

Industry Specific Market Potential Index

2016

Alternative Energy

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Insights and Rankings

Preface

The Industry Specific Market Potential Index (MPI) compares the 89 countries that globally have the highest Gross Domestic Product (GDP) on several dimensions to rank them according to their market potential for different industries.

The Index compares these countries on six dimensions: size, growth rate, capacity, market openness, existing logistics infrastructure and risk (political, economic and business) of the country. To measure each dimension, a different set of indicators is identified for every industry. Secondary data that have been gathered from various reputable sources are used for these indicators, as noted. Ranking scores are calculated by adding up the dimensions, weighted by relative importance.

While the MPI is a very useful tool for companies in the process of researching new markets for export, it shouldn't be used as the single information source in decision making. MPI is designed to support other detailed market research and to be used for verification purposes. It can be utilized as the first step in market research, to help identify the focus countries for which more detailed market research should be conducted.

Since MPI is calculated with the most recent data available, it is also important to remember that it represents the current state of the countries, and it does not aim to forecast their future states.

Industry specific MPIs are updated annually.

All the industry specific MPIs can also be found at: <http://globaledge.msu.edu/medc>

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Alternative Energy

Up and Coming Markets for Future Growth Opportunities

Brazil

Brazil is a promising market for the alternative energy industry because of its market size and high production rate of biofuels. This sector grew significantly over the past ten years where hydroelectricity comprises 70% of Brazil's electricity generation. The country also aims to diversify the alternative energy market through its expansion to the wind and solar energy. Solar power, in particular, attracts numerous foreign investors, energy companies, and multilateral banks to Brazil. The Government shows its support for the solar energy business through Brazilian Federal Energy Regulatory Agency, which created laws to decrease barriers for the incorporation and distribution of solar power generation. Though there are many benefits to investing in Brazil, there are still some caveats to doing business in the country. Brazil has been going through political and economic struggles affecting all industries including alternative energy. However, Bloomberg asserts that despite the uncertainty the economic slowdown holds, the alternative energy industry is a resilient business and is one less affected by the crisis.

Established Countries

Austria, Belgium, Denmark, Germany, Switzerland, UK

These alternative energy focused countries possess strong economies, experience in international relations, and established finance and supply chain sectors. Most of these countries also have small landmasses with limited resources furthering the importance of the industry to them. Germany, in particular, is a hub for alternative energy. The country has the Renewable Energy Source Law that provides feed-in-tariffs for renewable energy resources. In May 2016, Germany had most of its power generated from renewable energy sources, according to Bloomberg. Austria is another great market for alternative energy because of its alpine geography. This geographical feature contains significant hydropower which makes up over 65% of the domestic generation with little yearly variations resulting from weather fluctuations. Denmark possesses a lot of opportunities for alternative energy companies as well. The country incorporated renewable resources for energy since 1973, and it planned to make 100% of its electricity and heat to come from renewable resources.

Export Countries

Hong Kong, Singapore, Sweden, Luxembourg

These countries are reliable partners for exportation because of their strong intellectual property protections, open economies, and legal and regulatory structures. Despite their small sizes, these nations are gateways to bigger alternative energy markets. Luxembourg, for example, houses the European Union's legal and financial institutions. Hong Kong and Singapore provide tremendous opportunities for businesses to interact with Asian markets. Hong Kong depends on imports to satisfy environmental needs and acts as a sourcing agent for environmental products in China. Singapore is the center for finance, shipping, and trade. The World Bank also considers the island to be the easiest place for establishing, running, and doing business.

