Quarter 1–2 2008

Renewable energy country attractiveness indices

In this issue:

Global highlights

China has displaced the UK in the top five most attractive countries for investment according to Ernst & Young. This has been caused by a combination of the Chinese wind industry seeing outstanding growth rates and the UK losing ground due to the slow speed of implementation of its proposed renewable strategy.

The Euromoney and Ernst & Young Global Renewable Energy Awards 2008 – are you nominated?

The prestigious Global Renewable Energy Awards are fast approaching. To ensure you have a chance to win and find how to complete the nomination form, see page 19.

Ernst & Young
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Ernst & Young was ranked the leading project finance advisor in the Americas, Europe, Middle East and Africa between 2001 and 2007 by Project Finance International.

Overview of indices

The Ernst & Young country attractiveness indices provide scores for national renewable energy markets, renewable energy infrastructures and their suitability for individual technologies. The Indices provide scores out of 100 and are updated on a regular basis.

The main indices (All Renewables and Long-term Wind) are referred to as the 'Long-term Indices.' The near-term wind index takes a two-year view with slightly different parameters and weightings (see below right).

The country attractiveness indices take a generic view and different sponsor/financier requirements will clearly affect how countries are rated. Ernst & Young's Renewable Energy Group can provide detailed studies to meet specific corporate objectives. It is important that readers refer to the guidance notes set out on pages 20 and 21 when referring to the Indices.

Long-term Indices

The Long-term indices are forward looking and take a Long-term view, hence the UK's high ranking in the Wind Index, explained by the large amount of unexploited wind resource, strong offshore regime and attractive tariffs available under the Renewables Obligation mechanism. Conversely, although Denmark has the highest proportion of installed wind capacity to population level, it scores relatively low because of its restricted grid capacity and reduced tariff incentives.

All renewables index

This Index provide an overall score for all renewable energy technologies. It combines Individual technology indices as follows:

1. Wind index – 75% (comprising Onshore Wind index and Offshore Wind Index)
2. Solar index – 10%
3. Biomass and other resource index – 15%

Individual technology indices

These indices are derived from scoring:

- General country-specific parameters (the renewables infrastructure index), accounting for 35%
- Technology-specific parameters (the Technology Factors), accounting for 65%

Renewables infrastructure index

This provide an assessment by country of the general regulatory infrastructure for renewable energy (see page 20).

Technology factors

These provide resource specific assessments for each country (see page 20).

Long-term wind index

These Indices are derived from scoring:

- The Onshore Wind Index – 74%
- The Offshore Wind Index – 26%

Near-term wind index

The near-term wind index takes a forward looking two-year view based on the parameters of most concern to a typical investor looking to make an investment in the Near-term. The Index gives scores for onshore and offshore separately. For parameters and weightings see page 21.

Comments and suggestions

We welcome your comments or suggestions on any aspect of the Indices. Detailed attractiveness surveys and market reports can be provided taking account of specific corporate objectives. Please contact Jonathan Johns, Andrew Perkins or Ben Warren:

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Renewables shine light on the credit and oil crunch

As reflected in the G8 Summit, the credit crunch and rising oil prices are two of the most pressing issues affecting the world economy.

Survey on lenders' appetite

The first phase of the credit squeeze affected industries such as the subprime mortgage and property markets. During this phase renewables proved resilient. The global economy is now seeing a second phase in the credit crisis which has reached further into the global economy than many suspected it would. To measure this impact Ernst & Young surveyed a number of lenders to see if their appetite for lending to renewable energy projects has changed in the last six months.

Does the credit squeeze improve renewable energy as an area which to lend?

	Q3 07	Q1 08
Improve	15%	0%
No impact	85%	100%

"On the whole the credit crunch has not impacted the attractiveness of the sector."

As in Q3 2007, all lenders surveyed believe pricing has been affected with margins 20-30 basis points higher as a result of the credit crunch, with lenders indicating this could increase further still.

Some lenders felt basis point increases would only occur on syndicated or club loans, rather than bi-lateral deals, although syndicated deals are expected to become more commonplace by the lending community.

