

RENEWABLE ENERGY



HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Double the share of renewable energy in the global energy mix

QUICK FACTS

- To meet the SEforALL objective to double the share of renewable energy in the global energy mix requires the share of renewables to rise from 18.3 percent of Total Final Energy Consumption (TFEC) in 2014 to 36 percent by 2030.
- Almost half of the current share of renewable energy in TFEC or 8.4 percent is linked to the traditional use of biomass. Discrepancies in data collection suggest that traditional biomass use may be up to 50 percent lower than what was reported in the Global Tracking Framework 2017.
- Over 2012-14, 13 out of 20 high impact countries improved their share of renewable energy in TFEC, primarily by accelerating modern renewables. Italy and the United Kingdom added over 1 percent to their renewable energy share annually.
- The share of renewable energy in TFEC exceeded 30 percent in four of the 20 high impact countries - Nigeria, Brazil, Indonesia and India. With the exception of Brazil, this is largely linked to traditional uses of biomass.
- Meeting the SEforALL objective by 2030 will require the widespread adoption of more ambitious policies, such as a large-scale shift toward the electrification of transport.

CONTEXT

- Despite rapid growth in renewable energy consumption, the overall share of renewable energy has been moving more slowly due to continued rapid growth in TFEC.
- Recent growth in the share of renewables in TFEC globally has been concentrated in the power sector. It has proved harder to increase the share of renewables for heat and transport applications that represent 50 percent and 30 percent of TFEC respectively.
- Policy developments that address the heating and transport sectors continue to be slow and have been primarily focused on solar thermal heating systems and further support to biofuels. Policy measures have not yet caught up with rapid deployment of electric vehicles and their possible role as an enabler for better integration of variable renewable energy sources.

ADDITIONAL RESOURCES

[The Global Tracking Framework 2017](#)

[Regulatory Indicators for Sustainable Energy 2017](#)

[SEforALL Africa Hub](#)

[SEforALL Asia-Pacific Hub](#)

[SEforALL Latin America and the Caribbean Hub](#)

[International Renewable Energy Agency](#)

[International Energy Agency](#)

[REN21](#)

[Bloomberg New Energy Finance](#)

