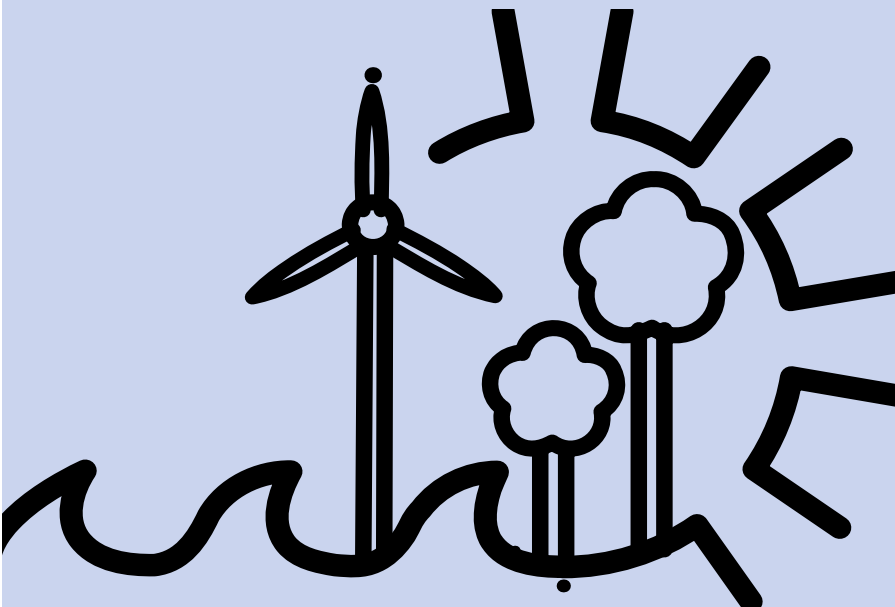


United States Renewable Energy Attractiveness Indices

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The Ernst & Young Attractiveness Indices provide scores for renewable energy markets, renewable energy infrastructures, and their suitability for individual technologies across the United States. The Indices are updated on a regular basis.

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Team Overview

Tax Credit Investment Advisory Services –
With a dedicated 15-member team of advisors focused solely on tax credit monetization, Ernst & Young's Tax Credit Investment Advisory Services (TCIAS) helps clients increase value from renewable energy activity. Members of the group, supported by a network of experienced professionals from our offices worldwide, provide advice and services in the following areas:

- Tax Credit Monetization
- Transaction Structuring
- Financial Modeling
- Investment Due Diligence
- Strategic Planning
- Other Federal Tax Incentives

In addition to TCIAS, Ernst & Young's Business Tax Services provides a wide variety of tax advisory services to the renewable energy industry. Among these:

Renewable Energy Group –

For more information on Ernst & Young's global Renewables Group refer to page 3.

Energy Efficiency Tax Incentives –

Ernst & Young can help clients move towards sustainability in their building projects, including helping to achieve Leadership in Energy and Environmental Design (LEED) certification and provide the documentation for immediate deductions of energy-efficient equipment in commercial buildings.

Washington Council Ernst & Young (WCEY) – is a lobbying group within Ernst & Young that represents clients on a wide range of energy and energy tax issues. In the energy sector, WCEY represents a wide variety of renewable energy technologies and trade associations including: solar, hydropower, open-loop biomass, closed-loop biomass, biodiesel, renewable diesel, and cellulosic biomass alcohol.

Overview of Indices

The main Indices (All Renewables, Long-term Wind, and Long-term Solar) are referred to as the 'Long-term Indices.' The Long-term Indices are forward looking and take a long-term view, and thus a state that has positive attributes (such as unexploited wind resource, attractive power pricing, tax climate) will score highly even if that state has little current installed capacity. Readers should refer to the guidance notes set out on page 14.

All Renewables Index

This Index provides an overall score for all renewable energy technologies. It combines Individual Technology Indices as follows:

- Long-term Wind Index – 70%
- Long-term Solar Index – 15% (Comprising the Small-scale Index and the Large - scale Index)
- Biomass – 10%
- Geothermal – 5%

Individual Technology Indices

These Indices are derived from scoring:

- Technology-specific parameters (the Technology Factors), accounting for 65%
- General state-specific parameters (the Renewables Infrastructure Index), accounting for 35%

Renewables Infrastructure Index

An assessment by state of the general regulatory infrastructure for renewable energy. On a weighted basis, the Index considers:

- Strength of Renewable Portfolio Standard (RPS) – 29%
- Planning and grid connection issues – 57%
- Access to finance – 14%

Technology Factors

These provide resource-specific assessments for each state. Each of the Technology Indices considers, on a weighted basis, the following:

- Power offtake attractiveness – 25%
- Tax climate – 8%
- Grant/soft loan availability – 8%
- Market growth potential – 25%
- Current installed base – 8%
- Resource quality – 18%
- Project size – 8%

Long-term Solar Index

These Indices are derived from scoring:

- The Large-scale (utility scale projects) Solar Index – 67%
- The Small-scale (non-utility scale or behind the meter projects) Solar Index – 33%

Comments and Suggestions

We welcome your comments or suggestions on any aspect of the Indices. Tailor-made attractiveness surveys and market reports can be provided which take account of specific corporate objectives. Please contact Michael Bernier or Roshni Patel with any comments and/or suggestions:

Michael Bernier
Tel: +1 617 859 6022
E-mail: michael.bernier@ey.com

Roshni Patel
Tel: +1 617 723 1053
E-mail: roshni.patel@ey.com

Potential Growth in the Geothermal Market

Current geothermal power production is not based on new technology. Prince Piero Ginori Conti operated the first geothermal plant in northern Italy in 1904 and to this day, the technology's popularity has been, at best, cyclical. Today, only 0.4% of the US energy supply comes from geothermal power and nearly all US generation is limited to a few western states. Further, in stark contrast to the abundance of optimistic press surrounding the market growth of the wind and solar industries, the geothermal industry has been largely overlooked. In fact though, the growth of the geothermal industry is currently as rapid as it has been at any point in the last 25 years.

