demand-side management, with roughly half stating that their respective utilities must implement measures in these two areas, under penalty for noncompliance.

FIGURE 41. COUNTRIES WITH ENERGY EFFICIENCY REGULATIONS FOR UTILITIES, 2017–19

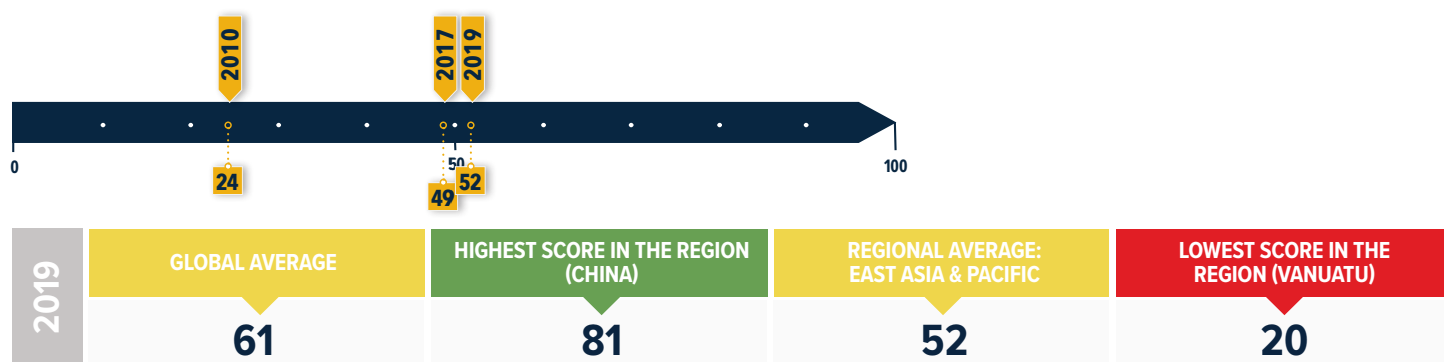


Source: World Bank, RISE 2020.



REGIONAL BRIEFS

EAST ASIA AND PACIFIC



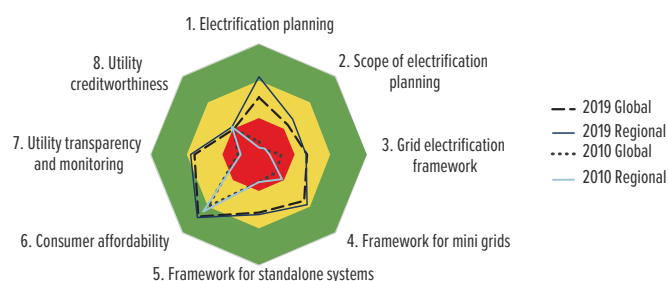
Source: World Bank, RISE 2020

KEY FINDINGS

- The East Asia and Pacific region scored 9 points lower than the global average (61) in 2019, making it the third-worst-performing region, ahead of South Asia and Sub-Saharan Africa.
- China remains the most advanced country in the region. The clean energy and access policies it has put in place since 2010 consistently scored much higher than the regional average.
- The fastest-improving countries between 2017 and 2019 were the Lao People's Democratic Republic (43), Singapore (79), and Indonesia (58). The three showed annual rates of improvement of 4.4, 2.5, and 2.3 points, respectively. Between 2017 and 2019, Indonesia was among the fastest improvers in the access-specific pillars—electricity access and clean cooking. Singapore was a top improver among the clean energy pillars.
- The regional average score for clean cooking (39) exceeded the global average by 2 points thanks to good scores on indicators such as institutional capacity, tracking progress, and financing mechanisms. Equally, the region's score for electricity access (55) exceeds the global average for the pillar by 2 points thanks to high scores on indicators such as consumer affordability and electrification plan.
- For energy efficiency and renewable energy, East Asia and Pacific lags slightly behind other access-deficit regions, mainly because of the low performance of countries such as Vanuatu and Solomon Islands. As a whole, however, the region is making good progress on indicators such as national energy efficiency planning and energy efficiency incentives, and on the legal framework for renewable energy.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010 AND 2019

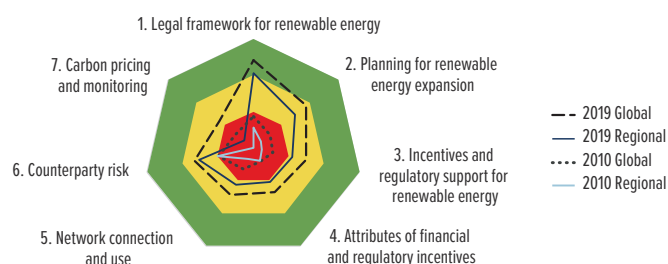
Electricity access



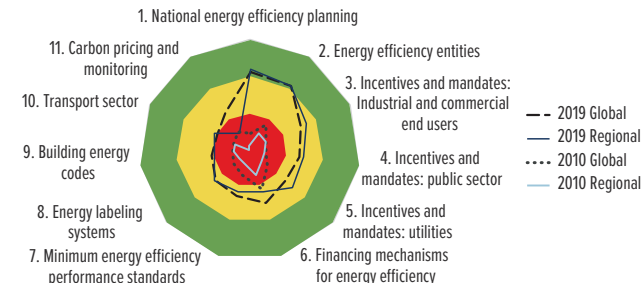
Clean cooking



Renewable energy



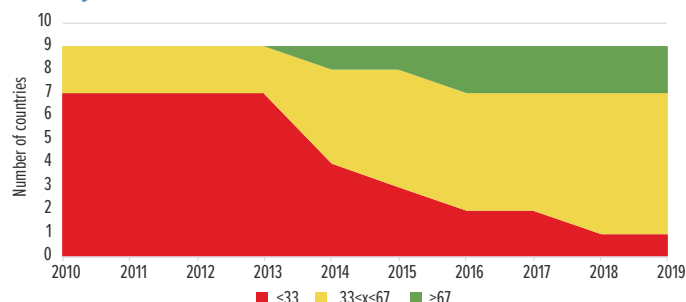
Energy efficiency



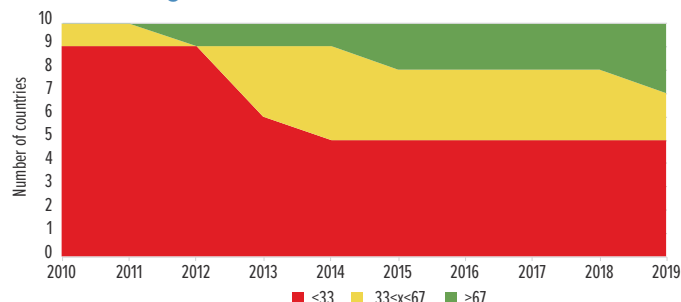
Source: World Bank, RISE 2020

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

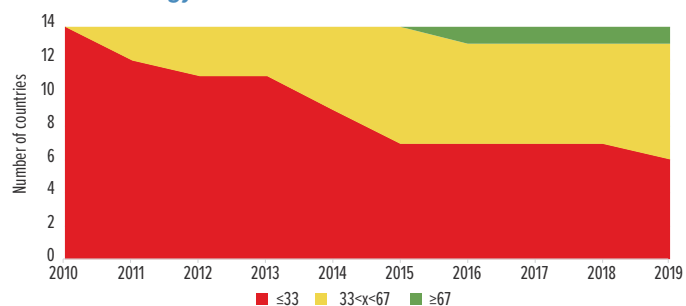
Electricity access^a



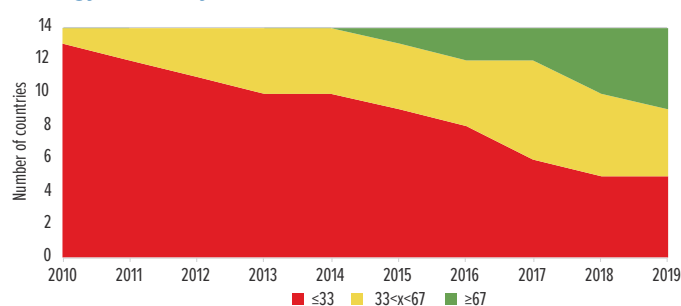
Clean cooking



Renewable energy^b



Energy efficiency



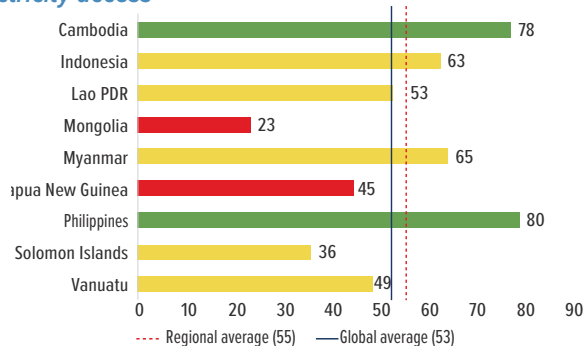
Source: World Bank, RISE 2020

a. The countries covered by the access pillars (electricity access and clean cooking) are Cambodia, Indonesia, Lao PDR, Mongolia, Myanmar, Papua New Guinea, Philippines, Solomon Islands, and Vanuatu. China is covered in clean cooking.

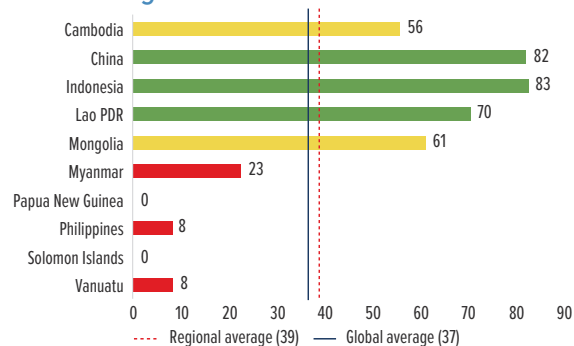
b. The countries covered by the clean energy pillars (renewable energy and energy efficiency) are Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, Myanmar, Papua New Guinea, Philippines, Singapore, Solomon Islands, Thailand, Vanuatu, and Vietnam.