RENEWABLE ENERGY

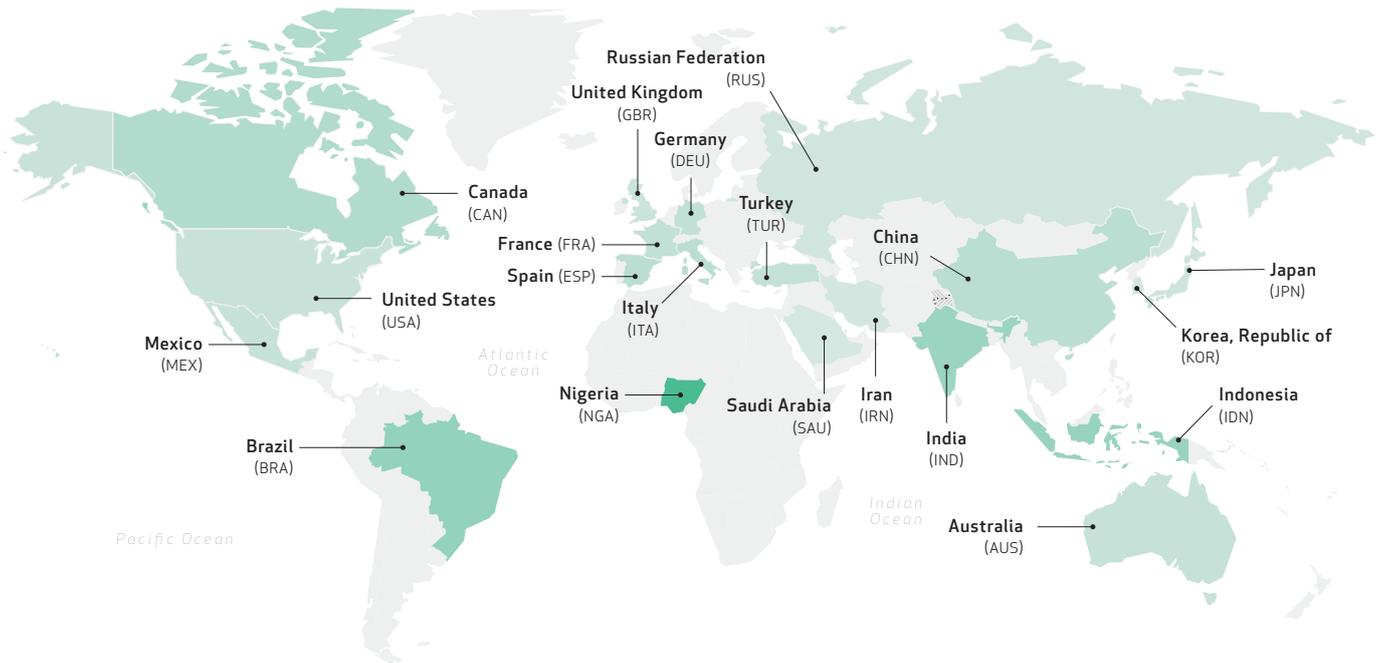


HIGH-IMPACT COUNTRIES

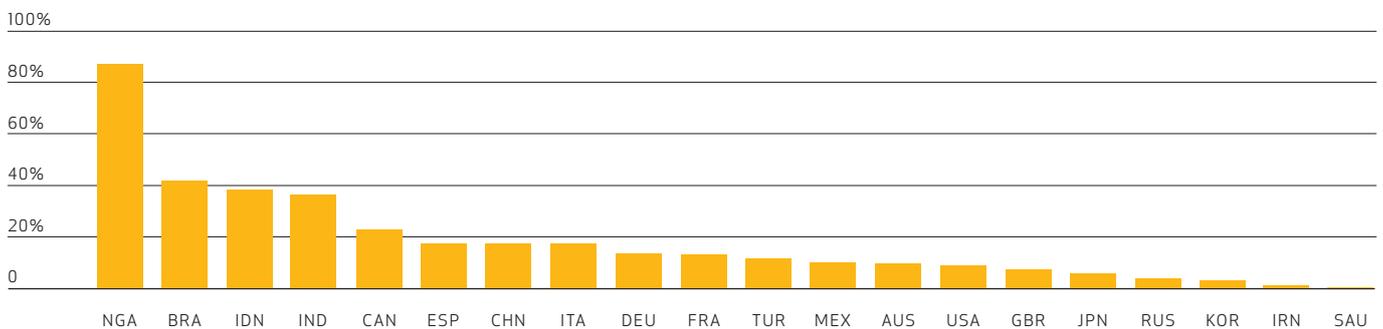
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Double the share of renewable energy in the global energy mix

PERCENTAGE OF RENEWABLE ENERGY IN TOTAL FINAL ENERGY CONSUMPTION, 2014



SEE THE NUMBERS



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

Sources: International Energy Agency (IEA) and the World Bank. 2017. "Progress Towards Sustainable Energy: Global Tracking Framework 2017" (April), World Bank, Washington, DC. Data extracted from <http://gtf.esmap.org/> on 06/22/2017.

ENABLING POLICIES



HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Which countries have an enabling environment for investment in renewable energy?

QUICK FACTS

- Globally, three quarters of countries covered by Regulatory Indicators for Sustainable Energy (RISE) have adopted legislation and strategic plans and assigned responsible institutions to achieve those targets. Almost all countries have a renewable energy target.
- Where wind and solar power account for at least 5 percent of total electricity generated in 2014, more than 80 percent of countries globally have completed a grid integration study to understand how to bring variable renewable energy into the grid.
- The average permitting time for a renewable energy project for the 111 countries covered by RISE is about 500 days. Small-scale, grid-connected, solar and wind projects usually benefit from quicker procedures.
- In 2015, India announced an ambitious goal to increase its renewable power capacity fivefold in seven years. Of this increase, 57 percent would be solar power and 34 percent wind power.
- China's Renewable Energy Law (2005) set ambitious renewable energy targets underpinned with clear strategies and investment plans. The target for non-fossil fuel energy is 15 percent of national total energy consumption by 2020. There are technology-specific targets for solar power, wind power, hydropower and geothermal energy. Investment incentives and feed-in tariffs are in place for wind and solar power.
- Twenty-three countries have a carbon pricing mechanism in place to accompany the deployment of renewable energy. This includes 15 countries that subscribe to the European Union's Emission Trading Scheme (EU-ETS), a key tool to meet EU climate and energy targets. Australia and Turkey are the only countries that have introduced mandatory reporting of greenhouse gas emissions by emitters while still considering the implementation of a carbon pricing mechanism.

