

INFORMATION RESOURCES ON UTILITY-SCALE RENEWABLE ENERGY AND SMART GRID MARKETS IN DEVELOPING COUNTRIES

This brief identifies major information sources on the markets for utility-scale renewable energy (primarily, solar and wind power) and smart grid technologies in developing countries. It includes world market outlooks with country data, regional market outlooks, technology-specific outlooks, and databases. A link is included for each report or web resource. The icon in front of each item indicates whether it is free or for sale.



WORLD MARKET OUTLOOKS AND GLOBAL RESOURCES



ADS Reports published market research reports on wind and solar energy and smart grids. These reports addressed industry analyses, technology trends and developments, and descriptions of key players and their market shares.



Bloomberg New Energy Finance's (BNEF) **Climatescope** (2017) was an assessment of renewable energy market conditions and opportunities in more than 70 emerging market countries. Climatescope contained detailed country profiles. It also ranked the renewable energy development potential of each country, based on 43 indicators and 179 sub-indicators.



BNEF's **New Energy Outlook** (2017) contained detailed annual forecasts of electric power production by type of energy through 2040. The report discussed changes in technologies, markets, and business models. The near-term market projections were based on an analysis of policies and other drivers and BNEF's database of planned installations, retrofits, and facility retirements by country and types of technology. The seven reports consisted of a Global Synthesis, regional reports; and energy resource reports.

In addition, **BNEF** provided other services, such as research, long-term forecasts, and in-depth analyses of energy technologies and sectors. It also offered a comprehensive database of projects, policies, companies, and investments; a suite of interactive analytical tools and proprietary models; a daily news feed; and briefings and webinars.



BMI Research offered a range of global, regional, and country-specific outlooks for renewable energy and developed forecasts for specific technologies. It provided daily viewpoints and insights and an online platform for data and forecasting tools.



The BP **Energy Outlook** (2018) explored projected demand and supply changes for renewable and nonrenewable energy that will shape the global energy transition through 2040 and key uncertainties. BP also published **insight factsheets** on various regions and countries with large energy markets.

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The [Energy Sector Management Assistance Program](#) (ESMAP) had several databases and tools, including the [Global Solar Atlas](#) and the [Global Wind Atlas](#). It also provided free, web-based applications developed to help policymakers and investors identify potential high resource areas for wind and solar power generation worldwide, and perform preliminary calculations. Its Regulatory Indicators for Sustainable Energy (RISE) scores summarized the policy and regulatory environment of countries for energy access, energy efficiency, and renewable energy.



ExxonMobil's 2018 [Outlook for Energy: A View to 2040](#) (2018) contained energy demand and supply projections through 2040, including regional projections of solar and wind energy.



[Greentech Media](#) was a market analysis and advisory firm that focused on technologies, financing, and institutional analyses for electric power and associated industries worldwide.



The International Energy Agency's (IEA) Market Report Series, [Renewables 2017](#), contained five-year forecasts of hydropower, bioenergy, onshore wind, offshore wind, solar photovoltaics (PV), concentrated solar power (CSP), geothermal, and ocean power. The report contained country-specific data and forecasts for major markets, including investment pipelines, economic growth projections, policy frameworks, economic feasibility, and power system integration.



IEA's [World Energy Outlook](#) (2017) analyzed the effects of policy and investment decisions on long-term energy by regions and sectors (residential, services, agriculture, industry, transport, and non-energy use). It also modeled electric power and heat generation, fossil fuel production and processing, and bioenergy. The model projected energy flows by type of fuel, investment costs, greenhouse gas emissions, and end-user prices.



IEA's website [statistics](#) page contained data on world energy markets, including monthly prices for oil, gas, and electricity.



The International Renewable Energy Agency's (IRENA) [Renewable Energy Roadmap](#) (REmap) (2016) assessed the potential for countries and regions to scale up renewable energy use in electric power, heating and cooling, and transport. REmap also presented costs, investment requirements, impacts on air pollution and greenhouse gas emissions, and economic growth and employment. IRENA also produced country reports on Renewable Energy Outlooks and Renewable Energy Prospects that estimated the potential contributions of countries to achieving a 36 percent share for renewables energy worldwide by 2030, and Renewables Readiness Assessments that identified actions specific countries can take to scale up renewable energy use faster.



IRENA's [website data and statistics](#) page contained data on renewable energy capacity and generation, renewable energy balances, finance, renewable energy auctions and targets by country, and technology costs.



McKinsey's [Global Energy Perspective: Reference Case 2018](#) presented the results of macro- and microeconomic modeling of 55 types of energy demand in 145 countries and 28 sectors.