Which of the following are most affected by the credit squeeze?

	Q3 07	Q1 08
Volume	50%	20%
Cover ratios	15%	40%
Appetite for merchant financing	30%	40%
Pricing	100%	100%

"Pricing will harden and ratios increase for syndicated deals. Pricing flex and cash sweeps are in. Re-financings are increasingly seen by banks as an opportunity to incease margins."

Some lenders believe that certain deals in 2007 were too tight – which the market is now rectifying: although given improvements on the revenue side, project IRRs may not be significantly affected.

We have seen no slowdown in projects being taken to financial close and providing they are soundly structured, expect this to be the case for the foreseeable future. We are finding that investors and bankers are increasing their due diligence activity in the renewables area. For example with biomass, the availability and sustainability of fuel source is critical.

Market response – IPO activity

"The global rate of IPO activity has slowed, share indices have fallen and individual renewable energy stocks have suffered accordingly."

A number of IPOs have been cancelled or postponed due to market conditions, for example, DONG Energy or Nitol Solar's postponed IPOs. It was, however, pleasing to see Portuguese utility Energias de Portugal (EDP) float its renewable energy division, EDP Renováveis SL raising €1.8bn (US$2.8bn). Priced at €8 (US$12.6) a share, just below the midpoint of the initial range of €7.4 (US$14) to €8.9 (US$11.7) announced on 15 May, the float is Europe's biggest so far this year.

The IPO activity slowdown has not been restricted to all stock exchanges. In Q1 2008, all bar one IPO occurred in Asia or Australia, compared to three from eight IPOs in Q1 2007.

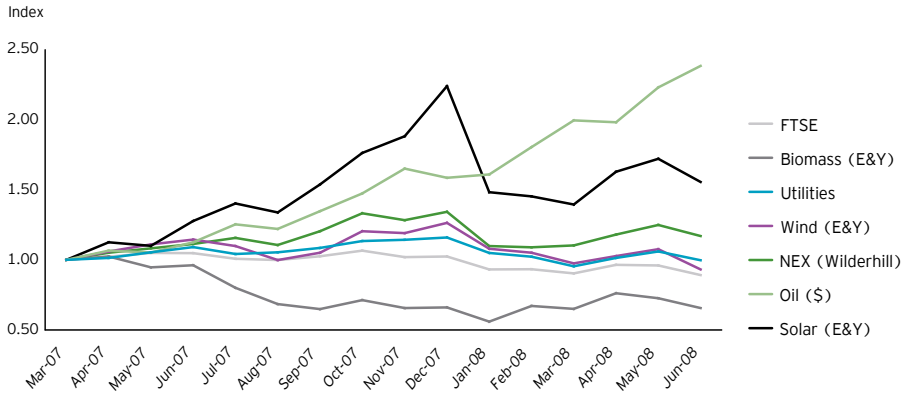
Renewable energy stock market indices performance – first half 2008

From March 2007 to June 2008, the FTSE index fell by 11%, whereas the Wilderhill Clean Energy Index (NEX) rose by 17% over the same period.

Data collected by Ernst & Young on selected renewable energy stocks (shown in the graph overleaf), show that the solar sector has performed better than other renewable energy technologies. The solar sector has seen a rise of 56% from March 2007, while wind companies decreased on average by 7% and biomass stocks fell by 34% on average in the same period.

"The rise in oil prices is yet to factor into renewable equity prices."

Renewable and other indices performance March 2007 – June 2007



Source: Ernst & Young – rebasing of FTSE All-Share Index plus data collected by Ernst & Young on over 30 listed renewable energy companies (developers and manufacturers but excluding marine, geothermal and biofuels) and global utilities

Average P/E by sector – solar correction

Price-earnings (P/E) data collected Q1 08 has revealed a large reduction in market expectations for solar companies. This reduction from internet company boom level P/E ratios suggests a maturing of the solar sector and a greater understanding of these stocks, with ratios at more sustainable levels.

It also reflects some concerns that taxpayer or energy consumer pressures may reduce support levels in some countries, such as Spain.