CONTEXT

- RISE offers policy makers and investors detailed country-level insights on the policy and regulatory environment for sustainable energy across 111 countries globally.
- 77 percent of the 111 countries covered by RISE do not have carbon pricing and monitoring schemes in place or require mandatory reporting of greenhouse gas emissions. Where carbon pricing mechanisms are in place they almost always form part of the policy framework for renewable energy and climate action, as reflected in countries' Nationally Determined Contributions.

ADDITIONAL RESOURCES

[Regulatory Indicators for Sustainable Energy 2017](#)
[Global Tracking Framework 2017](#)
[International Renewable Energy Agency](#)
[SEforALL Africa Hub](#)
[SEforALL Asia-Pacific Hub](#)

[SEforALL Latin America and the Caribbean Hub](#)
[International Energy Agency](#)
[REN21](#)
[Bloomberg New Energy Finance](#)

Sources: World Bank 2017. "Regulatory Indicators for Sustainable Energy. A Global Scoreboard for Policy-Makers", World Bank, Washington, DC. World Bank and Ecofys 2017.

ENABLING POLICIES



HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Which countries have an enabling environment for investment in renewable energy?

QUICK FACTS

- About three quarters of the 111 countries covered in Regulatory Indicators for Sustainable Energy (RISE) have adopted legislation and strategic plans governing the renewable energy sector and assigned responsible institutions to achieve them. However, primary legislation is less common in Sub-Saharan Africa, North Africa and the Middle East.
- While a strong enabling environment alone does not guarantee investment flows at scale, countries that have developed sizeable renewable energy capacity (above 100 MW) tend to have stronger legislation in place.
- Thirty eight percent of countries covered by RISE have conducted an integration study to understand how to bring variable renewable energy into the grid. Germany, the United States, Spain and the United Kingdom feature some of the most advanced renewable energy integration frameworks.
- The number of procedures necessary to set up a grid-connected renewable energy facility ranges from two in the Netherlands to 17 in the Russian Federation.

CONTEXT

- RISE offers policy makers and investors detailed country-level insights on the policy and regulatory environment for sustainable energy across 111 countries globally.
- Many important elements of policy support for renewable energy are common across all regions and incomes, including renewable energy targets and action plans, primary legislation and legal private ownership of generation, and financial and regulatory incentives like feed-in tariffs or competitive tenders.
- Technically sophisticated studies, such as those needed to evaluate the integration of variable renewable energy capacity in the grid, are becoming more important as the share of renewable capacity grows in the power mix.

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HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Which countries have an enabling environment for investment in renewable energy?

REGULATORY INDICATORS FOR SUSTAINABLE ENERGY (RISE), BY RENEWABLE ENERGY INDICATOR

KEY

HIGH SCORE (100-67)