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

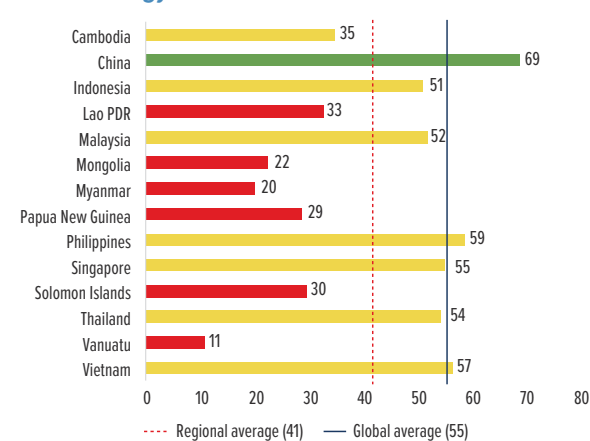
Electricity access



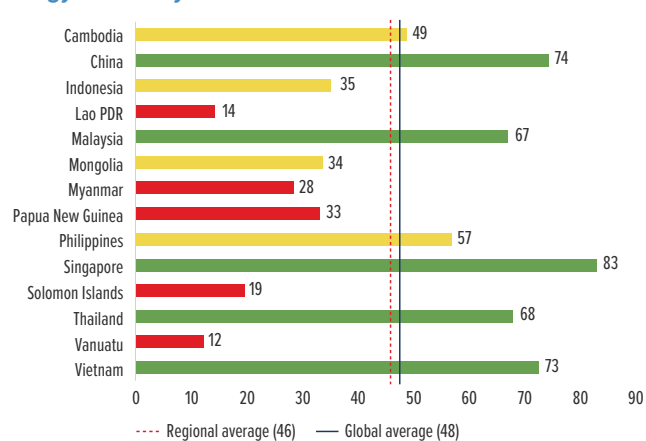
Clean cooking



Renewable energy

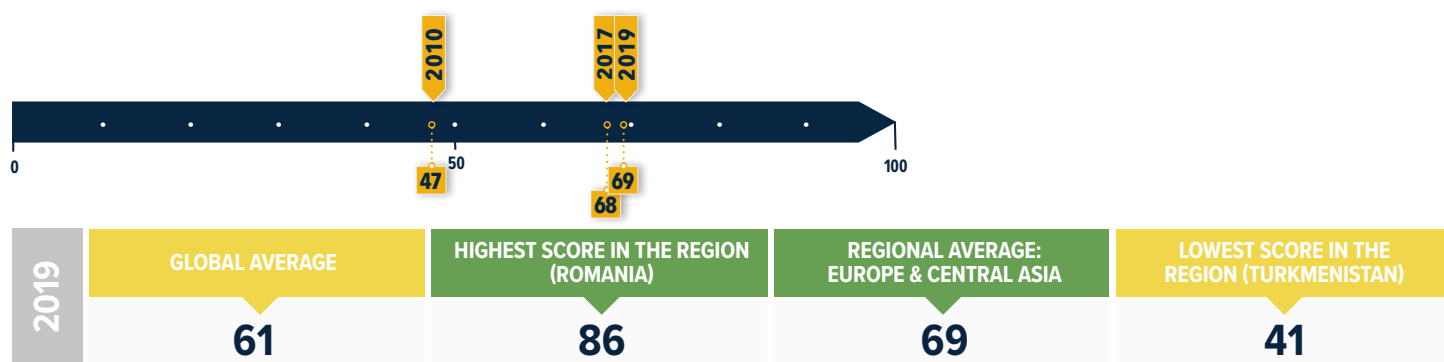


Energy efficiency



Source: World Bank, RISE 2020

EUROPE AND CENTRAL ASIA



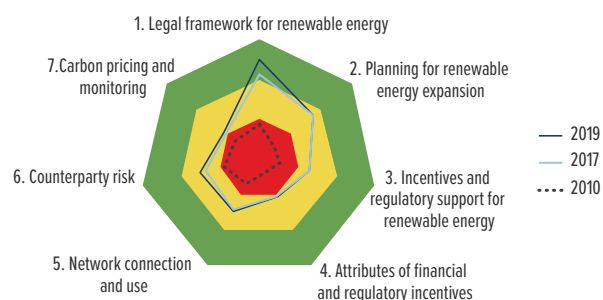
Source: World Bank, RISE 2020

KEY FINDINGS

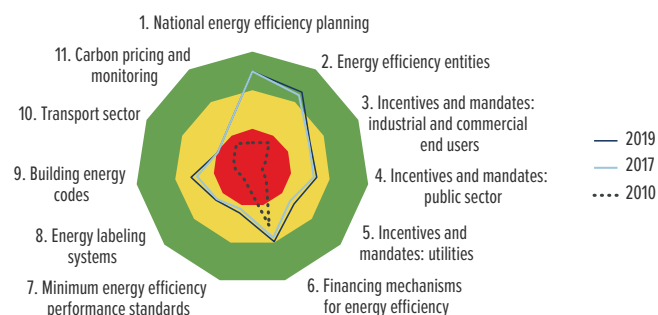
- The Europe and Central Asia region's average RISE 2020 score is significantly higher than the global average, and its scores for energy efficiency are higher than those for renewable energy¹.
- Romania leads the region in developing sustainable energy policy across the pillars of the RISE 2020 index. Bulgaria and Turkey have made marked advances in their clean energy policies.
- Bosnia and Herzegovina and Montenegro were the fastest improvers in the Europe and Central Asia region between 2017 and 2019, chiefly because of their adoption of policies pertaining to financial and regulatory incentives and because they reduced counterparty risks in renewable energy.
- In the energy efficiency pillar, indicators such as minimum energy efficiency standards, energy labeling systems, transport sector policies, and carbon pricing and monitoring seemed to lag behind the rest.
- For the renewable energy pillar, attributes of financial and regulatory incentives and carbon pricing and monitoring are the indicators that appear to have improved most slowly.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010, 2017 AND 2019

Renewable energy



Energy efficiency

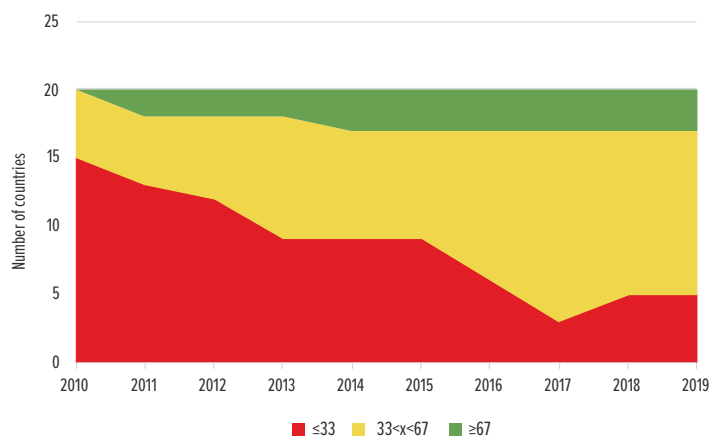


Source: World Bank, RISE 2020

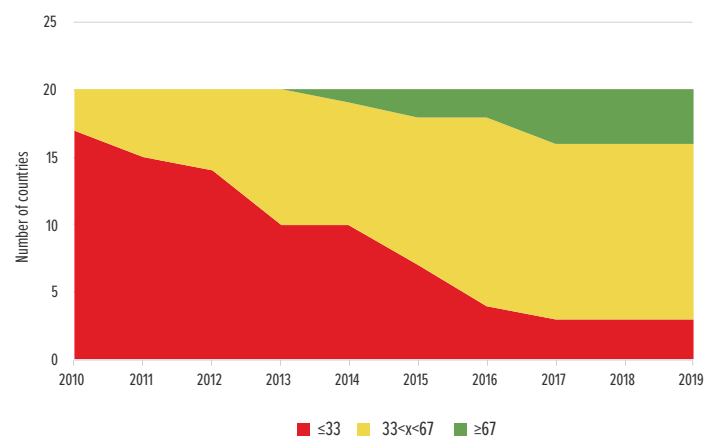
¹ Europe and Central Asia region is considered a nondeficit region, so all countries are assumed to have 100 percent electrification rates. The countries covered by the clean energy pillars (renewable energy and energy efficiency) are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Kazakhstan, Kosovo, Kyrgyz Republic, Montenegro, North Macedonia, Romania, Russian Federation, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

