

# PAYG Market Attractiveness Index – User Guide and Data

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## Structure and methodology of the index

The index is an Excel based tool designed for user flexibility and ease of use. It incorporates clearly highlighted user input options, automated updating of results and a selection of outputs to quickly access performance across the overall index and its pillars, an overview of performance for a particular country, or performance across specific indicators. This section provides a short description of how to use and interpret the Excel based tool.

The index is divided into 3 pillars, and a total of 10 sub-pillars. Users can select the importance (weight) placed on each of the three pillars, and on each of the sub-pillars within these three areas. The location of the 71 indicators in the index is shown in Figure 1.

Figure 1. Index structure and indicator location

Demand Side	Supply Pillar	Enabling Environment Side
<b>Market size</b>	<b>Access to finance</b>	<b>ICT</b>
D_1 Population	S_1 Firms identifying access to finance as a major constraint	EE_1 Mobile cellular subscriptions
D_2 National population density	S_2 Affordability of financial services	EE_2 Secure Internet servers
D_3 Population density distribution	S_3 Availability of early stage equity	EE_3 Individuals using the Internet
D_4 Rural population	S_4 Financial Markets - Short Term Economic Risk	EE_4 SIM penetration
D_5 Population growth rate	S_5 Financial Markets - Long Term Economic Risk	EE_5 Mobile broadband
D_6 Rate of urbanisation		EE_6 Number of mobile connections per capita
D_7 Urban non-slum population	<b>Operational considerations</b>	<b>Legal and regulatory</b>
D_8 Unconnected rural population	S_6 Rural access index	EE_7 National programs to develop or support stand-alone systems
D_9 Unconnected urban population	S_7 Number of months with less than five hours of sunshine per day	EE_8 Adopted international quality standards for SHS?
D_10 Unreliable grid connections	S_8 Cumulative month hours below 5 hours of sunshine per day	EE_9 Environmental regulations on disposal of solar devices and SHS components?
D_11 Number of electrical outages in a typical month	<b>Market penetration</b>	EE_10 Solar modules subsidies
	S_9 Number of PAYG players in market	EE_11 Duty exemptions for solar modules?
<b>Ability to pay</b>	S_10 Total solar capacity installed	EE_12 Duty exemptions for other equipment related to stand-alone systems?
D_12 GNI per capita	S_11 Volume of PAYG, PICO and SHS sales per country	EE_13 Do subsidies exist for stand-alone systems?
D_13 High annualised off-grid household expenditure on lighting and mobile phone charging	S_12 Cumulative volume of PAYG, PICO and SHS sales per country	EE_14 Do duty exemptions exist for stand-alone systems?
D_14 Proportion of population above 'poor' income	<b>Human capital</b>	EE_15 Government financing to support or develop stand-alone systems?
D_15 Income volatility	S_13 Quality of management schools	EE_16 Market financing facilities to support developers of stand-alone systems?
	S_14 Local availability of specialized training services	<b>Trade and commerce</b>
<b>Willingness to pay</b>	S_15 Quality of the education system	EE_17 Depth of credit information index
D_16 Borrowed from a store by buying on credit	S_16 Gross tertiary education enrolment rate	EE_18 Credit: Strength of legal rights index
D_17 Cost of subsistence electricity consumption	S_17 Living languages count	EE_19 GDP (PPP and constant 2011 US\$)
D_18 Time to get grid connection	S_18 Linguistic diversity index	EE_20 Annual GDP growth
D_19 Average kerosene prices	S_19 Availability of government certified training programmes for solar equipment installation	EE_21 Ease of doing business index (1=easiest to 185=most difficult)
D_20 Private credit bureau coverage		EE_22 Corruptions Perception Index
D_21 Public credit registry coverage		EE_23 Global Peace Index
D_22 Mobile money account (age 15+)		EE_24 Cost to import
D_23 Paid utility bills: using a mobile phone (% paying utility bills, age 15+)		EE_25 Cost to enforce a contract
D_24 Cheapest prepaid mobile voice product by country (in USD)		EE_26 Cost to start a business
D_25 Cost to get electricity (% of income per capita)		EE_27 Minimum paid-in capital required to start a business