Notwithstanding its lower profile and in anticipation of an extension of the production tax credit (PTC), current investment in the geothermal industry is booming. Raser Technologies Chairman Craig Higginson describes investment activity in the geothermal industry as robust not only "because it's an emission-free source of electricity, but also because of Section 45 tax credits that provide incentives for institutional investors to channel money into the sector." Even venture capital and private equity investment are making inroads into the sector. In fact, global venture capital and private equity investment in cleantech was valued at approximately US\$9b in 2007 – a 30% increase from 2006. Further, cleantech investment by US venture capital firms alone reached US\$2.6b in the first three quarters of 2007, compared with 2006's past record investment mark of US\$1.8b.

More specifically, the price of land for geothermal power is indicative of the growth of the industry. Current technology requires very specific resources that are limited to certain areas of the western US for successful power generation. The limited availability of these resources has caused a land-rush mentality among geothermal power generators and auction prices that peaked at US\$14,000 an acre at an auction of Nevada land held by the Bureau of Land Management (BLM) in August. While Ormat Technologies Inc. spent US\$8.2m dollars for 68,900 acres of land, US Renewables Group LLC – a firm backed by private-equity holdings Carlyle Group and Riverstone Holdings LLC – spent over US\$6m for one 470-acre tract.

Clearly, new private equity market entrants and expensive real estate do not necessarily indicate sustainable geothermal investment or growth. Limited land, resources, and modern technologies may severely hinder the industry's ability to expand into new markets – markets that contain lesser quality resources. Specifically though, despite the collective disappointment of the renewable energy industry with regard to the compromised text of energy legislation that was signed into law by President Bush on 19 December 2007, the geothermal industry specifically stands to benefit. The legislation excludes both a federal RPS and an extension of the PTC. Still, the legislation includes the Advanced Geothermal Energy Research and Development Act of 2007 (The Act). The Act directs the Department of Energy (DOE) to undertake aggressive funding for geothermal research and authorizes up to US\$95m annually to FY 2012. Based on suggestions contained in a report published by the Massachusetts Institute of Technology (MIT) and the National Renewable Energy Laboratory (NREL), the DOE is specifically directed to fund research for enhanced geothermal systems (EGS).

The MIT report describes EGS as systems "in which low or non-producing resources are engineered to become commercially viable." The report holds that with EGS, over 100,000MW of geothermal energy could be installed across the US by 2050. Alexander Karsner, the assistant secretary for energy efficiency and renewable energy at the DOE, states "the potential of [geothermal] could potentially be up in the double digits of our total national generating capacity. That means [up to] 20% of U.S. generating capacity." Notably, while the MIT holding is based on an assumption of a 15-year period of public and private investment in research and development for EGS, the report states that needed EGS technologies could be developed with a mere US\$300m investment.

In theory, EGS would not only allow lower temperature resources to be developed profitably, but allow other regions of the US to utilize geothermal power. Large pockets of resources are reported to be located across the US which could be tapped through EGS. Still, even in **Nevada** – a state described as "the Saudi Arabia of geothermal power" that has 1,000MW of capacity under development – site and transmission planning is often described as problematic or unfeasible. Thus, even if EGS are successfully developed and attempts are made to tap

Continued on page 13

Excerpt: Country Attractiveness Indices

The following table shows the results of the All Renewables Index from the Renewable Energy Country Attractiveness Indices Q4 2007 prepared by Ernst & Young's Renewable Energy Group based in the UK. The Country Attractiveness Indices provide scores for national renewable energy markets, renewable energy infrastructures, and their suitability for individual technologies.

All Renewables Index at Q4 2007

Rank*	Country	All Renewable	Wind Index	Onshore Wind	Offshore Wind	Solar	Biomass/Other	Infrastructure***
1 (1)	US*	70	71	77	56	72	63	72
2 (2)	Germany	67	66	65	68	73	68	66
3 (3)	India	66	67	76	44	62	60	66
4 (4)	Spain	64	65	70	50	72	57	73
4 (5)	UK	64	67	65	73	51	59	70
6 (6)	China	61	66	69	57	45	49	63
7 (7)	Italy	60	59	64	44	69	56	66
8 (8)	Canada	59	62	67	49	43	51	66
9 (8)	France	58	59	60	54	60	56	61
10 (10)	Portugal	57	58	63	46	62	49	64
10 (10)	Greece	57	59	63	49	59	43	60
12 (12)	Ireland	55	58	59	56	37	47	65
13 (14)	Australia	53	53	56	44	61	49	60
14 (13)	Sweden	52	52	52	52	44	57	53
15 (16)	Netherlands	50	51	51	51	50	43	49

Source: Ernst & Young LLP

* This indicates US states with Renewable Portfolio Standards (RPS) and favourable renewable energy regimes.

** Ranking in Q2 2007 All Renewables Index in brackets.

*** Combines with each set of technology factors to generate the individual technology indices.

The US loses three points in 4th Quarter Indices largely as a result of the Energy Independence & Security Act of 2007 (Energy Bill). Although the US keeps its place on the top of the index, it is in danger of losing its lead due to the impending expiration of the PTC which is set for December 2008.

Germany maintains second place and gains a point with the announcement of a new renewable energy heating systems law. The government also proposed increases in onshore and offshore wind tariffs, but decreased solar tariffs more than they were expected to. These developments resulted in a reduction of one point in the solar index, and an increase of one point overall.

India stays third, continuing to demonstrate strong growth in wind and solar and, in particular, hydropower, with plans being drawn for some 143 projects with a total generation capacity of 20GW.