Renewable energy



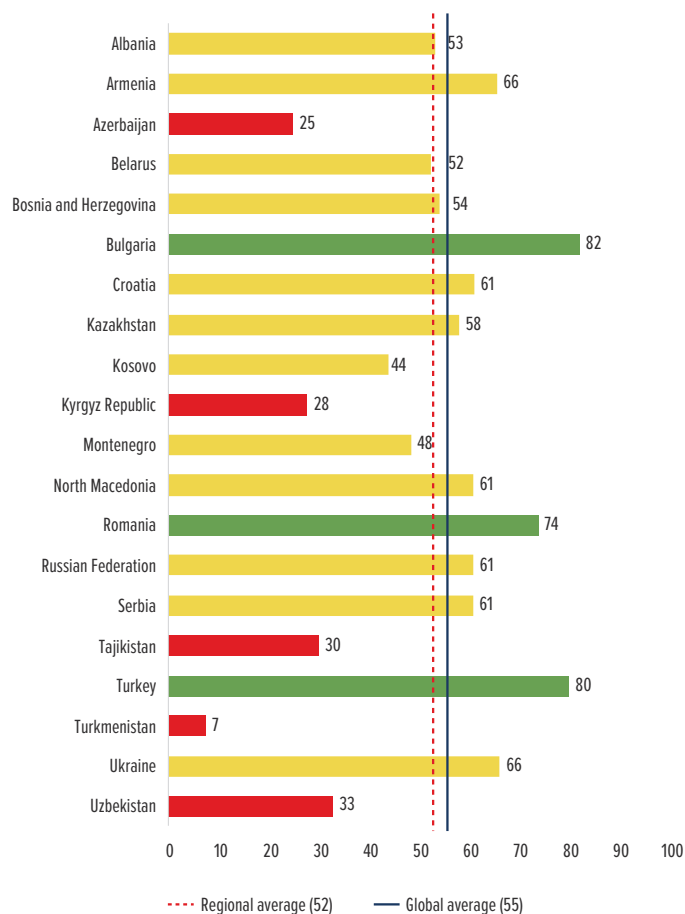
Energy efficiency



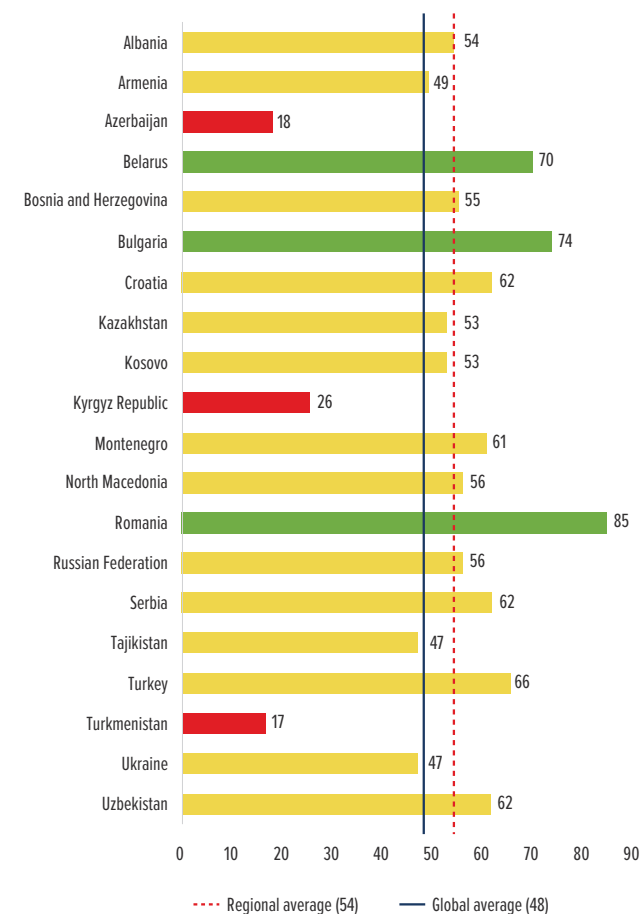
Source: World Bank, RISE 2020

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

Renewable energy

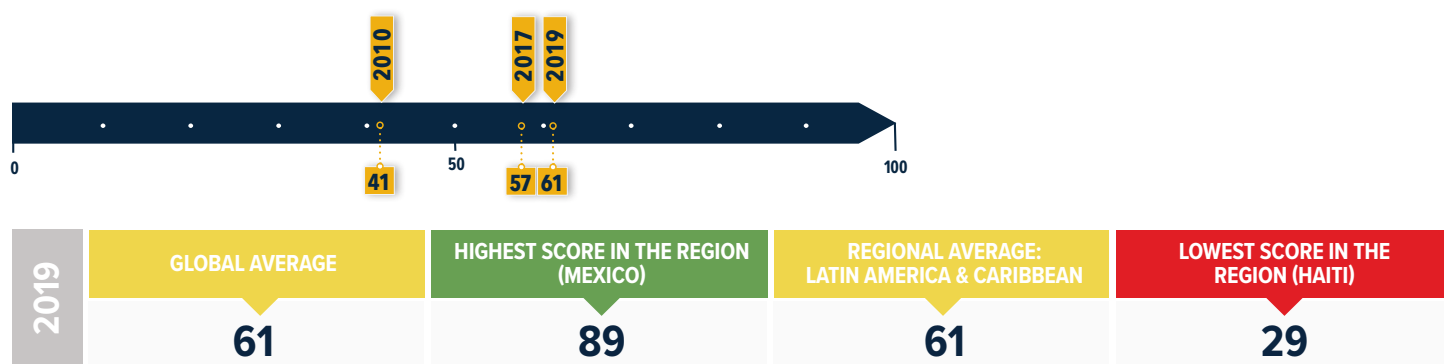


Energy efficiency



Source: World Bank, RISE 2020

LATIN AMERICA AND THE CARIBBEAN



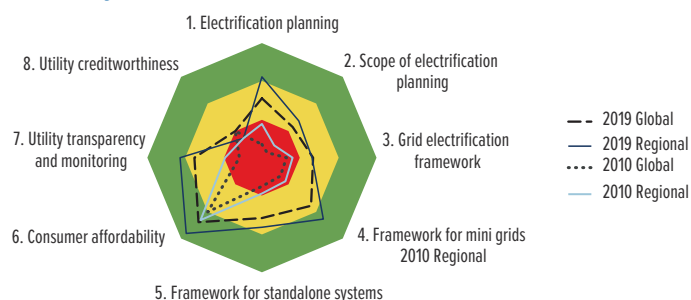
Source: World Bank, RISE 2020

KEY FINDINGS

- Latin America and the Caribbean achieved the same score as the global average (61) in 2019, making it the fourth-best-performing region after the OECD and Europe and Central Asia regions.
- Mexico remained the most advanced country in the region since 2017 thanks to its strong emphasis on investing in clean energy and access policies.
- The fastest-improving countries between 2017 and 2019 were Ecuador (70), Costa Rica (77), and Colombia (80), which achieved annual rates improvement of 5.7, 5.2, and 4.7 points, respectively. Between 2017 and 2019, Guatemala was among the fastest improvers on the access-specific pillars—electricity access and clean cooking. Colombia ranked among the region's top improvers on the clean energy pillars.
- Latin America and the Caribbean earned a higher score in electricity access (60) than other access-deficit regions, surpassing the global average by 7 points. The achievement reflects considerable progress on indicators such as the framework for mini grids, the framework for standalone systems, and electrification planning.
- The region's average score for renewable energy (53) is very close to the global average for the pillar (55), with scores on indicators such as the legal framework for renewable energy and planning for renewable energy expansion actually surpassing the global average. On the other hand, the region's score on energy efficiency (40) is 8 points below the global average for the pillar owing to low scores on indicators such as building energy codes and carbon pricing and monitoring.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010 AND 2019