Results of the Alternative Energy Industry Market Potential Index 2016

<i>Alternative Energy</i>	OVERALL	Market Size (30/100)	Market Growth Rate (15/100)	Market Capacity (10/100)	Market Openness (15/100)	Logistics Infrastructure (15/100)	Country Risk (15/100)
	RANK	RANK	RANK	RANK	RANK	RANK	RANK
China	1	2	31	1	40	6	30
Brazil	2	1	42	7	74	71	60
Germany	3	4	48	5	28	3	7
Hong Kong SAR, China	4	22	1	45	3	15	2
United Kingdom	5	7	20	11	11	5	15
Japan	6	16	14	3	17	17	11
Belgium	7	11	16	31	29	2	17
Italy	8	3	43	10	56	22	49
Canada	9	5	56	6	76	7	12
Austria	10	8	35	37	21	25	7
Finland	11	18	50	42	1	14	9
Switzerland	12	6	76	41	20	19	4
France	13	10	58	9	38	10	21
Sweden	14	24	60	26	6	12	6
Netherlands	15	46	59	24	8	1	12
Spain	16	13	21	12	41	8	37
Denmark	17	31	49	48	12	11	12
Czech Republic	18	12	23	32	30	33	25
New Zealand	19	33	33	49	4	56	10
Poland	20	20	17	20	32	30	28
Israel	21	52	3	43	23	43	35
Singapore	22	80	81	33	2	4	1
Estonia	23	44	12	65	10	26	24
Cyprus	24	53	2	69	24	46	40
Ireland	25	65	24	54	7	24	19
Australia	26	29	32	14	18	61	15
Portugal	27	30	30	44	16	20	31
Luxembourg	28	55	63	70	13	18	4
Hungary	29	9	39	52	19	64	47
United Arab Emirates	30	82	29	29	33	13	20
South Africa	31	38	7	46	5	54	52
Korea, Rep.	32	67	29	8	68	9	22
Croatia	33	21	8	61	31	55	55
Morocco	34	32	11	56	34	34	43
Malaysia	35	69	69	23	9	16	27

<i>Alternative Energy</i>	OVERALL	Market Size (30/100)	Market Growth Rate (15/100)	Market Capacity (10/100)	Market Openness (15/100)	Logistics Infrastructure (15/100)	Country Risk (15/100)
Country	RANK	RANK	RANK	RANK	RANK	RANK	RANK
India	36	19	37	4	52	76	43
Slovenia	37	36	57	62	15	23	45
Norway	38	23	80	28	59	28	3
Thailand	39	17	26	18	51	60	56
Turkey	40	25	6	16	65	58	59
Russian Federation	41	15	9	2	82	51	68
Indonesia	42	28	5	19	43	83	53
Slovakia	43	58	40	55	37	40	28
Mexico	44	42	34	13	58	32	48
Malta	45	83	77	71	26	21	18
Qatar	46	85		63	54	47	23
Greece	47	26	28	34	49	29	71
Romania	48	40	22	36	48	70	42
Colombia	49	37	19	60	72	41	57
Saudi Arabia	50	86		15	75	31	34
Oman	51	84		74	36	53	41
Lithuania	52	57	45	64	46	80	26
Latvia	53	75	70	68	22	42	50
Vietnam	54	34	51	30	27	65	64
Guatemala	55	56	25	83	67	35	58
Peru	56	64	68	79	44	50	39
Philippines	57	39	41	80	53	84	36
Paraguay	58	27	53	66	71	52	67
Belarus	59	62	15	50	14	38	86
Dominican Republic	60	49	46	75	70	36	65
Bulgaria	61	59	13	47	81	63	51
Uruguay	62	73	74	72	47	48	46
Bahrain	63	88		76	60	49	54
Tunisia	64	81	10	59	69	74	63
Costa Rica	65	74	73	73	57	59	38
Chile	66	68	82	40	39	27	32
El Salvador	67	70	65	78	63	37	61
Sri Lanka	68	76	36	81	42	62	66
Argentina	69	14	44	22	78	68	80
Kuwait	70	87		53	80	72	33
Ecuador	71	66	38	77	62	39	81
Cambodia	72	79	4	88	35	87	69
Cuba	73	50	54	58	25	45	86
Egypt, Arab Rep.	74	72	67	21	45	44	78
Algeria	75	54	62	38	66	85	62
Ukraine	76	71	18	17	77	66	85
Pakistan	77	61	72	67	50	77	82
Serbia	78	60	78	51	73	81	70
Honduras	79	47	79	82	64	73	74
Azerbaijan	80	78	55	57	85	69	75
Papua New Guinea	81	89		89	55	75	72
Bangladesh	82	51	64	85	79	86	76
Kazakhstan	83	63	71	27	88	79	73
Nicaragua	84	48	75	84	84	67	77
Myanmar	85	43	27	87	61	89	84
Nigeria	86	77	52	86	83	78	79
Venezuela	87	35	61	25	87	82	89
Iraq	88	45	47	35	86	88	86
Uzbekistan	89	41	66	39	89	57	83