Source: PAYG market attractiveness index

**Each indicator is normalised on a scale of 0-100.** The 'lowest' performing country scores a 0, the 'highest' performing country scores 100. Weightings can be manually adjusted on the PAYG MAI tab for each pillar, and for each sub-pillar. The index is presented with default weights based on market research and engagement, and an assessment of the type and range of the raw data for each indicator, and its relative importance in contributing to market attractiveness. The weights on specific indicators cannot be modified, but the 'INDICATOR TAB' displays further information on specific indicators, which users can select to display one at a time.

**The 10 Sub-pillars are a weighted sum of their individual indicators.** The range of each sub-pillar is scaled so the highest performing country scores 100. Each indicator is weighted based on: (i) whether it is binary, discreet, or continuous, (ii) the range of variation in the raw indicator scores across the 14 countries, (iii) the relative importance of the indicator. In general, binary indicators are given a lower weight than continuous, as countries can only receive either a full 100 score, or a 0 score on these indicators. Binary indicators would therefore dominate when adding over all indicators. Indicators with a wider range are assigned a higher weight for the same reason. Finally, indicators that are considered more 'important' are weighted more strongly. This assessment is based on expert judgement and stakeholder conversations, and used to provide a sensible calibration of the index. Critical factors, such as the distribution of population density, are weighted highly.

**Each of the three main pillars is a weighted average of the relevant 10 sub-pillars it comprises.** The range of each pillar is scaled so the highest performing country scores 100. Users can define these weights to investigate which markets appear most attractive when different sub-pillars of the market are weighted differently. As a sub-pillar weight is modified, the scores and country rankings of the pillar within which it sits will be affected, as will the score and ranks on the overall index.

**The overall index score is a weighted average of the three main pillars.** The range of the overall index is scaled so that the highest performing country scores 100. As with the sub-pillars, users can choose the weight they want to assign to each of the 'Demand', 'Supply' and 'Enabling Environment' pillar. Changing these weights will only affect the scores and country rankings of the overall index.

## **Using the index**

**User modifiable cells are highlighted with a yellow background, and orange text.** All user selections are on the basis of a drop-down menu. In cases where user inputs can push the index into error, this is clearly highlighted. For example, users can select how to weight the pillars and sub-pillars, but if the user selects weights that do not sum to 100% this is highlighted by a red error message.

**There are three tabs where users can choose from a set of options, and view updated results:**

- **The 'PAYG MAI' tab:** presents overall index scores, and scores across the three main pillars. Users can select which pillar they want to display at the top of the tab, from a choice of the overall index, or each of the three main pillars of the index. The chart and country scores and rankings will update automatically.

Users may also select a country to highlight. This provides a dark-green highlight to show the country selected on both the column chart and the text table of scores, ordered by country ranking.

Finally, users can change the weight of each of the sub-pillars, and the three main pillars. The weights for each sub-pillar, and the three main pillars, should sum to 100%. An error message will be prompted in red if this is not the case.

- The 'COUNTRY' tab: provides an accessible summary of all indicators for a single country of interest. The top half of this tab presents a summary of the overall pillar, and sub-pillar scores for the country selected. It also shows a 'spider' diagram of scores across the overall index and the three main pillars, against a comparator country which the user can also select. The table and graph in this top panel are dependent only on the primary country selected, and the comparator country selected (see below).

The bottom half of the page shows the indicator scores – in both raw format and for the normalised scores (between 0 – 100). These tables update to display the scores for indicators for one sub-pillar at a time, and depend on the primary country selected and on the sub-pillar selected (see below).

Users first select the country of interest in the 'COUNTRY DISPLAY' dropdown. This defines the country for which all indicators will be selected. The 'SELECT COUNTRY FOR COMPARISON' dropdown defines the second country to be displayed on the spider diagram.