Spain's solar index rises by one point after the government increased subsidies to solar power, promising to subsidize rates for the first 1,200MW of solar panels installed, followed by a system of gradually decreasing aid.

The UK gained two points and strengthened its financial attractiveness for investment as a result of high Renewable Obligation Certificates (ROC) prices and the government's reaffirmation of the proposed new Renewables Obligation (RO) scheme.

China gained a point after announcing high expected capacity figures for 2010 and beyond. However grid connection remains a very significant issue in China.

Italy gained one point after the tariff scheme for energy supplied to the national grid was simplified after the Italian government implemented revised purchase tariffs for wind generators whereby Italian producers get a reference price of €0.18/kWh, compared to €0.083/kWh in France and €0.082/kWh in Germany.

Ernst & Young's Renewable Energy Group:

With a dedicated 50-strong team of international advisors operating from our UK member firm, supported by a network of over 65 experienced professionals from our member firms worldwide, Ernst & Young's Renewable Energy Group (the Group) helps clients to increase value from renewable energy activity. Members of the Group provide advice and services in many sectors of the renewable energy industry.

Contact: For further information on the services we provide, and for future copies of the Renewable Energy Country Attractiveness Indices, please contact Jonathan Johns, Andrew Perkins, or Ben Warren:

Tel: +44 [0]1392 284 300

E-mail: jjohns@uk.ey.com

Web: www.ey.com/renewables

Highlights

All Renewables Index

In November, four agencies focusing on renewable energy (Network for New Energy Choices, Solar Alliance, Vote Solar Initiative, and the Interstate Renewable Energy Council) issued the 2007 edition of “Freeing the Grid”. This report analyzes net metering and interconnection through a comparison of state policies and designation of both interconnection and net metering “best practices.” This report was the first comprehensive analysis of national interconnection standards and the results were made available free of charge to the general public. Based on the information in the report, we adjusted a number of prior scores in the grid connection category of the Infrastructure Index.

Despite the changes in Q4 Infrastructure scoring, **Texas** and **California** retain the top two places of the All Renewables Index. Notably, Texas was able to expand its lead to 9 points based on strong Wind scoring and an increased grid connection score. **Minnesota** was the most significant mover in the Q4 scoring and gained five points in the All Renewable Index largely due to an increased score in the Long-Term Wind Index

Iowa and **Oklahoma** each fell four places to T-8 and T-10, respectively. These lower rankings were largely due to adjustments made to the grid connection category and based on the new information that was made available in the 2007 edition of “Freeing the Grid”.

Wisconsin, Illinois, Rhode Island, and **Idaho** were able to join the top 25 in the All Renewables Index, while **Nebraska, South Dakota, Kansas,** and **New Hampshire** fell out.

Geothermal Index

Texas gained two points in Q4 which allowed it to join **California, Nevada, New Mexico,** and **Oregon** in the top five.

Long-term Wind Index

Texas retained the top place and increased its lead by seven points in large part because of significant new additions to installed capacity. According to AWEA, Texas has 1,357MW of projects under construction and expected to come online as new capacity, in the near term. Texas’s pipeline of projects under construction is three times as large as that of the next largest state. Further, Texas’s pipeline is greater than the current installed capacity of every state except **California**.

Colorado and **Washington** greatly increased their scores in the Long-term Wind Index and tied for second place. Colorado’s score increased two points as the roll out of the Western Renewable Energy Generation Information System Renewable Energy Credits (WREGIS REC) trading system has allowed a mechanism for local utilities to meet the state’s 5% RPS for 2008. Washington benefited from rapid project development, including the 200MW White Creek wind farm and the start of construction on a 70MW second phase for the Morengo wind farm.

Long-term Solar Index

While there was a lot of movement within the rankings of the Long-term Solar Index, nine of the top ten states retained the same position. **Connecticut** fell out of the top ten as **Florida** was able to surpass it, due in large part to Florida Power & Light’s US\$1.5b commitment to buy solar thermal electricity as well as to possibly invest in utility-scale solar thermal generation facilities inside or outside of Florida.

Oregon was a notable loser in the Q4 rankings as its score fell six points, lowering its ranking from fifth to ninth place. This fall was due to the fact that its state investment tax credit has thus far failed to live up to initial expectations that it would inspire increased investment and market growth within the state. Once thought to be the next **California** for small scale solar, Oregon’s Q4 results appear to put these predictions into question.

Biomass Index

The top three rankings in the Biomass Index remained the same with **California, Maine,** and **Massachusetts** respectively.

Market Activity, Q4 2007

General

GE Energy Financial Services (GE Energy) has increased its original goal of investing US\$4b into renewables by 2010. Having already invested US\$3b, GE Energy increased its 2010 goal to US\$6b. GE Energy's current US\$3b investment mark was reached through a US\$300m investment in Horizon Wind Energy's 600MW portfolio of wind capacity spanning **Illinois, Oregon, Minnesota, and Texas**. With the closing of the Horizon deal, GE Energy's equity investment in wind farms now includes 85 wind farms and capacity in excess of 3,600MW globally.

Utilities, developers, and transmission providers throughout the country have urged the FERC to reform current methods for transmitting renewable energy onto and across the grid. The Midwest Independent System Operator insisted that reforms are greatly needed in that wind projects are added to the queue even if eventual construction is unlikely. In fact, in describing the Federal Energy Regulatory Commission (FERC) queue process as "broken," critics refer to the fact that US\$10,000 is often the only requirement to add a project to the queue.

Wind

On 6 December 2007, FERC approved Spanish utility holding company Iberdrola's US\$4.5b acquisition of Energy East. Energy East is the parent of two New York utilities — New York State Electric and Gas, and Rochester Gas & Electric. Iberdrola's wholly owned affiliate PPM Energy has a 50% ownership interest in the state's largest wind energy project — the 320MW Maple Ridge wind farm — as well as an active involvement in developing five more wind energy projects totaling more than 630MW of capacity in upstate New York. Please refer to "Year in Review: Wind" on page 10 for further detail on the wind market.