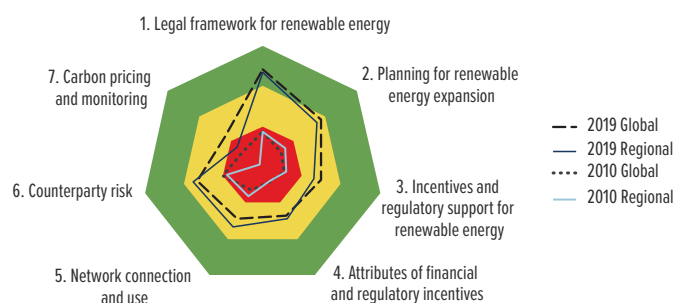
Electricity access



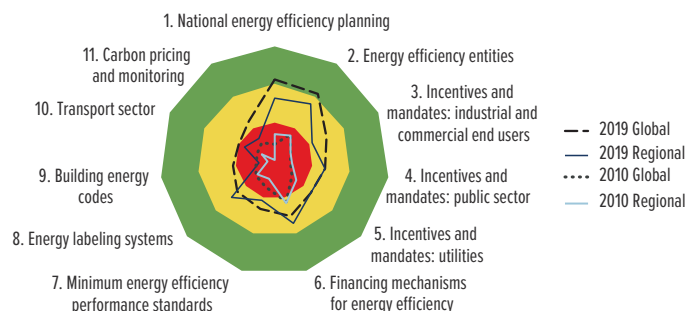
Clean cooking



Renewable energy



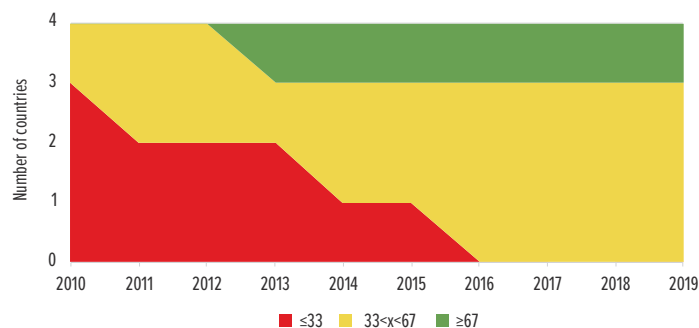
Energy efficiency



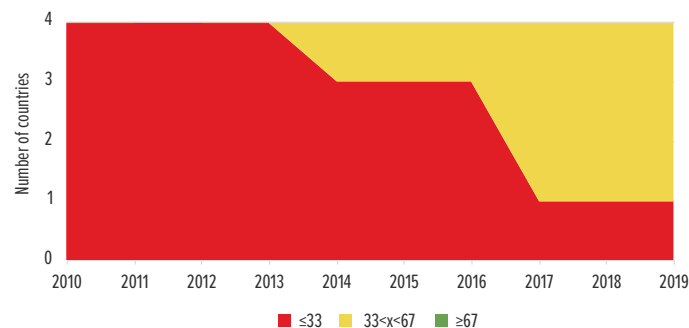
Source: World Bank, RISE 2020

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

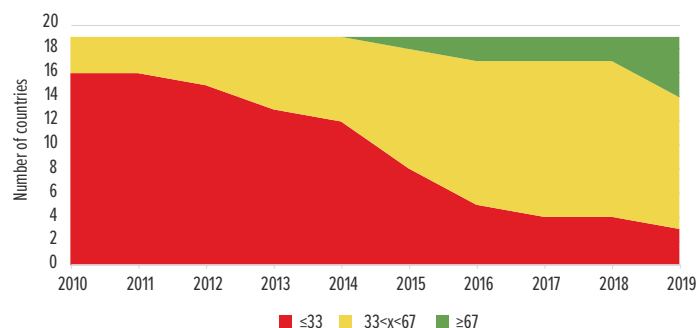
Electricity access^a



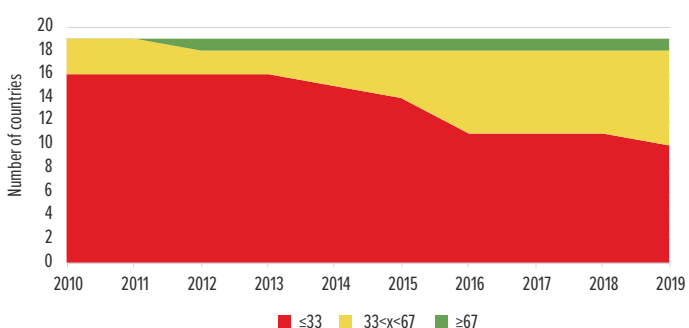
Clean cooking



Renewable energy^b



Energy efficiency



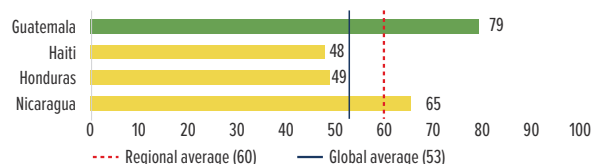
Source: World Bank, RISE 2020

a. The countries covered by the access pillars (electricity access and clean cooking) are Guatemala, Haiti, Honduras, and Nicaragua.

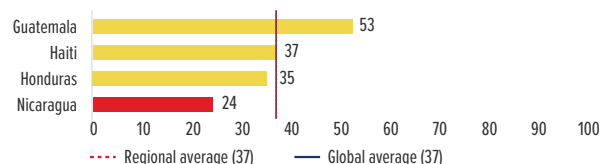
b. The countries covered by the clean energy pillars (renewable energy and energy efficiency) are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela, RB.

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

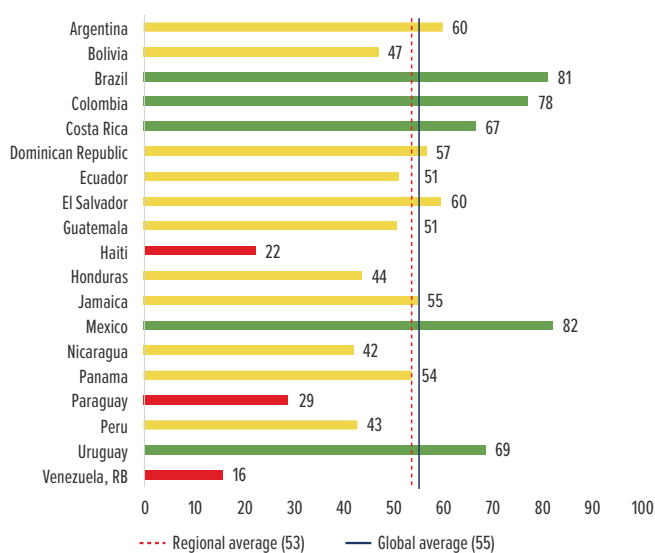
Electricity access



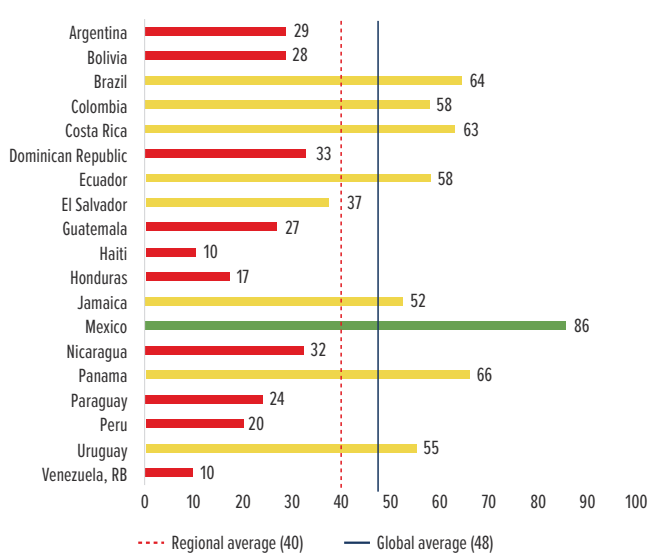
Clean cooking



Renewable energy

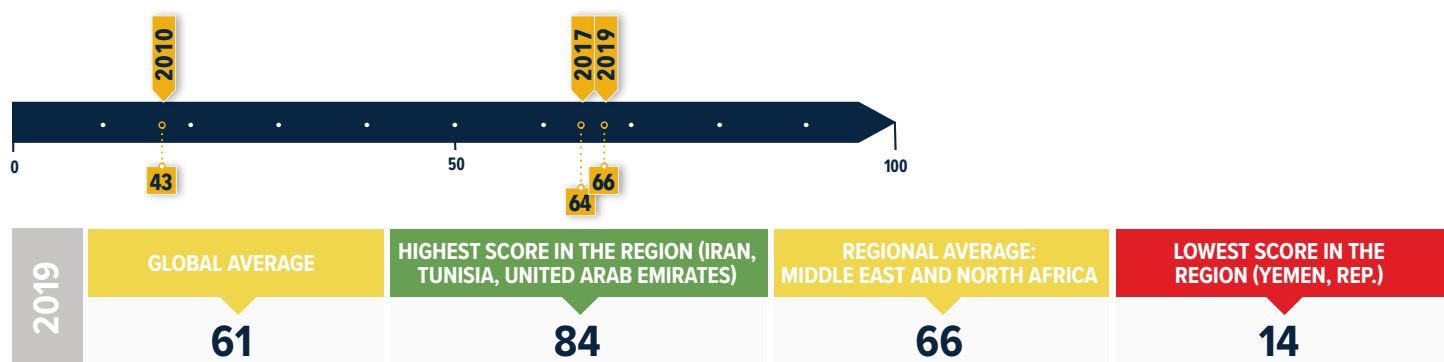


Energy efficiency



Source: World Bank, RISE 2020

MIDDLE EAST AND NORTH AFRICA



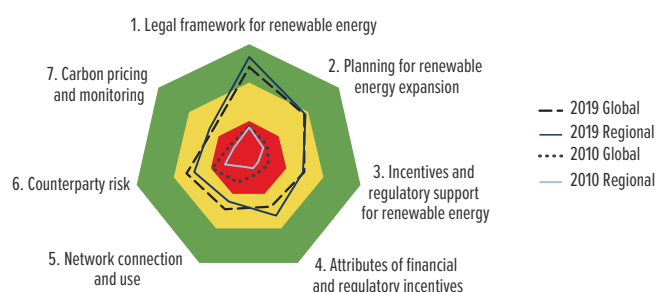
Source: World Bank, RISE 2020

KEY FINDINGS

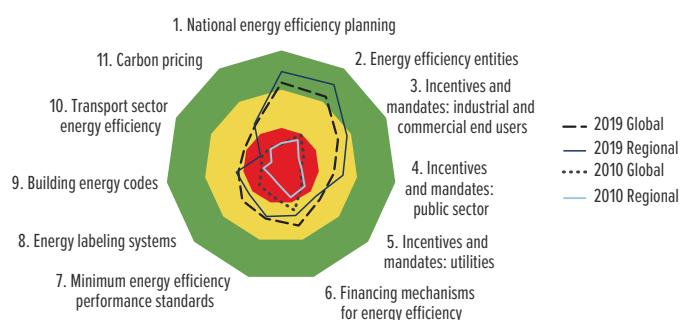
- The Middle East and North Africa region scored five points higher than the global average in 2019, with nine countries in the green zone (advanced policy frameworks) and only one in the red zone (undeveloped policy frameworks)¹.
- The regional average score is helped by strong performance from the Islamic Republic of Iran, Tunisia, and the United Arab Emirates, which all achieved the region's top score (84 points).
- Kuwait showed the fastest improvement on its RISE score between 2017 and 2019 in both renewable energy and energy efficiency, with scores on indicators such as renewable energy regulatory and financial incentives, measuring, reporting and verification (MRV) systems for greenhouse gas emissions, minimum energy efficiency performance standards, and energy efficiency labelling.
- The regional average for energy efficiency exceeds the global average, thanks to good scores on indicators such as national energy efficiency planning and energy efficiency entities.
- For renewable energy, the region's average score is the same as the global average. However, the lack of clear policies on energy efficiency in the transport sector, financing mechanisms for energy efficiency, and carbon pricing and monitoring continue to impede progress.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010 AND 2019

Renewable energy



Energy efficiency

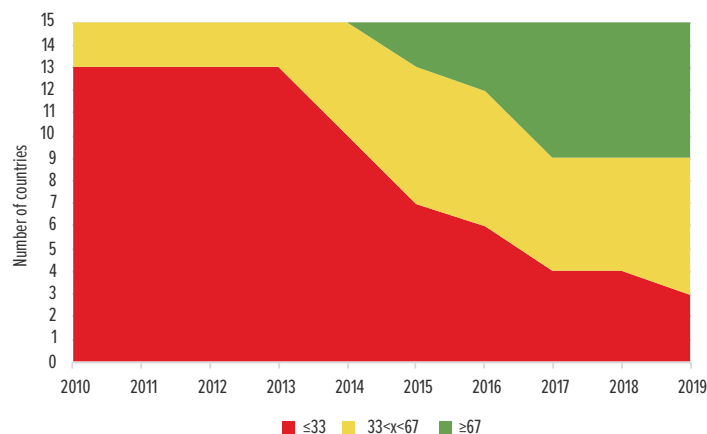


Source: World Bank, RISE 2020

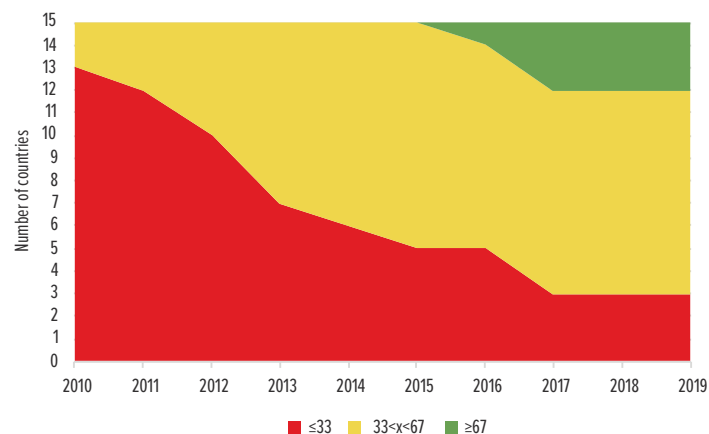
¹ RISE covers the following countries in the Middle East and North Africa region: Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen, Rep. Because the Middle East and North Africa is considered a non-access-deficit region, all countries were assumed to have electrification rates of 100 percent. The Republic of Yemen is the only access deficit country in the region. For more information, see the RISE website: www.rise.worldbank.org.