By using the 'PILLAR DISPLAY' dropdown, the user selects which set of indicators will be displayed. The tab displays all the indicators, organised under sub-pillar headings, for one of the three main pillars at a time. For example, if the user selects 'DEMAND' they will see all the demand side pillars displayed under the three sub-pillar headings (market size, ability to pay, and willingness to pay).

- The 'INDICATOR' tab: allows users to see the latest year of data, raw data and normalised scores by country for a single indicator. Next to the main results table a selection of further summary details are given, including the pillar and sub-pillar within which the indicator is located in the index, the unit of measurement, source, and a longer free-text description.

The user first selects which of the three main pillars they want to select an indicator from in the 'PILLAR DISPLAY' dropdown. Next, they select an individual indicator in the 'INDICATOR DISPLAY' dropdown.

Finally, the user can select a country to highlight in the table of results, by using the 'COUNTRY HIGHLIGHT' dropdown.

## Complete list of indicators

### Demand side pillar indicators

Table 1. Market size indicators

#	Name	Description	Year	Source
D_1	Population	Absolute population size	2017	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_2	National population density	Average population density across country	2016	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_3	Population density distribution	Proportion of population that is 'medium density', i.e. < 1000 pp / sq km and > 100 pp / sq km	2018	Vivid Economics calculation, based on UN WPP density data, <a href="https://esa.un.org/unpd/wpp/dataquery/">https://esa.un.org/unpd/wpp/dataquery/</a>
D_4	Rural population	Proportion of population urban	2017	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_5	Population growth rate	Rate of population growth between 2015 and 2025	2025	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_6	Rate of urbanisation	Rate of urbanisation between 2015 and 2025	2025	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_7	Urban non-slum population	Proportion of urban homes not classified as slums	2014	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_8	Unconnected rural population	Proportion of rural population with no access to electricity	2016	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_9	Unconnected urban population	Proportion of urban population with no access to electricity	2016	WB World Development Indicators, <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=SM.POP.TOTL&amp;country=</a>
D_10	Unreliable grid connections	Proportion of those with a grid connection who state that connection works less than all of the time	2016	Vivid Economics calculation based on Afrobarometer surveys, <a href="http://afrobarometer.org/data/merged-round-6-data-36-countries-2016">http://afrobarometer.org/data/merged-round-6-data-36-countries-2016</a>
D_11	Number of electrical outages in a typical month	Number of electric outages in a typical month as reported by businesses in the Enterprise Survey	Various depending on the country, latest 2016	Enterprise Surveys, World Bank Group, <a href="http://www.enterprisesurveys.org/Custom-Query">http://www.enterprisesurveys.org/Custom-Query</a>

Table 2. Ability to pay indicators

#	Name	Description	Year	Source
D_12	GNI per capita	Gross national income per capita (Atlas method)	2017	World Development Indicators. <a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators</a>
D_13	High annualised off-grid household expenditure on lighting and mobile phone charging	Annual expenditure of high intensity off-grid consumers on energy and electricity including expenditure on kerosene and other fossil fuel consumption, and battery replacement. <i>There are missing values for Congo, Dem. Rep. and for Mozambique. These were assigned the lowest value of the sample, 156, corresponding to Ethiopia.</i>	2015	IRENA. Solar PV in Africa: Costs and Markets. International Renewable Energy Agency, 2015 <a href="https://www.irena.org/DocumentDownloads/Publications/IRENA_Solar_PV_Costs_Africa_2016.pdf">https://www.irena.org/DocumentDownloads/Publications/IRENA_Solar_PV_Costs_Africa_2016.pdf</a>
D_14	Proportion of population above 'poor' income	Proportion of population above 'poor' income level. <i>There are missing observations for Congo, Dem. Rep. and for Zimbabwe. Values were estimated by scaling the observations from countries most similar to Congo Dem. Rep. (Kenya and Nigeria respectively).</i>	2016	Vivid Economics projection to 2016 baseline, based on 2011 data from Pew Research Centre and scaled for expected shift between income categories in line with income growth <a href="http://www.pewglobal.org/2015/07/08/a-global-middle-class-is-more-promise-than-reality/">http://www.pewglobal.org/2015/07/08/a-global-middle-class-is-more-promise-than-reality/</a>
D_15	Income volatility	Weighted average volatility of crop yields for all major crop types (>5% of annual production).	2017	Vivid Economics analysis of FAO crop yield data 1990 – 2017 <a href="http://www.fao.org/faostat/en/#data/QC">http://www.fao.org/faostat/en/#data/QC</a>