Solar

Last year was a good year for many of those who invested in the stocks of US solar companies. Listed below are the 2007 returns on major US solar stocks. Indeed, solar was clearly a fast mover in the market during 2007.

<u>Stock</u>	<u>2007 % Gain</u>
First Solar Inc. (FSLR)	795%
SunPower Corp. (SPWR)	251%
SunTech Power (STP)	142%
Evergreen Solar (ESLR)	128%
MEMC Electronics (WFR)	126%
PS Wilderhill Energy (PBW)	60%
S&P 500	5%

There are many factors affecting the value of solar companies, including the economy, oil prices, and interest rates. A growing market for solar equipment does not guarantee that the stocks will appreciate. As we have seen in the beginning of 2008, steady market declines hurt all stocks, especially high-multiple growth stocks.

Biomass

Aside from having the largest biomass-to-electricity plant in the US, **Florida** has 11 waste-to-energy plants and multiple differing biomass projects in the pipeline. Specifically, Progress Energy Florida and Biomass Gas and Electric of Atlanta are planning a 75MW wood-waste-to-electricity plant. Also, Green Circle Bio Energy, a subsidiary of Sweden-based JCE Group, is building a US\$65m wood-pellet plant.

With the longest growing season in the US and approximately 25m acres of forests and commercial land, Florida has the potential to be the leader in the biomass energy industry. Biomass Investment Group plans to develop a power plant and provide energy to over 80,000 Florida homes by burning a new crop called elephant grass.

The growth of Florida's biomass industry evidences the effects of improved state policy with regard to renewable energy. While Florida has a large installed capacity, very few biomass projects have been added in recent years. If current trends continue into a reliable pattern, look for Florida to climb the rankings in future Biomass Indices.

Geothermal

Nevada Geothermal Power Inc. (NGP) has executed a Large Generator Interconnection Agreement (LGIA) with one of **Nevada's** two large utilities — Sierra Pacific Power Company (Sierra Pacific). The agreement addresses transmission issues affecting 75MW of geothermal resources owned by NGP. With a project currently isolated from the grid, the agreement entails the construction of a 20-mile long transmission line over flat, undeveloped desert that will enable NGP to connect to Sierra Pacific's 120kV-transmission line. Access to Sierra Pacific's line will allow NGP to satisfy a 20-year Power Purchase Agreement (PPA) with the Nevada Power Company that includes the sale of electricity from NGP's 35MW Blue Mountain, Faulkner I project.

All Renewables Index at Q4 2007

Ranking*	State	All Renewables Index	Long-term Wind Index	Long-term Solar Index**	Biomass Index	Geothermal Index	Infrastructure Index***
1 (1)	Texas	80	84	75	70	69	81
2 (2)	California	71	67	80	77	78	74
3 (7)	Colorado	70	72	67	56	67	65
4 (3)	New Mexico	68	68	75	59	69	74
4 (7)	Washington	68	71	55	65	61	66
6 (4)	Oregon	67	68	65	68	68	68
7 (7)	New York	66	69	59	62	56	57
7 (4)	Iowa	66	70	56	63	53	60
7 (11)	Montana	66	68	60	62	67	70
10 (21)	Minnesota	65	68	55	62	52	60
10 (6)	Oklahoma	65	68	59	54	58	58
12 (19)	Pennsylvania	64	66	60	62	61	70
12 (13)	New Jersey	64	64	69	57	62	73
12 (21)	Hawaii	64	64	68	60	65	61
15 (13)	Massachusetts	63	63	60	71	66	73
15 (21)	Arizona	63	61	76	62	67	72
17 (27)	Wisconsin	61	62	54	61	54	59
17 (10)	Maine	61	60	56	71	65	60
19 (33)	Illinois	60	63	51	58	54	57
19 (17)	Vermont	60	61	57	58	57	55
21 (11)	North Dakota	59	63	49	57	48	50
21 (28)	Rhode Island	59	60	60	53	55	59
21 (13)	Connecticut	59	58	62	57	58	56
21 (26)	Idaho	59	59	61	50	58	58
21 (13)	Nevada	59	56	70	53	70	55

Source: Ernst & Young

* Ranking in prior quarter in brackets.

** Solar Index represents the index scores for both large- and small-scale solar.

*** Combines with each set of technology factors to generate the individual technology Indices.

Long-term Indices at Q4 2007

Rank	State	Long-term Wind Index
1 (1)	Texas	84
2 (6)	Colorado	72
3 (7)	Washington	71
4 (2)	Iowa	70
5 (4)	New York	69
6 (2)	New Mexico	68
6 (16)	Minnesota	68
6 (4)	Oklahoma	68
6 (11)	Montana	68
6 (8)	Oregon	68

Texas retained the top spot in the Long-term Wind Index. Yet, despite large market growth, the US wind market continues to struggle with transmission issues. While states such as **North Dakota**, **South Dakota**, and **Montana** will generate significant wind capacity over the next five years, many developers are eschewing these areas for those with available transmission and lower-quality wind resource (Illinois). This pattern is problematic for those states as developers typically develop an area fully before moving to the next market. This tendency is due partly to the market factors, laws, and other complications that differ from state to state.

Despite noted transmission and queue complications, **Minnesota** appears to be bouncing back from a period of slow development. For most of 2005, 2006, and 2007, Minnesota was known for small community wind projects. The Q4 2007 completion of three major wind farms – Freston Wind Power Project, MinnDakota Wind Farms, and Prairie Star with 402MW combined – shows that large-scale developments are still possible in Minnesota.