Assumptions

For the market size calculations, the amount of electricity produced by alternative resources is used as an indicator of the renewable energy potential of the countries. Production amount of biofuels is also used as an indicator of market size. The value of electricity imports is used as another market size variable, assuming that it's a good indicator of the country's energy imports market size. Market growth rate is measured by calculating the Compounded Annual Growth Rate (CAGR) of each market size indicator for the last five years.

For the market capacity, both the amount of generated electricity and electricity installed capacity are used as variables, assuming that these are good indicators of electricity capacity of a country. On the other hand, as an indicator of non-electricity related energy consumption, carbon dioxide emissions are used as another variable for the market capacity. And finally, since it's a good indicator of current electricity grid of a country, access to electricity is used for the measurement of market capacity. Along with the other generic export-related indicators, tariff data for Harmonized System (HS) code 2716 (Electrical Energy) is used for the measurement of the market openness dimension as well as the amount of private participation in energy investments. For the logistics dimension, the value of losses that occur during electricity distribution is incorporated with the other generic logistics indicators.

Indicators & Resources

Dimension	Weight	Measures Used
Market Size	30	<ul style="list-style-type: none"> Electricity Imports (2015)² Electricity Produced by Renewable Resources (2013)^{3,10} Production of Biofuels (2012)¹⁰
Market Growth Rate	15	<ul style="list-style-type: none"> CAGR of Electricity Imports (2010-2015)² CAGR of Electricity Produced by Renewable Resources (2008-2013)^{3,10} CAGR of Production of Biofuels (2008-2012)¹⁰
Market Capacity	10	<ul style="list-style-type: none"> Access to Electricity (% of Population) (2012)³ Total Carbon Dioxide Emissions (2012)¹⁰ Total Electricity Generated (2013)¹⁰ Total Electricity Installed Capacity (2012)¹⁰
Market Openness	15	<ul style="list-style-type: none"> Applied Tariff Rate on Electricity (2015)⁴ Burden of Customs Procedure (2015)³ Cost to Import (2014)³ Investment in Energy with Private Participation (2014)³

Logistics Infrastructure	15	<ul style="list-style-type: none"> • Electricity Distribution Losses (2013) ¹⁰ • Distance of Country from US ⁵ • Logistics Performance Index (2014) ³ • Quality of Port Infrastructure Index (2015) ³
Country Risk	15	<ul style="list-style-type: none"> • Business Risk Rating (2016) ⁸ • Economic Risk Rating (2016) ⁷ • Intellectual Property Rights Protection (2015) ⁹ • Political Risk Rating (2016) ⁶

Data used are those available for most recent year. All sources were accessed in May-June 2016.

¹ Passport GMID, [Global Market Information Database](#)

² UN Comtrade, [Commodity Trade Statistics Database](#)

³ World Bank, [World Development Indicators](#)

⁴ World Trade Organization (WTO), [Tariff Database](#)

⁵ Happyzebra, [Distances](#)

⁶ Credimundi, [Country Risks](#)

⁷ Coface, [Economic Studies](#)

⁸ Swiss Export Risk Insurance, [Cover Practice for Countries and Banks](#)

⁹ International Property Rights Index, [2013 IPRI Report](#)

¹⁰ U.S. Energy Information Administration (EIA), [International Energy Statistics](#)

For More Information

For the indexing methodology, please refer to:

"Measuring the Potential of Emerging Markets: An Indexing Approach" - S. Tamer Cavusgil, [Business Horizons, January-February 1997, Vol. 40 Number 1, 87-91](#)

"Complementary Approaches to Preliminary Foreign Market Opportunity Assessment: Country Clustering and Country Ranking" - S. Tamer Cavusgil, Tunga Kiyak and Sengun Yenyurt, [Industrial Marketing Management, October 2004, Volume 33, Issue 7, 607-617](#)