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

Renewable energy



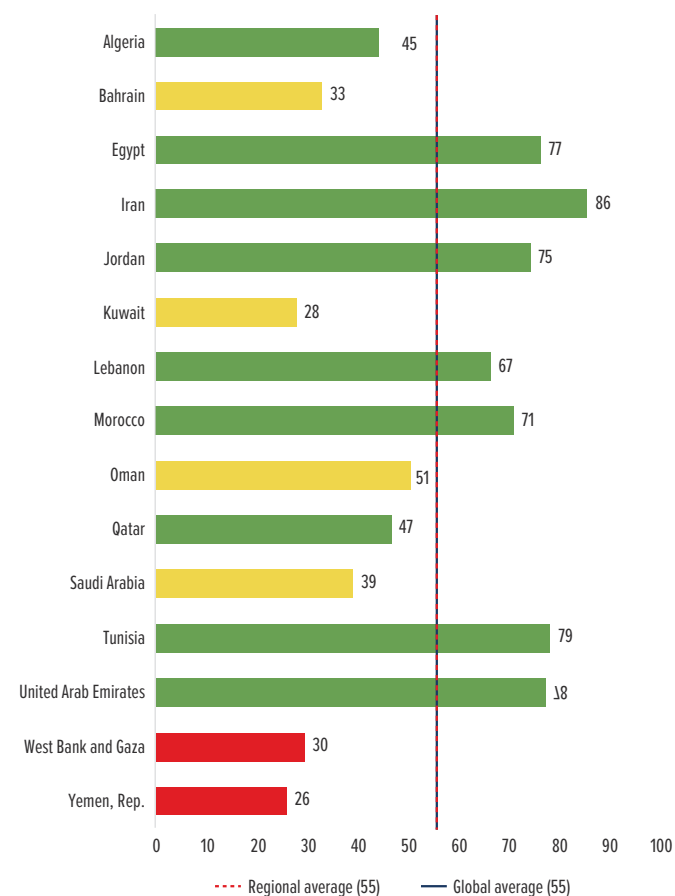
Energy efficiency



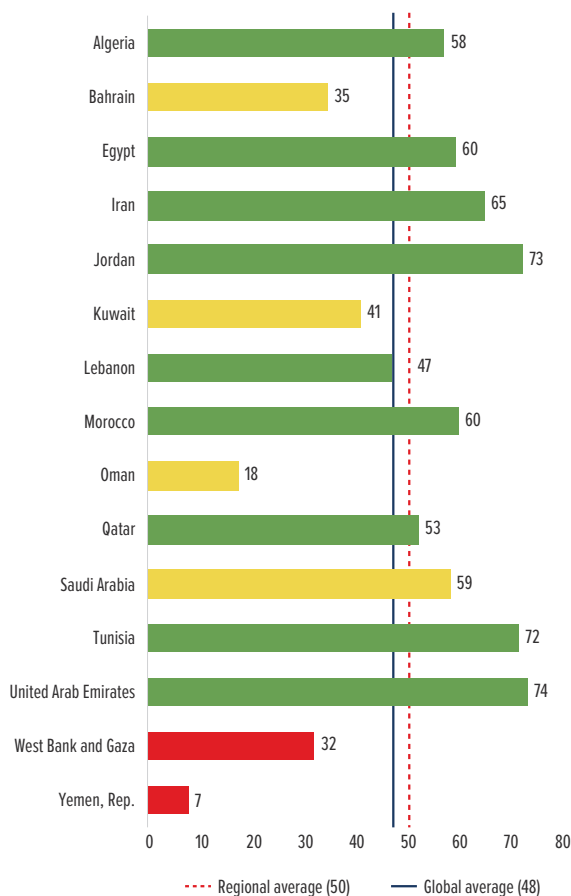
Source: World Bank, RISE 2020

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

Renewable Energy

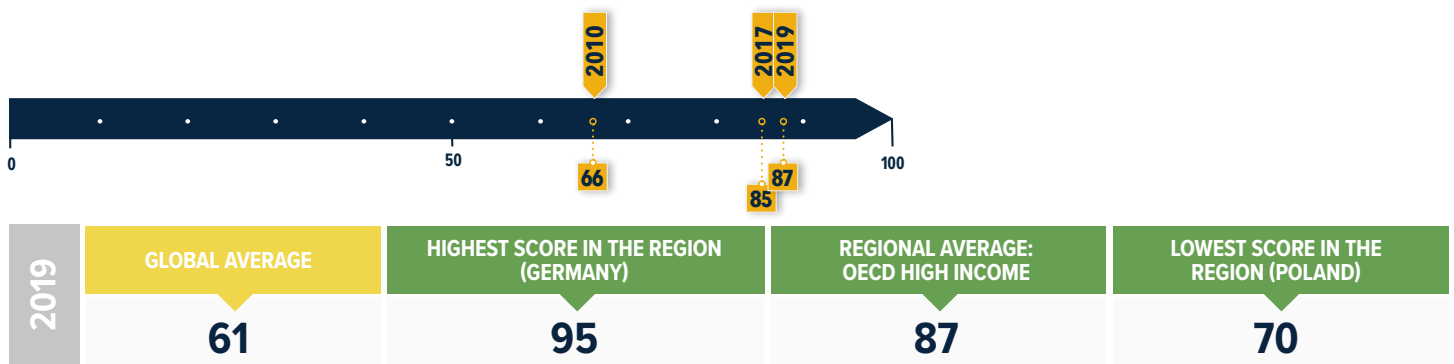


Energy efficiency



Source: World Bank, RISE 2020

OECD (HIGH-INCOME) COUNTRIES



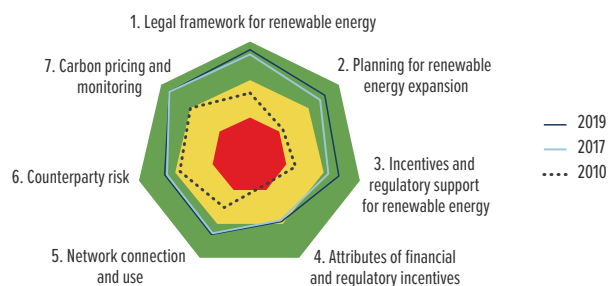
Source: World Bank, RISE 2020

KEY FINDINGS

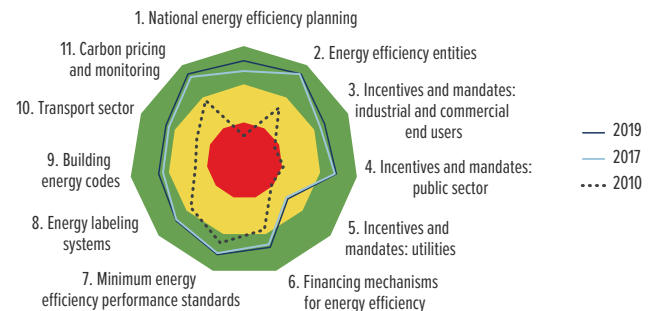
- The regional average score for the high-income countries of the Organisation for Economic Co-operation and Development (OECD) remains, unsurprisingly, the highest of the regions considered in RISE 2020¹.
- Germany is the most advanced country in the region in developing sustainable energy policy across all pillars of the RISE 2020 index, with Denmark following closely behind.
- The Republic of Korea and Switzerland were the fastest improvers in the region between 2017 and 2019.
- The region's scores for renewable energy remain higher than those for energy efficiency.
- Under the energy efficiency pillar, the lagging indicators are utilities incentives and mandates; under the renewable energy pillar, the lowest-scoring indicator is attributes of financial and regulatory incentives.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010, 2017 AND 2019

Renewable energy



Energy efficiency

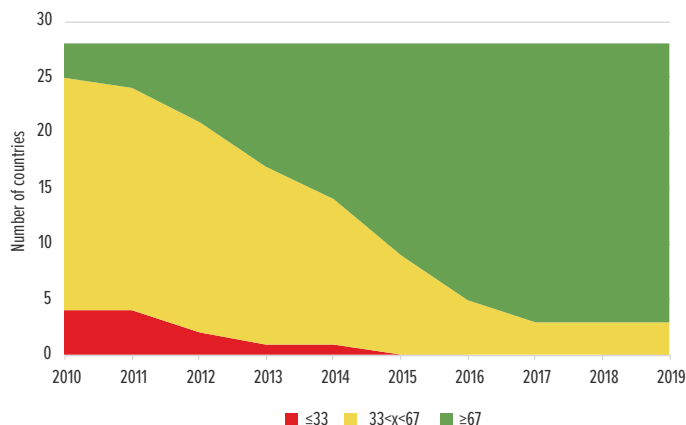


Source: World Bank, RISE 2020

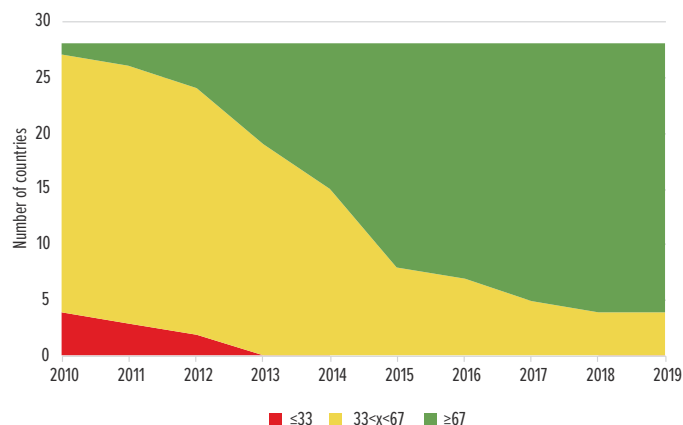
¹ Europe and Central Asia region is considered a nondeficit region, so all countries are assumed to have 100 percent electrification rates. The countries covered by the clean energy pillars (renewable energy and energy efficiency) are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea, Rep., Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom, United States.