Leading the record-breaking installation of 5,255MW in 2007 and expansion of total US wind capacity by 45% was the installation activity in Q4. An abundance of large-scale projects came on line nearly simultaneously. In **Colorado**, Babcock & Brown/BP America installed its Cedar Creek project of over 300MW. In both **Washington** and **Minnesota**, projects of over 200MW added to their states' impressive total capacities. Further, Q4 installations of projects of 221.2MW, 125.4MW, and 100.65MW are evidence of the commonly held growth potential of **Oregon**. Similarly, with regard to its growth potential, **Illinois'** Q4 projects of 161.7MW and 150MW demonstrate that much growth can be expected from this state in the near future.

Rank	State	Long-term Solar Index
1 (1)	California	80
2 (2)	Arizona	76
3 (2)	New Mexico	75
3 (5)	Texas	75
5 (4)	Nevada	70
6 (8)	New Jersey	69
7 (7)	Hawaii	68
8 (9)	Colorado	67
9 (5)	Oregon	65
10 (11)	Florida	63

California, first place in the long-term Solar Index, continues to have the most developed small-scale solar market. SunEdison announced an agreement to install solar energy systems on the rooftops of 63 Kohl's department stores throughout the state. This will generate approximately 25MW of photovoltaic (PV) power and has the potential to supply roughly 3,000 homes. While the Kohl's deal is larger than most such transactions, the introduction of rooftop installations on "big box" retailers and selling the electricity via a power purchase agreement are common in California. With more and more of these transactions taking place in California, many solar project developers are trying to figure out the next big state for such projects.

Through **California's** impending RPS (20% in 2010) and the recent establishment and implementation of the WREGIS REC tracking system, the potential exists that states of the WREGIS will benefit. The addition of a more definitive REC revenue stream may make marginal projects possible. While the market is still immature (market began on 1 January 2008), solar transactions in **Colorado** are initially indicating high REC pricing.

Florida, which entered the top 10 of the Long-term Solar Index for the first time, currently does not have an RPS. However, Governor Charlie Crist has taken an active role in promoting renewable energy. In December, a planning workshop was held to work out potential details of a future standard. The Governor's requests for the adoption of a 20% RPS, increases in automobile and new construction efficiency, and greenhouse-gas reductions, coupled with an abundance of high-quality resources shows potential for the growth of Florida's renewable industry.

Commentary: High-scoring States

Texas (RPS — Current: 2280MW; 2015: 5880MW)

Ranking	Q4 07
All Renewables Index	1
Long-term Wind Index	1
Long-term Solar Index	3

Texas retained its first place ranking in the All Renewables Index based upon high scores in every category and, notably, a first place finish in the Long-term Wind Index and a third place finish in the Long-term Solar Index.

According to AWEA, as of 31 December 2007, Texas had over 4,300MW of installed capacity, 44% more than California, the state with the next highest level of installed capacity. Texas installed nearly 400MW in Q4 2007. Texas is also the leader in projects that are currently under construction, with nearly 1,400MW.

In addition to Texas's dominant position in wind, we are beginning to see the state's power generation developments branch out into other renewable technologies. Texas' largest solar project to date was recently completed in San Antonio and will generate 25% of a 67,000 square foot building's energy needs.

More notably, with regard to the needs of all Texas renewables, last month the Public Utility Commission of Texas approved a joint venture to build electric transmission projects in renewable energy-heavy zones of the Electric Reliability Council of Texas (ERCOT). The joint venture, between American Electric Power Company Inc. (AEP) and Warren Buffet's MidAmerican Energy Holdings Co., was approved as a "transmission-only" utility. Michael Morris — the chairman, president, and CEO of AEP — explained that the venture's future capital investments are based on the ERCOT transmission grid's "critical expansion needs to ensure reliability, meet growing electricity demand, reduce congestion, and support renewable generation." In fact, the venture has plans to invest approximately US\$1b in ERCOT transmission.

California (RPS — Current: N/A; 2010: 20%)

Ranking	Q4 07
All Renewables Index	2
Long-term Wind Index	11
Long-term Solar Index	1

While California remained in second place in the All Renewables Index, it fell from being tied for 8th to 11th in the Long-term Wind Index. Despite having the second largest installed base, California's ranking continues to fall due to its lack of new installations. Solano wind farm was the only new project placed in service in 2007. This continues the pattern that has developed over the past five years (annual average of 130MW installed). This pattern looks to continue as AWEA reports that only one project (45MW) is under construction and in the pipeline.

Given the demand for renewable energy created by California's impending RPS, one practical assumption, which is supported by newer resource maps, is that few sites with quality wind are either available or feasible (due to lack of transmission) for development.

We expect that California's low rate of installed capacity growth for wind will continue until projects like the Tehachapi transmission line become operable (expected to be 2010). This project is expected to allow nearly 4,500MW of wind capacity worth of wind resource to become feasible. California has a number of projects similar to the Tehachapi transmission line in progress.

Despite California's struggles with regard to the development of new wind projects, the state has positioned itself to be the dominant leader in the utility-scale solar sector. California has 44 projects (over 17,300MW) in queue as of September 2007. Several other projects are proposed to be located in the Mojave Desert — an area reputed to be one of the best locations for solar power in the world. Seventy-five percent of California's homes reportedly could be supplied by energy with solar panels covering only 1% of the Mojave Desert.

Commentary: High-scoring States

Colorado (RPS — Current: 5%; 2015: 20%)

Ranking	Q4 07
All Renewables Index	3
Long-term Wind Index	2
Long-term Solar Index	8

Colorado's ranking moved up from seventh to third in the All Renewables Index. Colorado increased its overall score by three points based on higher scores in the Long-term Wind Index and the Long-term Solar Index. Colorado installed 776MW of wind capacity in 2007 — more than its entire installed base in 2006.