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The Renewable Energy Policy Network for the 21st Century (REN21) issued a [Renewables Status Report](#) (2017) that addressed world energy markets, industries, policy and regulatory frameworks, and investments. REN21 has also issued regional reports.



Shell's [World Energy Model](#) (2017) projected the world demand and supply for energy services and discussed resource constraints, build rates, and prices. The model produced regional and country forecasts of the demand for electricity and the projected installed capacity by technology. Shell's [Renewable Energy Resources Database](#) provided regional and country-specific information.



The U.S. Energy Information Administration's (EIA) [International Energy Outlook 2017](#) provided long-term regional energy projections, including a reference case based on current policies and other scenarios reflecting different economic growth rates and world oil prices.



The U.S. International Trade Administration's (ITA) [Top Markets Series](#) provided information on market opportunities for U.S. exporters in specific industries, by country. The series described export opportunities, the competitive landscape, and challenges and included detailed case studies. Examples included the [Renewable Energies Report](#) (2016) and [Smart Grid Report](#) (2017).



The World Energy Council's (WEC) [Energy Trilemma Index](#) (2017) ranked over 120 countries on energy security, energy equity (accessibility and affordability), and environmental sustainability.



The WEC's [World Energy Resources 2016](#) contained data on energy use in more than 180 countries. It also included briefs on the energy mix in various countries and analyses of the economic and environmental impacts of energy technologies.



The WEC's [World Energy Scenarios 2016 - The Grand Transition](#) presented three scenarios for energy production and use worldwide. The WEC also prepared regional reports for example on [Latin America & the Caribbean Energy Scenarios](#) (2017) and the [Regional Perspective for Sub-Saharan Africa](#) (2018).



The WEC website offered several [datasets](#), graphs, and charts, including on world energy [resources](#), [issues](#) shaping global and regional energy markets, and the [sustainability of national energy policies](#).

TECHNOLOGY-SPECIFIC OUTLOOKS



Allied Market Research's [Solar Energy Market](#) (2015) report provided detailed regional and country projections for solar power through 2022.



Frost & Sullivan Research's [Global Wind Power Market: Forecast to 2025](#) (2017) contained wind power projections from 2017 to 2025 and discussed factors affecting the world and regional markets. It also projected annual growth in installed wind power capacity for the world, regions, and selected countries.



The Global Wind Energy Council's (GWEC) [2016 Global Wind Energy Outlook](#) contained wind power projections for 2020, 2030, and 2050. It also estimated the associated employment gains, greenhouse gas emission reductions, cost savings, and capital investment requirements. GWEC has also issued [country reports](#).



MarketsandMarkets [Smart Grid Market – Global Forecast to 2022](#) (2017) projected smart grid software, hardware, and service sales through 2022 by region. It also analyzed their business strategies, products and services, partnerships and collaborations, planned expansion of major companies, and the competitive landscape for smart grid products and services.



[Mordor Intelligence](#) was a market research and consulting firm with expertise in country-specific analyses of energy industry segments, including power storage, renewables, generation, transmission, and distribution. Their 2017 [Global Smart Grid Network Market - Segmented by Application and Geography - Growth, Trends and Forecasts \(2018-2023\)](#) provided market size and demand forecasts for various smart grid technologies through 2023. It analyzed market segments for transmission upgrades, demand response, and advanced metering by region and for selected countries and companies.



[Navigant Research](#) offered custom market research on energy technologies and utility restructuring. It had a proprietary platform to create customized views and sort data by product or service, region or country, price, and manufacturer. It also conducted market assessments and provided advisory sessions.



Navigant Research's [Market Data: Smart Grid IT Systems](#) (2017) analyzed the world and regional markets for smart grid information technology (IT) systems and analytic solutions through 2026. It projected sales revenues for implementation and upgrade services, maintenance, and cloud support. This market assessment addressed 12 major smart grid IT systems: advanced distribution management systems, asset management systems, customer information systems, demand response management systems, distributed energy resource management systems, energy management systems, geographic information systems, meter data management systems, mobile workforce management systems, outage management systems, supervisory control and data acquisition, and analytics.



[Northeast Group](#) was a market intelligence firm with expertise in smart infrastructure and smart grids. It analyzes and forecasts how smart infrastructure and the Internet of Things will be deployed at utilities and in smart cities. It also publishes market research studies and data and offers custom research services. Their [Emerging Markets Smart Grid: Outlook 2018](#) identified the 50 emerging market countries with the largest expected investments in smart grids through 2022. These technologies included smart metering, distribution automation, and battery storage. This report profiles and trends in smart grid tenders and deployment in 50 countries. The Northeast Group also issued in-depth reports on smart grid infrastructure in specific regions and countries.