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

Renewable energy



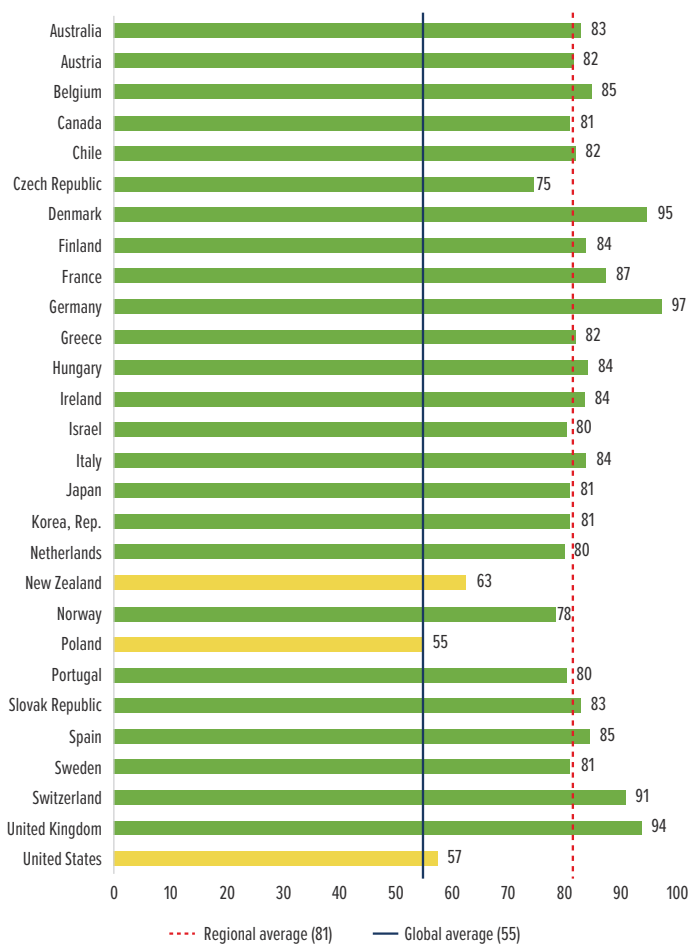
Energy efficiency



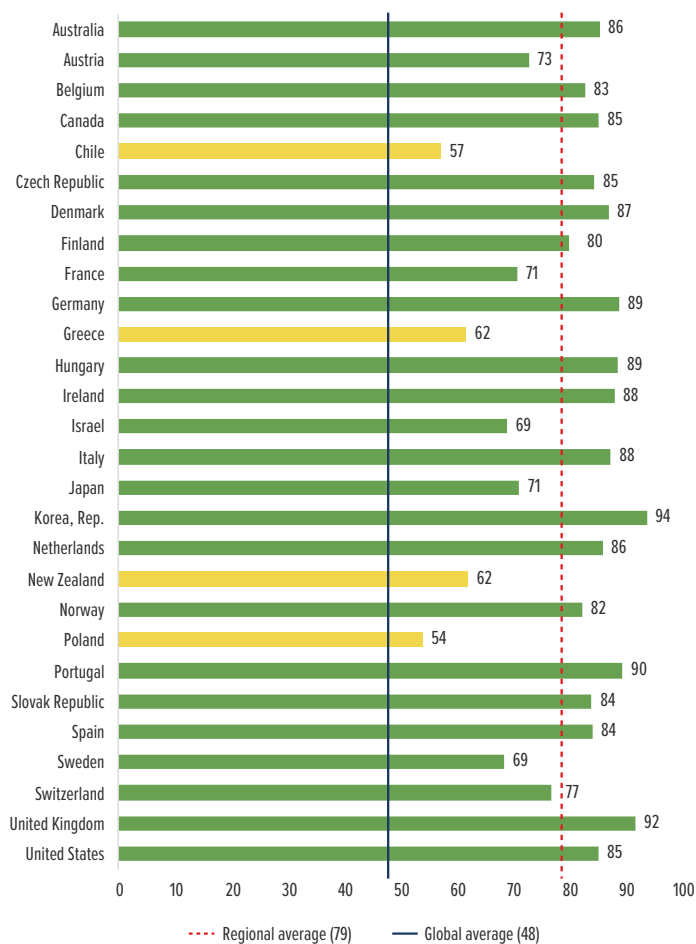
Source: World Bank, RISE 2020

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

Renewable energy

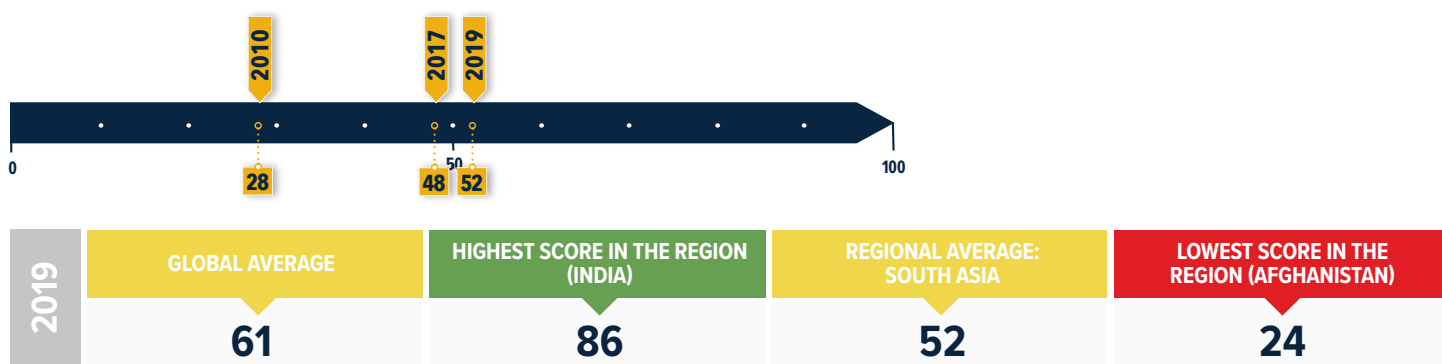


Energy efficiency



Source: World Bank, RISE 2020

SOUTH ASIA



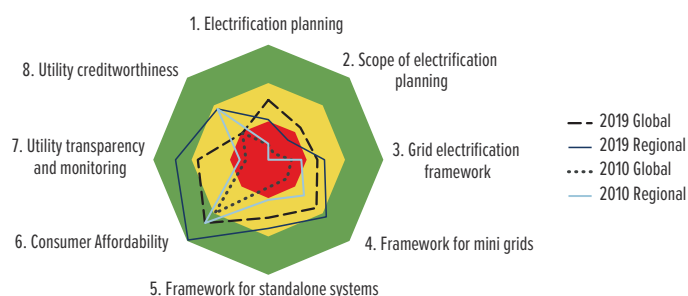
Source: World Bank, RISE 2020

KEY FINDINGS

- As a region, South Asia scored 9 points lower than the global average in 2019. Most of the countries are in the yellow zone (intermediate level of performance), with only one country in the green zone and one country in the red zone¹.
- India remains the most advanced country in the region for developing sustainable energy policy across all pillars, with rising scores since 2010 on indicators such as regulatory support for renewable energy, counterparty risk, carbon pricing, and monitoring, reporting and verification (MRV) for emissions.
- Pakistan and Nepal were the fastest improvers in South Asia between 2017 and 2019.
- The regional average for electricity access was below the global average in 2019, although scores on indicators such as utility transparency and monitoring, consumer affordability, and frameworks for mini-grids actually exceeding the global average.
- South Asia's regional average score on clean cooking was significantly higher than the global average in 2019, with particularly strong scores on indicators such as last-mile distribution and labelling.
- The regional average score for renewable energy was lower than the global average in all areas in 2019, owing to lagging scores on indicators such as planning for renewable energy expansion and carbon pricing and monitoring.
- The regional average score for energy efficiency was significantly lower than the global average in 2019, with scores on indicators such as incentives and mandates in the public sector, transport sector energy efficiency, and energy labelling systems trailing the global average.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010 AND 2019