In Q4 2007, the Cedar Creek wind farm became fully operational and grid-connected. The wind farm is a 300.5MW facility which is expected to generate enough energy to power over 90,000 homes. Further, and illustrative of the project's success, the project was completed on time.

While Colorado is not thought of as a top solar generator, this view may very well change in the near future. Colorado is ranked fourth in solar energy production and also has the largest PV solar-electric plant in the US. Further, National Renewable Energy Laboratory's Colorado headquarters provides valuable "intellectual capital" for solar companies as they commence business in the state. Compared to other states, Colorado does not provide substantial financial incentives to producers of solar energy. However, in turn, a knowledgeable and experienced workforce with countless entrepreneurs and entrepreneurial opportunities with regard to renewable energy has evolved.

More specifically, with its tremendous resource quality, the San Luis Valley is a "hot" area for utility-scale solar. According to the Denver Post, a number of concentrated solar developers have proposed new utility-scale projects in the area. SunEdison has also recently completed the aforementioned 8.2MW PV solar-electric plant in Alamosa, just outside of the San Luis Valley.

New Mexico (RPS — Current: N/A; 2011: 10%)

Ranking	Q4 07
All Renewables Index	4
Long-term Wind Index	6
Long-term Solar Index	3

New Mexico fell from third to fourth in the All Renewables Index. The fall was largely attributable to its failure to keep pace with other highly rated states in both installed wind capacity and immediate pipeline (no new installations in 2007).

Despite the recent slow times, New Mexico has a very interesting project in its pipeline. The Nambe Pueblo Council has approved construction of a 197-foot tower by newly formed Green Energy Wind to gather data on wind speeds and consistency over the next year. The proposed farm would be New Mexico's largest with 99 towers and 300MW of capacity. Further, while the size of the farm would allow the Nambe Pueblo community to avoid any future utility bills, the community would also be able to sell excess electricity to utilities.

The slowdown in wind development does not seem to have had an effect on other renewable energy developments in New Mexico. New Mexico continues to be a promising market for solar as indicated by its third place finish in the Long-term Solar Index.

Utilities in New Mexico are showing a growing interest in large-scale solar power generation. Public Service Co. of New Mexico, San Diego Gas & Electric, Southern California Edison, Tri-State Generation and Transmission Association, and Xcel are studying the possibility of building a concentrated solar power (CSP) project of up to 500MW in New Mexico. The southwest has massive potential for such projects because of its high resource quality.

Also, SCHOTT AG (SCHOTT) announced on 14 January 2008 that it will construct a new production facility in the Mesa del Sol region of Albuquerque, N.M.. The facility will manufacture receivers for CSP plants and 64MW of PV modules. SCHOTT chose the location of the new facility both because of its predictions that the market for solar energy will double over the next five years, and because of Mesa del Sol's proximity to the key solar PV module and CSP markets of the southwestern US.

Commentary: High-scoring States

Washington (RPS — Current: N/A; 2012: 3%)



Ranking	Q4 07
All Renewables Index	5
Long-term Wind Index	3
Long-term Solar Index	23

Washington jumped from seventh in 3Q to fifth in the Q4 All Renewables Index. Washington's move in the rankings is due, in part, to the increase of installed wind capacity during the fourth quarter of 2007. This increase in capacity confirmed our previous expectation that Washington would tap its renewable energy potential.

The state's 42% increase in wind capacity was a result of two wind farms coming on line – the Marengo 140MW wind farm near Dayton, Wash. developed by RES and the White Creek wind project.

Specifically, four utility companies came together to develop White Creek Wind Project in Klickitat County, Washington, with innovative financing transactions tied to power prepay and the pass-through of operating costs. The 204MW project, which was completed in November 2007, is Washington's second largest wind farm. The use of a unique structure, arranged by Meridian Clean Fuels, maximized the value of the production tax credits. The prepayment of power generated by the wind farm led this project to be completed promptly and economically. In this case, it was reported that the prepay will also help lower the cost that customers will pay their utility for wind power.

It will be interesting to see if this structure becomes more common in the future given the RPS requirements that utilities are increasingly facing. Of note, a majority of the White Creek project capacity will not be applied towards the state's RPS given that the smaller-sized utilities involved in the transaction are exempt from Washington's standard.

Year in Review: Wind

The US wind energy industry installed a record-breaking 5,255MW in 2007, thus expanding the nation's total wind capacity by 45%. Added wind capacity accounted for approximately 30% of all added power-producing capacity across the US. Total US wind capacity is now 16,818MW and this capacity is over 1% of the US electricity supply – enough to power over 4.5m homes.

Some of the highlights of 2007 by state were:

- Four states (Minnesota, Iowa, Washington, and Colorado) reached installed capacities of over 1,000MW of wind, joining Texas and California in this regard.
- In addition to Texas, Colorado (776MW), Illinois (592MW), Oregon (447MW), and Minnesota (405MW) were the states with the top five installed bases in 2007.
- Also notable was Illinois' addition of 592MW of new capacity, raising its total capacity from just over 100MW in 2006 to 699 MW by year-end.
- Missouri saw its first wind farm, Bluegrass Ridge (57MW), reach commercial operation.

In 2007, there were eight acquisitions of major US wind assets by European energy companies. The acquisitions' total value is estimated at US\$4.5b. While US\$4.3b of that value is concentrated in only two deals, many large European firms have now entered the North American wind market.

- Energias de Portugal acquired Horizon Wind Energy for US\$2.9b.
- E.ON will acquire the North American wind assets of Airtricity for US\$1.4b and the assumption of US\$533m in debt.
- Acciona and Iberdrola similarly acquired thousands of MW of completed US projects and development pipeline.