Table 3. Willingness to pay indicators

#	Name	Description	Year	Source
D_16	Borrowed from a store by buying on credit	Denotes the percentage of respondents who borrowed any money in the past 12 months from a store by using instalment credit or buying on credit. <i>Data for Mozambique was missing. It was assigned the lowest value of the sample (0.59%) corresponding to Tanzania.,</i>	2014	Global Financial Inclusion, <a href="http://databank.worldbank.org/data/reports.aspx?source=1228#">http://databank.worldbank.org/data/reports.aspx?source=1228#</a>
D_17	Cost of subsistence electricity consumption	annual cost of subsistence consumption (30kWh/month) as a percentage of GNI per household of bottom 20 percent of population?	2017	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
D_18	Time to get grid connection	time required to get electricity (days)	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
D_19	Average kerosene prices	Average price in US\$ per one litre of kerosene. <i>There are missing observations for Angola and Madagascar. Their value was estimated by multiplying the countries diesel price by the sample correlation between diesel prices and kerosene prices.</i>	2015	Vivid Economics projection based on Climatescope and World Bank indicators <a href="http://global-climatescope.org/en/download/">http://global-climatescope.org/en/download/</a>
D_20	Private credit bureau coverage	Percentage of adults covered by private credit	2017	Global Financial Inclusion, <a href="http://databank.worldbank.org/data/reports.aspx?source=1228#">http://databank.worldbank.org/data/reports.aspx?source=1228#</a>

#	Name	Description	Year	Source
D_21	Public credit registry coverage	Percentage of adults covered by public credit.	2017	Global Financial Inclusion, <a href="http://databank.worldbank.org/data/reports.aspx?source=1228#">http://databank.worldbank.org/data/reports.aspx?source=1228#</a>
D_22	Mobile money account (age 15+)	The percentage of respondents who report personally using a mobile money service in the past 12 months.	2017	Global Financial Inclusion, <a href="http://databank.worldbank.org/data/reports.aspx?source=1228#">http://databank.worldbank.org/data/reports.aspx?source=1228#</a>
D_23	Paid utility bills: using a mobile phone (% paying utility bills, age 15+)	Among respondents reporting personally making regular payments for water, electricity, or trash collection in the past 12 months, the percentage who report making these payments through a mobile phone.	2017	Global Financial Inclusion, <a href="http://databank.worldbank.org/data/reports.aspx?source=1228#">http://databank.worldbank.org/data/reports.aspx?source=1228#</a>
D_24	Cheapest prepaid mobile voice product by country (in USD)	Cheapest prepaid mobile voice product in Africa, 30 Calls / 100 SMS.	2017	Research ICT Africa, 2017 <a href="https://researchictafrica.net/ramp_indices_portal/">https://researchictafrica.net/ramp_indices_portal/</a>
D_25	Cost to get electricity (% of income per capita)	All the fees and costs associated with completing the procedures to connect a warehouse to electricity are recorded, including those related to obtaining clearances from government agencies, applying for the connection, receiving inspections of both the site and the internal wiring, purchasing material, getting the actual connection works working and paying a security deposit.	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>