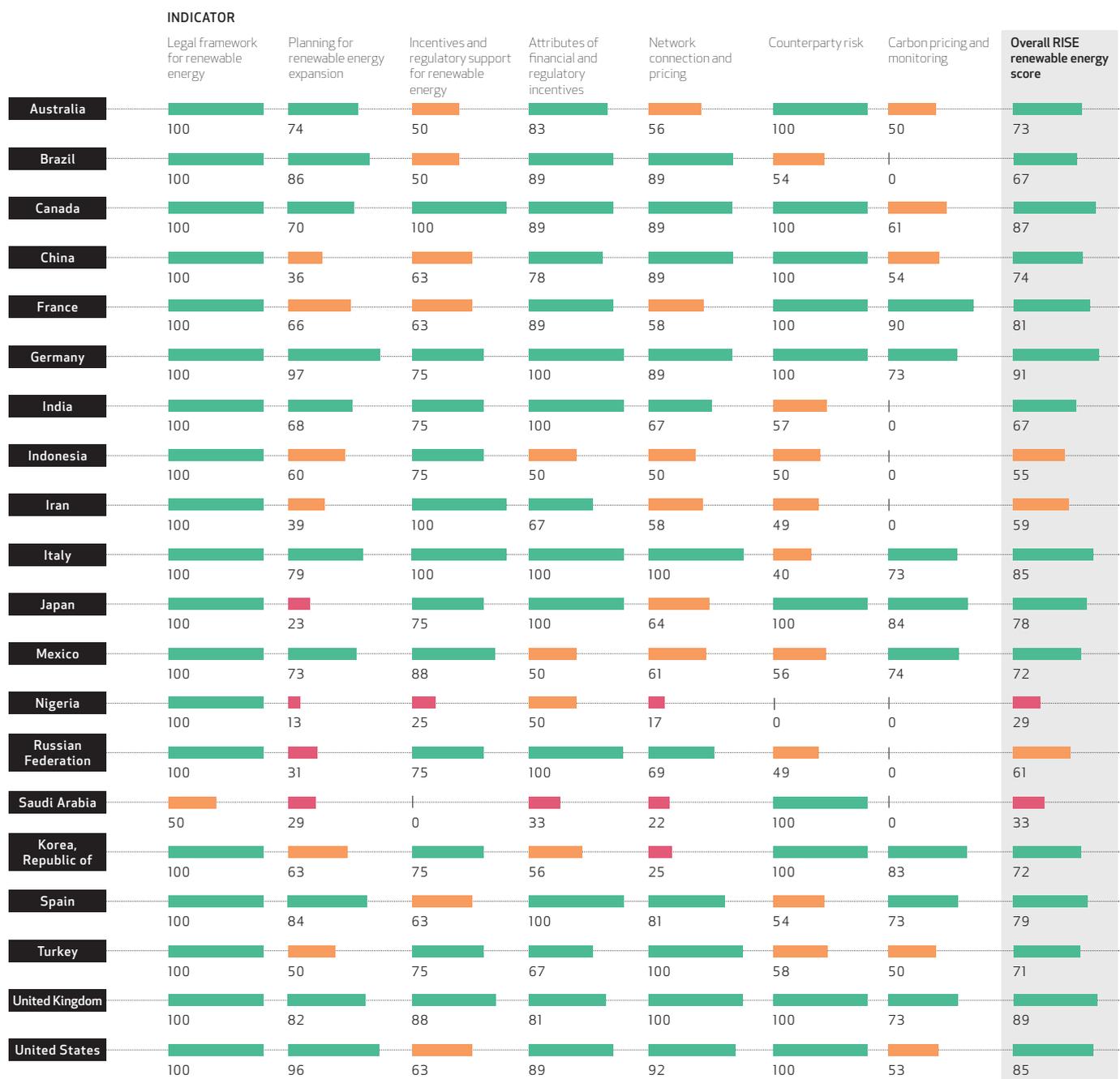
Most elements of a strong policy framework to support sustainable energy are in place

MEDIUM SCORE (66-34)

Significant opportunities exist to strengthen the policy framework

LOW SCORE (33-0)

Few or no elements of a supportive policy framework have been enacted



Note: Regulatory Indicators for Sustainable Energy (RISE) is a suite of indicators that assesses the legal and regulatory environment for investment in sustainable energy.

Source: Regulatory Indicators for Sustainable Energy (RISE), World Bank Group, 2017. Data extracted from <http://rise.esmap.org/> on 06/23/2017.

Which countries have an enabling environment for investment in renewable energy?

QUICK FACTS

- The six top-performing high-impact countries for renewable energy in Regulatory Indicators for Sustainable Energy (RISE) – including Germany, the United Kingdom, France, Spain, Japan and South Korea - also score highly for reliable power supplies and transparent electricity tariffs.
- Doing Business' Getting Electricity indicator highlights the Republic of Korea for the fast process – 3 procedures and 18 days - to get access to a quality electricity services.
- With strong policies and regulatory incentives, as well as a plentiful and skilled labor force across the full supply chain, China has invested more in renewable energy than any other country in the world, according to RISE. Over 2010–15, investment renewable energy investment - for solar, wind, geothermal, small hydropower, and biomass - reached \$377 billion, more than the next two countries combined, the United States and Germany.