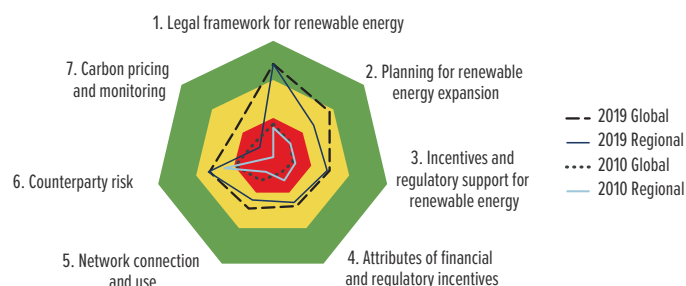
Electricity access



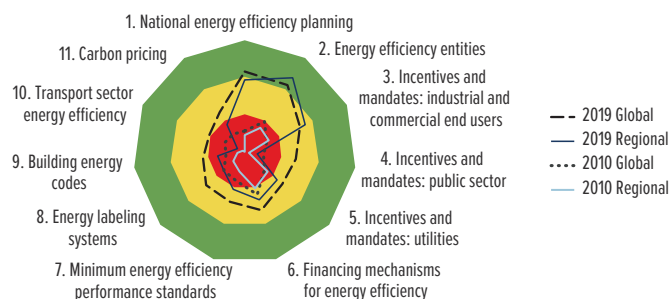
Clean cooking



Renewable energy



Energy efficiency

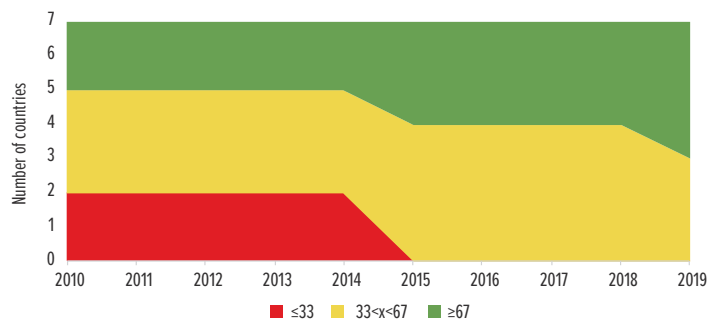


Source: World Bank, RISE 2020

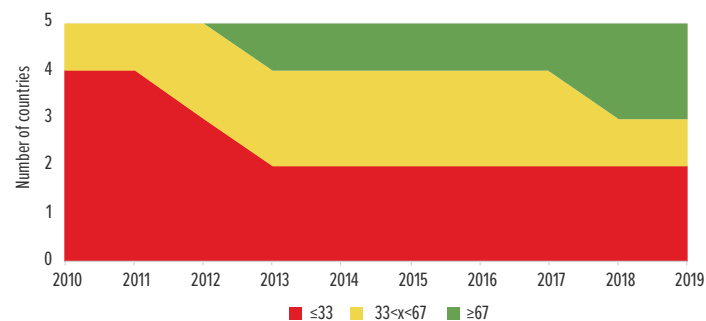
¹ RISE covers the following countries in South Asia: Afghanistan, Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka.

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

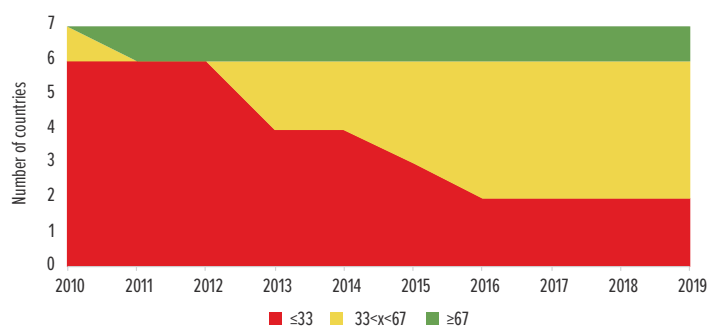
Electricity access



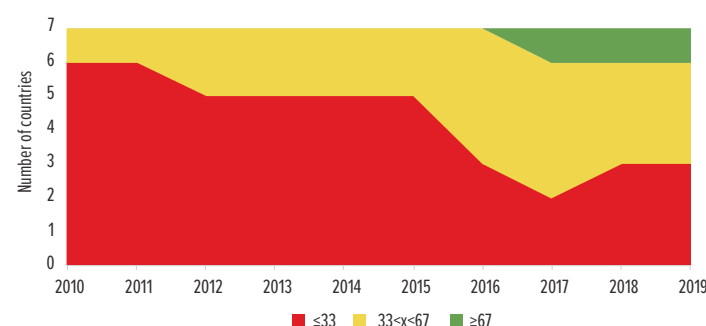
Clean cooking²



Renewable energy



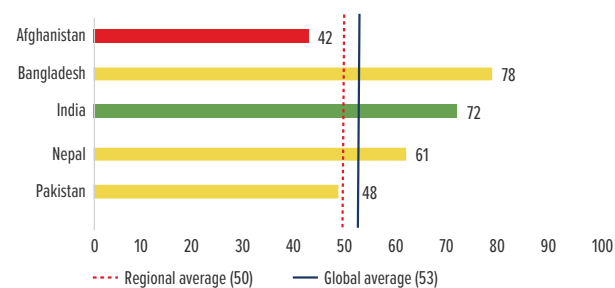
Energy efficiency



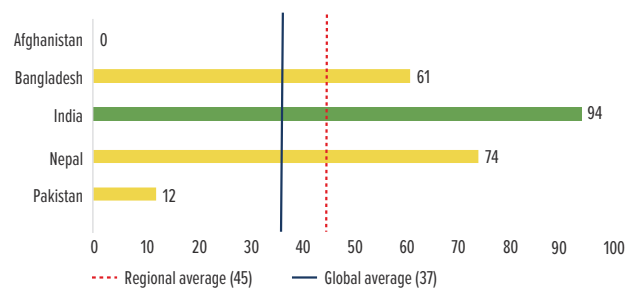
Source: World Bank, RISE 2020

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

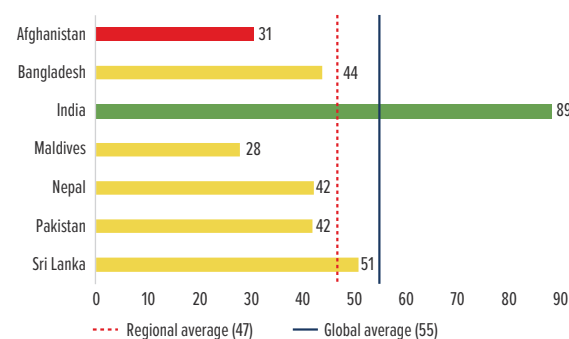
Electricity access



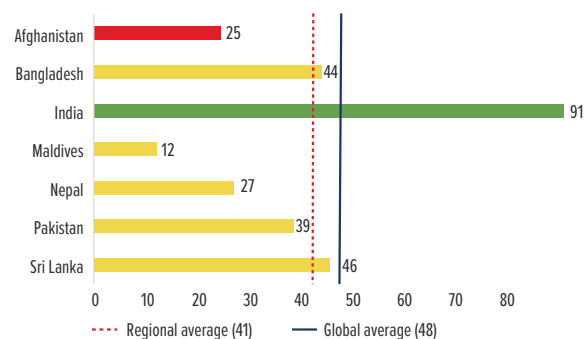
Clean cooking



Renewable energy



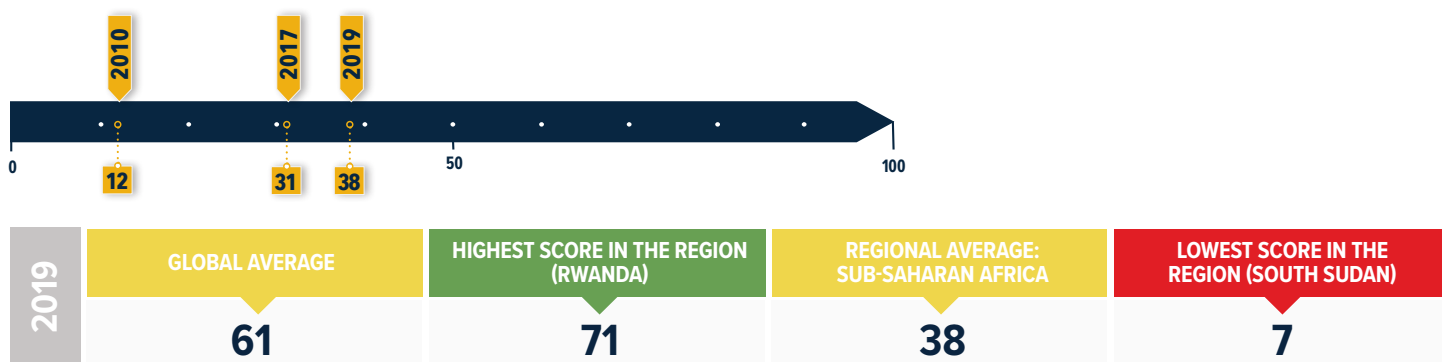
Energy efficiency



Source: World Bank, RISE 2020

2 Of the seven countries in the South Asia region, data on clean cooking was available for five: Afghanistan, Bangladesh, India, Nepal, and Pakistan.

SUB-SAHARAN AFRICA



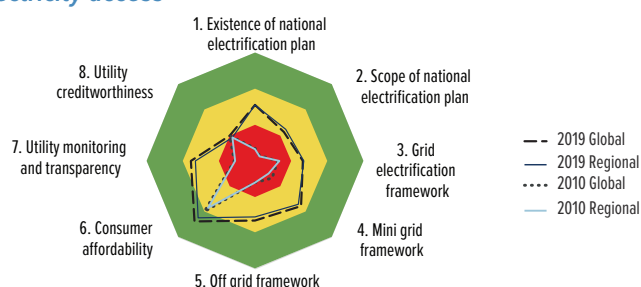
Source: World Bank, RISE 2020

KEY FINDINGS

- The region's average score is the lowest of all world regions: 17 out of 35 Sub-Saharan African countries covered under RISE are in the red zone¹.
- With moderately developed policy and regulatory frameworks on all four pillars of sustainable energy, Rwanda leads the region on the RISE 2020 index.
- Chad and Tanzania made the most progress across the four pillars between 2017 and 2019. Chad's progress was enabled by holistic improvements across renewable energy indicators – in 2018 alone, an action plan and target for renewable energy was instituted, and legal framework for private sector ownership of generation was set up along with aggressive utility energy efficiency incentive programs. Tanzania's fast progress was due to improvements in clean cooking planning, institutional capacity building, awareness, standards and consumer incentives, along with providing financial and regulatory support for renewable electricity, fixed-tariffs for small producers, renewable grid integration, and monitoring, reporting and verification for greenhouse gas emissions.
- In a positive development in electricity access policymaking, the Sub-Saharan Africa region caught up with the global average in 2019, even surpassing it on grid expansion and planning, but falling short on mini-grid and off-grid related policymaking, consumer affordability, and utility transparency and creditworthiness.
- One-fifth of the countries in the region have yet to adopt any clean cooking policies. With the exception of tracking progress on uptake, the region lags behind the global average on all other indicators of policymaking related to clean cooking.
- On renewable energy, not only does Sub-Saharan Africa trail the global average on every indicator, it is also slowing down global progress. Its performance is also particularly poor on energy efficiency, as half of the region's countries have yet to initiate meaningful policymaking on this pillar.