## Supply side pillar indicators

Table 4. Access to finance indicators

#	Name	Description	Year	Source
S_1	Firms identifying access to finance as a major constraint	Percentage of firms identifying this as a major constraint	Various depending on the country, latest 2016	Enterprise Surveys, World Bank Group, <a href="http://www.enterprisesurveys.org/Custom-Query">http://www.enterprisesurveys.org/Custom-Query</a>
S_2	Affordability of financial services	Answer to the question: In your country, to what extent does the financial sector provide the products and services that meet the needs of businesses? [1 = not at all; 7 = to a great extent]	Various depending on the country, latest 2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_3	Availability of early stage equity	Answer to the question: In your country, how easy is it for start-up entrepreneurs with innovative but risky projects to obtain equity funding? [1 = extremely difficult; 7 =	Various depending on the country, latest 2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_4	Financial Markets - Short Term Economic Risk	Index measure of the short-term economic risk of financial markets. It is a short-term measure of how easy it is for companies to operate in the country's financial markets. Amongst other parameters, this includes capital controls and currency risk.	2018	BMI Research, 2018
S_5	Financial Markets - Long Term Economic Risk	Index measure of the long-term economic risk of financial markets. It is a long-term measure of how easy it is for companies to operate in the country's financial markets. Amongst other parameters, this includes capital controls and currency risk.	2018	BMI Research, 2018



**Table 5. Operational considerations indicators**

#	Name	Description	Year	Source
S_6	Rural access index	The Rural Access Index provides a consistent basis for estimating the proportion of the rural population which has adequate access to the transport system.	Various depending on the country, latest 2004	"Roberts, Peter; KC, Shyam; Rastogi, Cordula. 2006. Rural Access Index : A Key Development Indicator. Transport paper series;no. TP-10. World Bank, Washington, DC. © World Bank <a href="https://openknowledge.worldbank.org/handle/10986/17414">https://openknowledge.worldbank.org/handle/10986/17414</a>
S_7	Number of months with less than five hours of sunshine per day	Counted the number of months in one year, where the average hours of sunshine per day were lower than 6	2018	Vivid Economics calculation based on various sources including <a href="http://fr.allmetsat.com/climat/tanzanie-rwanda-burundi.php?code=63844">http://fr.allmetsat.com/climat/tanzanie-rwanda-burundi.php?code=63844</a>
S_8	Cumulative month hours below 5 hours of sunshine per day	Cumulative hours per representative monthly days less than 6 hours per day	2018	Vivid Economics calculation based on various sources including <a href="http://fr.allmetsat.com/climat/tanzanie-rwanda-burundi.php?code=63844">http://fr.allmetsat.com/climat/tanzanie-rwanda-burundi.php?code=63844</a>

**Table 6. Market penetration indicators**

#	Name	Description	Year	Source
S_9	Number of PAYG players in market	Number of active PAYG companies in a market at the given time of research (2018)	2017	Vivid consortium research
S_10	Total solar capacity installed	Sum of capacity for installed solar technology in the country. Data is missing for Angola, the country has been assigned the lowest value in the sample, 3 kWh, corresponding to Congo, Dem. Rep.	2017	IRENA Costs database, <a href="http://resourceirena.irena.org/gateway/dashboard/">http://resourceirena.irena.org/gateway/dashboard/</a>
S_11	Volume and type of PAYG, PICO and SHS products	The total sum of solar units sold in the last half of 2017.	2017	Provided by GOGLA
S_12	Cumulative sales of PAYG, PICO and SHS products	The total sum of solar units sold from the last half of 2014 to the last half of 2017	2017	Provided by GOGLA

Table 7. Human capital indicators

#	Name	Description	Year	Source
S_13	Quality of management schools	Answer to the question: In your country, how do you assess the quality of business schools?	Various depending on the country, latest 2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_14	Local availability of specialised training services	Answer to the question: In your country, how available are high-quality, professional training services?	2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_15	Quality of the education system	Answer to the question: In your country, how well does the education system meet the needs of a competitive economy?	2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_16	Gross tertiary education enrolment rate	The total enrolment within a country in a specific level of education, regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education	2017	The Global Competitiveness Report 2017-2018 <a href="http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data">http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data</a>
S_17	Living languages count	count of living languages	2017	Simons, Gary F. and Charles D. Fennig (eds.). 2018. Ethnologue: Languages of the World <a href="https://www.ethnologue.com/">https://www.ethnologue.com/</a>
S_18	Linguistic diversity index	variation of local languages	2017	Simons, Gary F. and Charles D. Fennig (eds.). 2018. Ethnologue: Languages of the World <a href="https://www.ethnologue.com/">https://www.ethnologue.com/</a>
S_19	Availability of government certified training programmes for solar equipment installation	Response to the question: Is there a government certified program for solar equipment installers?	2017	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>