CONTEXT

- RISE offers policymakers and investors detailed country-level insight on the policy and regulatory environment for sustainable energy across 111 countries globally.
- Doing Business measures aspects of regulation that enable or prevent private sector businesses from starting, operating and expanding. It ranks economies from 1-190 based on the regulatory environment by sorting aggregate scores on 10 topics and giving equal weight to each topic.
- Doing Business' Getting Electricity indicator highlights the importance of a reliable power supply and transparent tariffs structures to support effective business activity and the deployment of renewable energy at scale.
- The high renewable energy penetration rates observed in high-impact countries such as Germany, the United Kingdom, Spain or Australia, generally result from a combination of favorable policy, regulatory and business environments.
- Doing Business's Getting Electricity indicators shows that India, Indonesia and Kenya improved the administrative processes needed to get a connection to an electricity network while also reducing the cost of connection. Further effort is needed to mitigate the risks of payment delays or defaults, reduce delays for obtaining construction permits, and meet domestic renewable targets in a timely manner.

ADDITIONAL RESOURCES

[Regulatory Indicators for Sustainable Energy 2017](#)

[Global Tracking Framework 2017](#)

[Doing Business 2017](#)

[SEforALL Africa Hub](#)

[SEforALL Asia-Pacific Hub](#)

[SEforALL Latin America and the Caribbean Hub](#)

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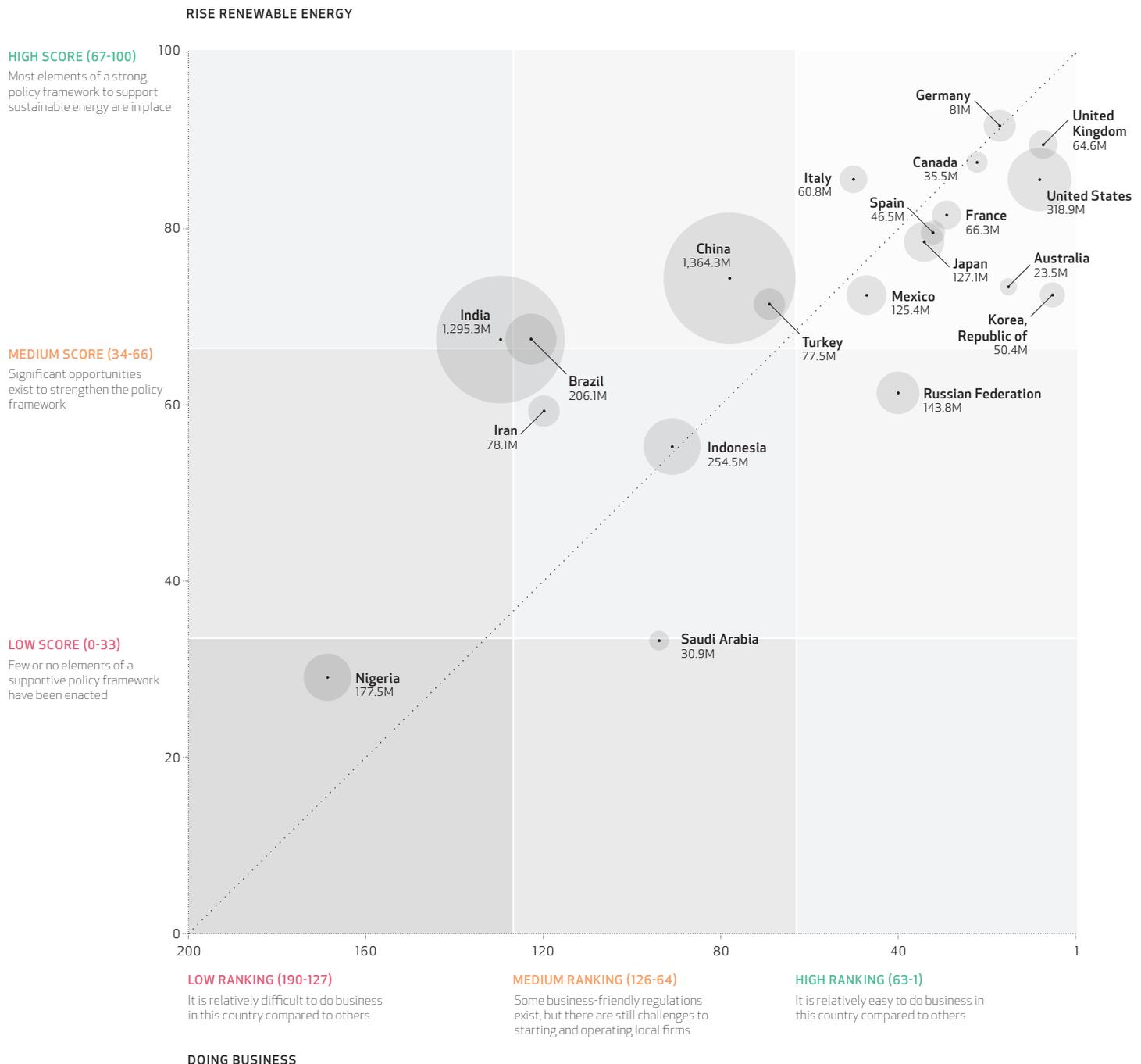
Countries whose efforts are critical to the achievement of SEforALL objectives globally

