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Renewable Energy: United States

December 2019



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About This Report

Scope

This report forecasts to 2024 US renewable energy consumption and production in British thermal units (Btu). Total consumption is segmented by resource in terms of:

- wood and waste biomass
- hydropower
- biofuels
- wind
- solar
- geothermal

Total consumption is also segmented by market as follows:

- electric power
- industrial
- transport
- residential
- commercial

To illustrate historical trends, total consumption, total production, and the various segments are provided in annual series from 2009 to 2019.

For the purposes of this report, energy is measured in terms of primary energy. As defined by the US Energy Information Administration, primary energy is the form of energy first accounted for before any conversion to secondary or tertiary forms of energy. To avoid double-counting, market totals represent primary energy consumption only. For example, the electric power market represents the consumption of energy (e.g., hydropower, wind) to produce electricity, but retail sales of that electricity to the other markets (e.g., industrial, residential) are excluded from market totals.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading companies, are covered in this report. A full outline of report items by page is available in the Table of Contents.

Sources

Renewable Energy: United States (FF45041) represents the synthesis and analysis of data from various secondary, macroeconomic, and demographic sources, such as:

- firms participating in the industry, and their suppliers and customers

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- government/public agencies
- intergovernmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

Industry Codes

Table 7 | NAICS & SIC Codes Related to Renewable Energy

NAICS/SCIAN 2017		SIC	
North American Industry Classification System		Standard Industrial Classification	
221111	Hydroelectric Power Generation	4911	Electric Services
221114	Solar Electric Power Generation	4939	Combination Utilities, Nec
221115	Wind Electric Power Generation	4931	Electric and Other Services Combined
221116	Geothermal Electric Power Generation	4961	Steam and Air-conditioning Supply
221117	Biomass Electric Power Generation	2046	Wet Corn Milling
221118	Other Electric Power Generation	2911	Petroleum Refining
221330	Steam and Air-Conditioning Supply	2869	Industrial Organic Chemicals, Nec
311221	Wet Corn Milling	4953	Refuse Systems
324110	Petroleum Refineries		
325110	Petrochemical Manufacturing		
325193	Ethyl Alcohol Manufacturing		
325199	All Other Basic Organic Chemical Manufacturing		
562920	Materials Recovery Facilities		

Source: US Census Bureau

Freedonia Methodology

The Freedonia Group, a subsidiary of MarketResearch.com, has been in business for more than 30 years and in that time has developed a comprehensive approach to data analysis that takes into account the variety of industries covered and the evolving needs of our customers.

Every industry presents different challenges in market sizing and forecasting, and this requires flexibility in methodology and approach. Freedonia methodology integrates a variety of quantitative and qualitative techniques to present the best overall picture of a

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market's current position as well as its future outlook: When published data are available, we make sure they are correct and representative of reality. We understand that published data often have flaws either in scope or quality, and adjustments are made accordingly. Where no data are available, we use various methodologies to develop market sizing (both top-down and bottom-up) and then triangulate those results to come up with the most accurate data series possible. Regardless of approach, we also talk to industry participants to verify both historical perspective and future growth opportunities.

Methods used in the preparation of Freedonia market research include, but are not limited to, the following activities: comprehensive data mining and evaluation, primary research, consensus forecasting and analysis, ratio analysis using key indicators, regression analysis, end use growth indices and intensity factors, purchase power parity adjustments for global data, consumer and end user surveys, market share and corporate sales analysis, product lifespan analysis, product or market life cycle analysis, graphical data modeling, long-term historical trend analysis, bottom-up and top-down demand modeling, and comparative market size ranking.

Freedonia quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or r^2 . The most stable data series relative to the trend carries an r^2 value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

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Solar Roofing in the US

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Energy: United States

Housing: United States

Manufacturing: United States

Motor Vehicle Biofuels: United States

Municipal Solid Waste: United States

Natural Gas: United States

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