INDICATOR PROGRESS BY PILLAR (OUT OF 100), 2010 AND 2019

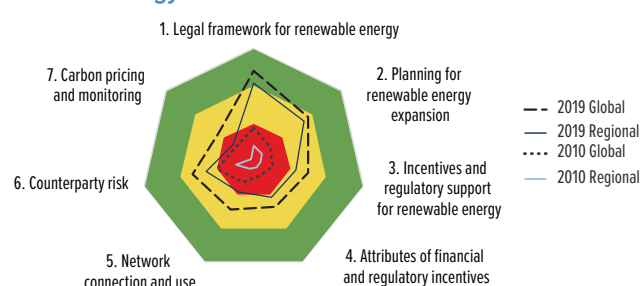
Electricity access



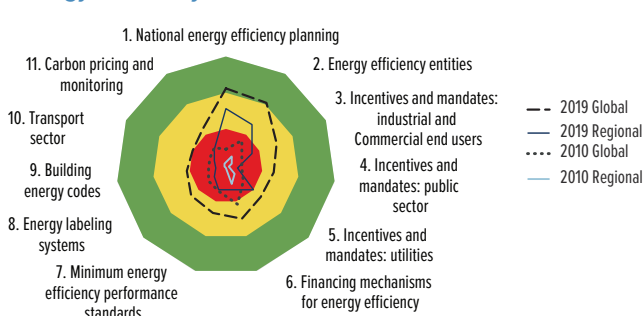
Clean cooking



Renewable energy



Energy efficiency

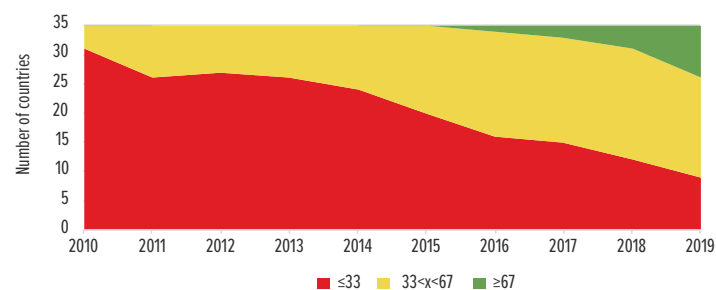


Source: World Bank, RISE 2020

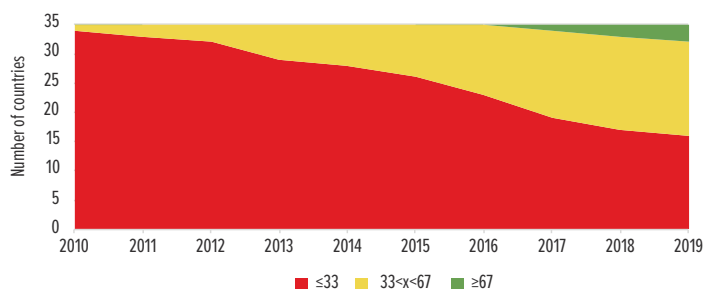
¹ RISE covers the following countries in Sub-Saharan Africa: Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Dem. Rep., Congo, Rep., Côte d'Ivoire, Eritrea, Ethiopia, Ghana, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe

DISTRIBUTION OF RISE SCORES BY PILLAR, 2010-19

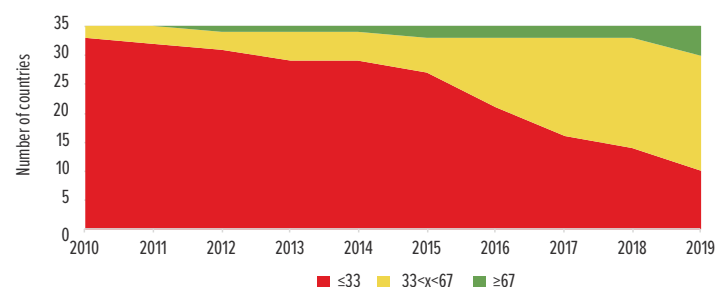
Electricity access



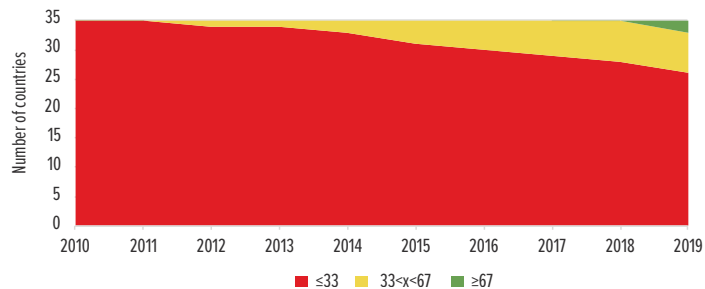
Clean cooking



Renewable energy



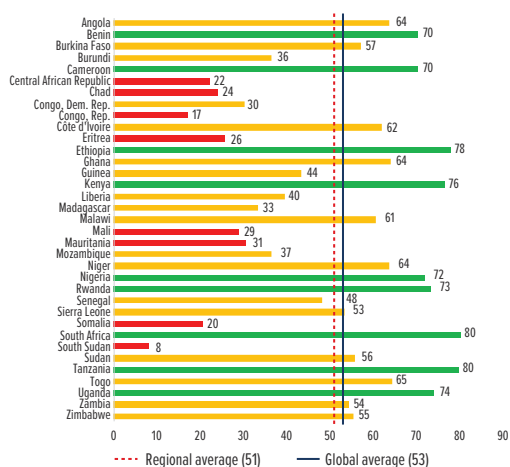
Energy efficiency



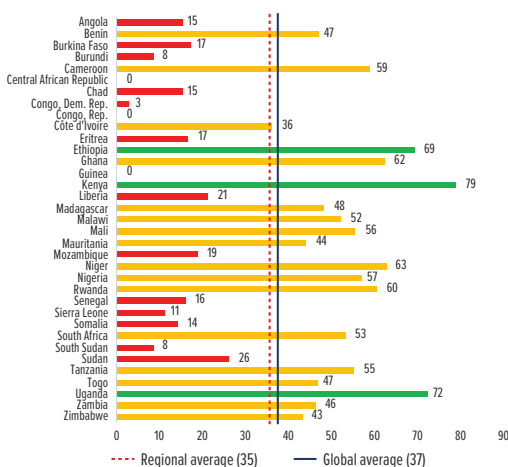
Source: World Bank, RISE 2020

COUNTRY SCORES BY PILLAR (OUT OF 100), 2019

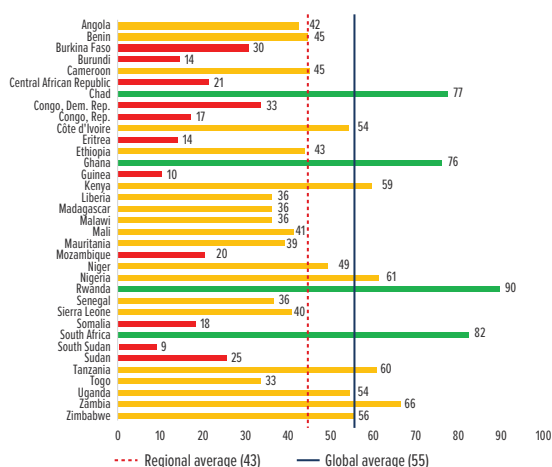
Electricity access



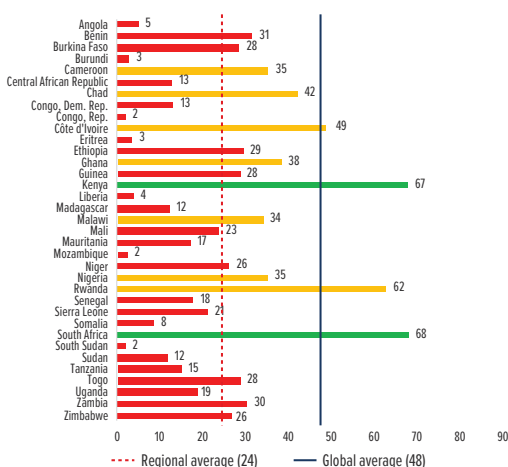
Clean cooking



Renewable energy



Energy efficiency



Source: World Bank, RISE 2020

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
DRC	Democratic Republic of the Congo
EAP	East Asia & Pacific
ERI	Electricity Regulatory Index
FCV	Fragility, Conflict & Violence
GDP	Gross Domestic Product
GERI	Global Electricity Regulatory Index
GNI	Gross National Income
HVAC	Heating, Ventilation, and Air Conditioning
IDCOL	Infrastructure Development Company Limited
IEA	International Energy Agency
IRENA	International Renewable Energy Agency
LAC	Latin America & Caribbean
Lao PDR	Lao People's Democratic Republic
LPG	Liquefied Petroleum Gas
MENA	Middle East and North Africa
NGOs	Non-government organizations
OECD	Organization for Economic Co-operation and Development
PV	Photovoltaics
RISE	Regulatory Indicators for Sustainable Energy
RPSR	Rethinking Power Sector Reform
SA	South Asia
SSA	Sub-Saharan Africa
SDG 7	Sustainable Development Goal 7
UNSD	United Nations Statistics Division
WB	World Bank
WHO	World Health Organization



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legal and regulatory documents are available in:

<http://RISE.esmap.org>