After an exciting and dynamic 2007, we are very interested to see what is in store for 2008. The pipeline for 2008 looks strong as well with AWEA reporting that over 3,500MW of capacity are currently under construction. One key for the upcoming year will undoubtedly involve securing a long-term extension of the PTC.

Bridging The Cleantech Financing Gap

Insights from the 2007 Ernst & Young Cleantech Symposium

While more than US\$2b in venture capital is expected to be invested into cleantech companies in 2007, many cleantech entrepreneurs feel that there remains a financing gap between the venture-backed equity stage and the commercialization phase.

"It's very difficult to convince a bank to invest a large amount of money in a new technology. It's hard for new start-ups to get the investment they need with no track record," explained Brian Robertson, President of SunEdison. SunEdison builds, owns, operates, and maintains commercial and utility scale solar power plants, removing the capital barrier for customers by selling them electricity rather than capital equipment.

As programs move to the commercialization phase, the project capital includes an increasing amount of debt. Project financiers, which issue or underwrite the debt, are by nature conservative and risk-averse, generally only granting financial support once a technology has been proven at a commercial scale. However, given the rapid pace of development by cleantech companies, a substantial technology risk may still remain, even as the commercial financing is being raised.

Therefore, entrepreneurs are developing a new fund raising model and accessing new sources of capital. "Venture capital firms used to raise funds and design operations to invest about US\$5m in a software company's first-round financing and perhaps as much as US\$7m in a second or third round," according to Martin Tobias, former CEO of Imperium Renewables (Imperium). This structure is ill-fitted to finance today's large-scale cleantech projects, which regularly raise US\$15m in the initial rounds and several multiples of that in the later rounds. For Imperium, Tobias secured US\$10m in a first-round financing and US\$148m for a second round, which combined equity and debt.

As a result, project finance is a looming concern to cleantech entrepreneurs and investors alike, who must grapple with difficult questions of scaling costs and return on investment. So how do start-up cleantech companies finance their growth to build scale? The panelists shared the following insights and suggestions.

1. Reduce Technology Risk

Get your technology to bulletproof status as quickly as possible.

"The golden rule of project financing is no technology risk, precisely because there are so many other risks involved," said Matthew Trevithick, partner at Venrock, a venture capital firm.

2. Investors Care about the Technology Warranty

Cleantech start-ups are being funded and the technology holds great promise, but ultimately the projects are assets with long lives and many financiers look closely at how the technology warranties will be fulfilled. "Our banks care about the credit behind the warranty of the solar panel. That is a critical issue," said SunEdison's Robertson.

3. Use the Government's Money

Take advantage of the availability of government-supported financing. Tax credits, for example, represent a major source of indirect funding for solar and biofuel companies, and new incentives continue to be implemented on the local, state, and federal level. Though investors warn entrepreneurs not to be reliant on these credits in the long term, they can keep the company capitalized in this crucial growth period.

4. Use Leverage . . . Wisely

Cleantech is following similar patterns in project finance as Independent Power experienced over the last few decades, which includes a high degree of leverage. Larry Kellerman, President of Cogentrix Energy, says of the Goldman Sachs wholly owned subsidiary, "When you look at the market value of our assets at Cogentrix, there is deep equity value and relatively modest project-based leverage. However, if you simply take a look at the historic cost based accounting records on our GAAP balance sheet, we look like we are nearly 97% leveraged. The amount of project-financed debt that exists across our portfolio of projects is over US\$3b." This degree of leverage can propel a company's growth to the next level, but requires financial discipline.

5. Reduce Debt-to-Equity Ratio

Some start-ups are able to garner financing by assuming a lower debt-to-equity ratio or lowering their equity percentage of ownership. "We had to de-risk the project and did so by taking a 50/50 debt-to-equity base," Tobias said. However, as the company matures to a later stage, the success from earlier projects will enable a higher debt-to-equity ratio.

Bridging The Cleantech Financing Gap

Insights from the 2007 Ernst & Young Cleantech Symposium

6. Find Customers

Entrepreneurs can also succeed in raising capital by addressing a stable market with existing customers. Investor confidence rises as cleantech companies secure multi-year contracts, especially in the area of power generation. "The number one thing is to find a customer. That is pretty basic, but it is critically important," said Cogentrix's Kellerman. He also recommends locking-in a customer over a long period of time. This strategy should deliver predictable revenue streams and margins, which also increase investor confidence.

7. Cleantech is a Replacement Technology

New clean technologies will have to push out old technologies in a traditional energy market. Venrock's Trevithick says, "The energy market is a replacement market, as opposed to the information technology market, which is constantly about new things. Many of the largest opportunities are going to find their gateways through large and existing energy producers."

8. Think Globally

Investors prefer global exposure wherever possible, since certain European and Asian markets are more receptive to cleantech products and services than the US. Entrepreneurs should seek out markets that offer great opportunities for adoption.

9. Remember Your Investors

Cleantech companies must recognize the needs of its investors to make a return, and incorporate technology risk and capital intensity into the financial models. Congentrix's Kellerman suggests building a business to deliver at least a 20% internal rate of return (IRR): "No one is going to look at you for under eight or nine percent. That is their cost of capital. If you have a new technology or any kind of risk, especially with the backdrop of the mortgage problem, debt people are looking for high teens to twenties IRR returns for new projects. I know that is very high for traditional generating assets, but for new ones that is a fact of life."

Despite taking these steps, entrepreneurs and investors must still be aware of the distinct financing needs of the cleantech industry. As Venrock's Trevithick points out, "The economics of energy financing has another zero at the end of it."

Overview of the Ernst & Young Cleantech Symposium

The first annual Ernst & Young Cleantech Symposium held in November 2007 brought together a unique group of over 100 executives in an invitation-only setting to discuss growth issues and partnering strategies in the clean technology industry.