Which high-impact countries have an enabling environment for investment in renewable energy?

REGULATORY INDICATORS FOR SUSTAINABLE ENERGY (RISE) AND DOING BUSINESS

KEY

● Population, 2014 values (relative to countries shown)



Notes: 1. Regulatory Indicators for Sustainable Energy (RISE) is a suite of indicators that assesses the legal and regulatory environment for investment in sustainable energy. 2. Doing Business is a relative ranking of 190 economies based on the regulatory environment. It does this by sorting the aggregate scores of 11 topics, each consisting of several indicators, giving equal weight to each topic. Sources: Regulatory Indicators for Sustainable Energy (RISE), World Bank Group, 2017. Doing Business, <http://www.doingbusiness.org/rankings>, 2017. Data extracted from <http://rise.esmap.org/> on 06/23/2017. World Development Indicators, World Bank Group, 2014. Data extracted from http://data.worldbank.org/indicator/SP.POPTOTL?end=2014&name_desc=false&view=chart on 06/20/2017.

ENABLING POLICIES



HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Which high-impact countries have an enabling environment for investment in energy efficiency and renewable energy?

QUICK FACTS

- More than three-quarters of all countries covered by Regulatory Indicators for Sustainable Energy (RISE) score well on the legal framework for renewable energy, compared to 9 percent that score well on having energy efficiency mandates and incentives for utilities in place.
- High performers on RISE's energy efficiency indicator often have strong regulations in place to support renewable energy deployment. However, the average RISE score for energy efficiency is more than ten percentage points below that for renewable energy.
- Official renewable energy targets have become nearly universal, with some form of public commitment in 93 percent of countries covered by the RISE indicators.
- Most of the world's largest energy consumers score in the top tier of the RISE renewable energy indicator indicating strong policy frameworks are in place.

CONTEXT

- RISE offers policy makers and investors detailed country-level insights on the policy and regulatory environment for sustainable energy across 111 countries globally.
- RISE shines a light on the need to attach greater political and policy priority to energy efficiency. With the exception of the highest income countries, many countries have few or no policies in place to support the adoption of ambitious energy efficiency measures. In contrast, RISE highlights strong progress and broad uptake in advancing renewables policy across many countries.
- Among the countries where wind and solar power account for at least 5 percent of total electricity generated in 2014, more than 80 percent have completed a grid integration study to understand how to integrate variable renewable energy.
- India and China together represent more than a third of the global population. Driven in part by clean air imperatives and low-carbon development ambitions they both have high scores on RISE for renewable energy and energy efficiency. China's 13th Five-Year Plan sets a 15 percent target of non-fossil energy as a share of total final energy consumption by 2020, and a 15 percent reduction in energy intensity compared to 2015 levels. India has placed energy conservation at the heart of its development strategy through multiple initiatives such as "Unnat Jeevan By Affordable LEDs and Appliances for All", the world's largest zero-subsidy LED bulb program for domestic consumers.