## Enabling environment side indicators

Table 8. Information and communications technology indicators

#	Name	Description	Year	Source
EE_1	Mobile cellular subscriptions	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology.	2016	International Telecommunication Union, World Telecommunication/ICT Development Report and database via World Development Indicators <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IT.CEL.SETS&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IT.CEL.SETS&amp;country=</a>
EE_2	Secure Internet servers	Secure servers are servers using encryption technology in Internet transactions	2016	World Development Indicators via Netcraft <a href="http://www.netcraft.com/">http://www.netcraft.com/</a>
EE_3	Individuals using the Internet	Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.	2016	International Telecommunication Union, World Telecommunication/ICT Development Report and database via World Development Indicators <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IT.CEL.SETS&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IT.CEL.SETS&amp;country=</a>
EE_4	SIM penetration	Proportion of the population with the use of SIM	2017	GSMA intelligence 2018, <a href="https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download">https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download</a>
EE_5	Mobile broadband	Proportion of the population with mobile broadband use	2017	GSMA intelligence 2018 <a href="https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download">https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download</a>
EE_6	Number of mobile connections per capita	Ratio of number of mobile connections to total population, connections per capita	2017	World Bank population data 2017, and GSMA data on total mobile connections for Q4 of 2017 <a href="https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download">https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&amp;download</a>

Table 9. Legal and regulatory indicators

#	Name	Description	Year	Source
EE_7	National programs to develop or support stand-alone systems	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_8	Adopted international quality standards for SHS?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_9	Environmental regulations on disposal of solar devices and SHS components?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_10	Solar modules subsidies	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_11	Duty exemptions for solar modules?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_12	Duty exemptions for other equipment related to stand-alone systems?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>

#	Name	Description	Year	Source
EE_13	Do subsidies exist for stand-alone systems?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_14	Do duty exemptions exist for stand-alone systems?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_15	Government financing to support or develop stand-alone systems?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>
EE_16	Market financing facilities to support developers of stand-alone systems?	Response to the question	2015	RISE, World Bank Group <a href="http://RISE.worldbank.org">http://RISE.worldbank.org</a>

Table 10. Trade and commerce indicators

#	Name	Description	Year	Source
EE_17	Depth of credit information index	Depth of credit information index measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries.	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_18	Credit: Strength of legal rights index	Strength of legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending.	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_19	GDP (PPP and constant 2011 US\$)	GDP in purchasing power parity, constant US 2011 prices	2015	World Development Indicators. <a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators</a>
EE_20	Annual GDP growth	expected GDP growth rate 2015 - 2025	2016	World Development Indicators. <a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators</a>
EE_21	Ease of doing business index (1=easiest to 185=most difficult)	Ease of doing business, from the World Bank Doing Business project.	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_22	Corruptions Perception Index	The index, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople, uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean.	2017	Transparency International, 2017 <a href="https://www.transparency.org/news/feature/corruption_perceptions_index_2017">https://www.transparency.org/news/feature/corruption_perceptions_index_2017</a>
EE_23	Global Peace Index	Ranks 163 independent states and territories according to their level of peacefulness.	2017	Institute for Economics and Peace, 2017. <a href="http://visionofhumanity.org/app/uploads/2017/06/GPI17-Report.pdf">http://visionofhumanity.org/app/uploads/2017/06/GPI17-Report.pdf</a>

#	Name	Description	Year	Source
EE_24	Cost to import	Documentary compliance captures the time and cost associated with compliance with the documentary requirements of all government agencies of the origin economy, the destination economy and any transit economies.	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_25	Cost to enforce a contract	Cost as a percentage of total claim	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_26	Cost to start a business	Cost as a percentage of income per capita	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>
EE_27	Minimum paid-in capital required to start a business	Paid in capital as a percentage of income per capita	2017	Doing Business, World Bank Group <a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IC.BUS.EASE.XQ&amp;country=</a>