The Symposium convened many of the leading stakeholders in cleantech to share insights and perspectives. Speakers included representatives from GE, Procter & Gamble, Imperium Renewables, IBM, Chevron, Aventine Renewable Energy, Sequoia Capital, Venrock, Bank of America, Sempra Enregy, EnerNOC, GridPoint, and SunEdison.

The Symposium brought actionable content to some of the most important issues facing the cleantech industry today. The panel discussions from industry leaders included topics such as 'Bridging the Clean Technology Financing Gap,' 'The Expectations of the Green Corporate Customer,' 'Valuing The Clean Technology Company' and 'Public Policy Trends in Clean Technology.' The second annual Symposium takes place in November 2008. If you would like more information or to request an invitation, please e-mail jules.miller@ey.com.

Q4 2007 Webcast

Renewable energy generation is developing and evolving at a rapid pace worldwide. Wind and solar energy have experienced double-digit annual growth for the past 10 years, and global investment in the renewable energy sector reached over US\$100b during 2007.

Renewable energy markets are highly complex, being dependent on diverse and often-changing government support mechanisms. Different renewable energy technologies have achieved various degrees of maturity, and the economic attractiveness of a given technology will vary depending on the markets in which it is deployed and the support it is given.

The Renewable Energy Country Attractiveness Indices have been running since the beginning of 2003 and are distributed exclusively to over 3,000 industry participants each quarter. They provide scores for 25 national renewable energy markets, renewable energy infrastructures and their suitability for individual technologies, and have been widely quoted by both the industry and national press.

Also featured for Q4 2007 will be the Biofuels Country Attractiveness Indices, which rank the attractiveness of 15 individual markets for biologically derived renewable fuels incorporating both ethanol and biodiesel.

You are invited to join the Ernst & Young Webcast on 18 March 2008 to hear our panelists discuss:

- A round-up of global renewables activity and a look towards what we expect from 2008
- Due diligence issues in renewables
- Recent legislative development
- Key movements in the Renewable Energy Country Attractiveness Indices and the Biofuels Country Attractiveness Indices

You will have the opportunity to raise issues and questions and vote on key issues.

Please contact Mandy Toy on +44 [0]1392 284395 or e-mail mtoy@uk.ey.com for further details.

To listen to last quarter's Webcast or register for the next Webcast go to www.ey.com/webcasts.

Potential Growth in the Geothermal Market

Continued from page 2

new resources, questions remain with regard to the likely impact of governmental approvals on the pace of growth of the geothermal industry. Of course, the issues of working through various governmental approval processes are hardly dissimilar from those which affect developers attempting to build and operate wind farms. Indeed, the development of EGS, like the

development of bigger and more effective wind turbines, could expand the geothermal industry into entirely new markets. The question remains as to whether government funding of EGS, or any other sources of funding, will be sufficient to propel both the development of said technology and, moreover, the growth of the geothermal industry itself.

Ian Y. MacDonald
ian.macdonald@ey.com

Commentary: Guidance Notes

Long-term Index

As stated on page one, the Individual Technology Indices, which combine to generate the All Renewables Index, are made up as follows:

- Renewables Infrastructure Index – 35%
- Technology Factors – 65%

These Guidance Notes provide further details on the Renewables Infrastructure Index and the Technology Factors.

Renewables Infrastructure Index

The Renewables Infrastructure Index is an assessment by state of the general regulatory infrastructure for renewable energy. On a weighted basis, the Index considers:

- Strength of Renewable Portfolio Standards – 29%
States with an RPS were ranked based upon the immediacy of the target deadlines, the amount of renewable energy that needs to be developed to meet the target, penalties if the target is missed, and the presence of a compliance-based Renewable Energy Credit market.
- Planning and grid connection issues – 57%
Favorable planning environments (low failure rates and easy to navigate approval/permitting processes) are scored highly. Grid connection scoring is based on the ease of obtaining a grid connection in a cost-effective manner. The score also takes into account the degree of grid saturation for intermittent technologies.
- Access to finance – 14%
A market with a mature renewable energy financing environment, characterized by cheap access to equity and good lending terms, will score higher.

This generic Renewables Infrastructure Index is combined with each set of technology factors to provide the Individual Technology Indices.

Technology Factors

These comprise five Indices providing resource-specific assessments for each state, namely:

- Onshore Wind Index
- Large-scale Solar Index
- Small-scale Solar Index
- Biomass Index
- Geothermal Index

Each of the Technology Indices considers, on a weighted basis, the following:

- Power offtake attractiveness – 25%
This considers the price received (including proceeds from REC sales and other major incentive programs such as state production tax credits) per kWh of electricity generated.
- Tax climate – 8%
Favorable, high-scoring tax climates that stimulate renewable energy generation can exist in a variety of forms and/or structures. Typical incentives and structures are direct renewable energy tax breaks, sales tax abatements for equipment, real estate tax abatements, and accelerated tax depreciation on renewable energy assets.
- Grant/soft loan availability – 8%
Grants can be available at local and/or regional levels and typically tend to be more prevalent in immature markets or technologies. Soft loans have historically been used for renewable energy technologies to kick-start the industry. High scores are achieved through an array of meaningful grants and soft loans.
- Market growth potential – 25%
This category takes a holistic approach to estimating a state's projected growth levels. The market growth potential takes into account information contained in other categories as well as information gathered but not included in one of the other categories.
- Current installed base – 8%
High installed bases demonstrate that the state has an established infrastructure and supply chain in place, which will facilitate continued growth. High installed bases are also indicative of the acceptance for such projects and the lack of public support can make planning and gaining approvals more difficult.
- Resource quality – 18%
Measures the quality of resources available, for example, wind speeds and solar intensity are indicators of resource quality.
- Project size – 8%
Large-scale projects provide economies of scale and a generally favorable financing environment. Large projects also are an indicator of local acceptance.

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