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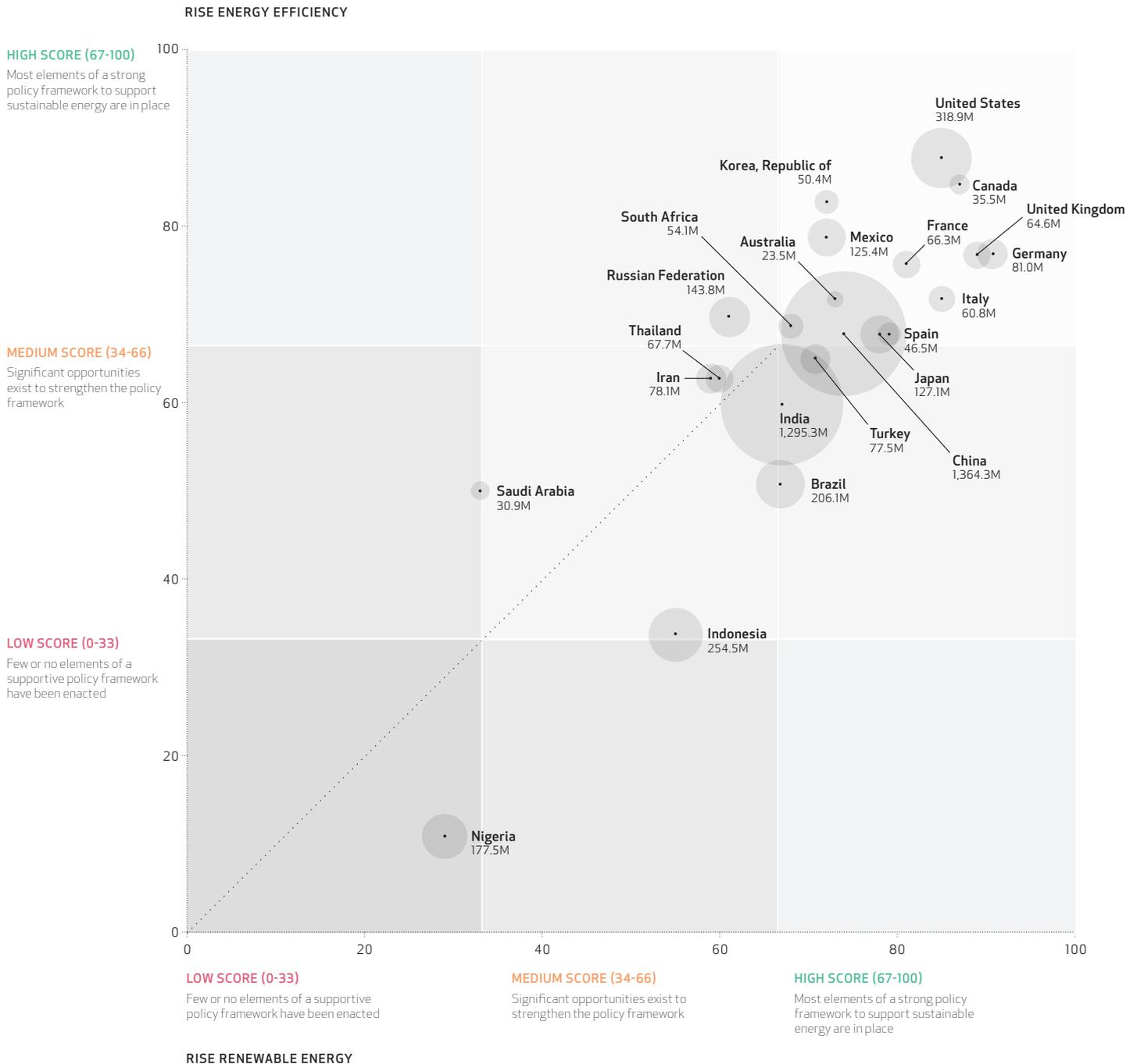
[Bloomberg New Energy Finance](#)

Which high-impact countries have an enabling environment for investment in energy efficiency and renewable energy?

REGULATORY INDICATORS FOR SUSTAINABLE ENERGY (RISE) FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY

KEY

Population, 2014 values (relative to countries shown)



Note: Regulatory Indicators for Sustainable Energy (RISE) is a suite of indicators that assesses the legal and regulatory environment for investment in sustainable energy.

Source: Regulatory Indicators for Sustainable Energy (RISE), World Bank Group, 2017. Data extracted from <http://rise.esmap.org/> on 06/23/2017. World Development Indicators, World Bank Group, 2014. Data Extracted from http://data.worldbank.org/indicator/SP.POP.TOTL?end=2014&name_desc=false&view=chart on 06/20/2017.