Biogas and biomass P/E ratios remain consistently lower, possibly due to the greater complexity of these businesses and the reliance on feedstocks with volatile prices.

	Q2 08	Q1 08	Q3 07
Solar	76	55	312
Wind	58	57	77
Biomass/biogass	23	24	33

Oil price paradox

The impact of rising oil costs is having a mixed effect on renewables. On one side, fossil fuel costs are rising, making renewable energy more competitive; with the appeal of 'free' energy inputs (wind, solar or marine) gaining greater exposure. Conversely, rising energy costs are putting pressure on governments to consider the cost of renewables – and its impact on the fuel poor in particular.

Value for money in terms of carbon tonnes saved is becoming increasingly important in assessing regulatory support. Despite indications from certain oil producers that production will increase, prices are not expected to drop significantly below US$100 in the very short term.

The reduction in carbon targets needs a fundamental shift in renewable capacity, requiring investment which is increasingly costly due to scarcity of resource and rising input costs, e.g., steel. The cost of the shift is high and difficult to pay for in the context of a world trade downturn.

The paradox for the industry is that with the rising cost of wholesale electricity, some technologies could in the medium term operate with renewable tariffs at a lower premium to wholesale electricity prices than is presently the case.

This is influencing debates in Spain, the US and increasingly in the UK where there is questioning of the cost of support to the taxpayer or energy consumer.

"Concerns about cost are perhaps behind the G8's acceptance of strong carbon targets, but Governments remain reticent as to the means to effect them."

While the drive to avoid carbon is strong, the industry needs to ensure voters get value for money with respect to the relevant regulatory mechanism in their market. It may be the financial markets are recognizing this fact and that is why the market valuations of renewable energy stocks have not followed oil price trends but rather the general market. Feed-in tariffs have the benefit of curbing the cost to the energy consumer of renewables in the context of rising oil prices. The challenge for those countries which prefer more market based mechanisms is to provide the levels of support renewable technologies need, whilst avoiding excessive cost should wholesale electricity prices continue to rise. Ultimately, all mechanisms are likely to be judged on their value for money in terms of carbon tonnes saved, as well as the benefits they provide in terms of security of indigenous energy supply.

Ernst & Young Utilities Group published a report on how an increase in use of renewable energy in the UK will impact the cost of household energy bills, estimating increases of 20% will be required to meet the 2020 targets. More details on this report can be found at www.ey.com on the utilities media pages.

Jonathan Johns
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Highlights of the indices

China has risen two places in the all renewables index to fourth place. It has increased one place to third place in the long-term wind index and fourth place in the near-term wind index due to impressive volume buildup in the short-term and a strong pipeline. This has helped it to displace the UK in the long-term wind indices. The short term projections of China by the IEA of 5GW by 2010 were achieved three years ahead of schedule and it is expected the 2020 target of 30GW will be exceeded with government targets likely to be increased. The Chinese have rapidly built up supply chain capability and are likely to have 9GW of manufacturing capacity in a few years. However, there are still fears over accessibility and the grid transmission system in some of the more remote areas and also the closed nature of the market which tempers our long-term view.

The **UK** has dropped a place in the all renewables index to sixth place and from second place to fifth place in the long-term wind index. This is despite publishing its Renewable Energy Strategy on 25 June and the release of Round three offshore projects, mentioned on page 17, the economics of which remain tight. There is now a two-year period of consultation and review before any of the proposals are implemented. This will leave just 10 years for the UK to establish a renewables infrastructure strong enough to meet its 2020 target. The proposals, which in themselves are welcome, envisage a 14% contribution from renewable heat and 10% from transport, together with a raised target for renewables of 33% (from 20%). Interestingly, in our Q4 2007 Indices we stated an expected target for renewable power of 35% to 40% would be required. The signalled change in UK policy prevented further decline in the position in the all renewables index. However, the UK is possibly being overly dependant upon its ability to translate ambitious targets into reality and needs to concentrate and improve its delivery track record if its position is not to decline further. In contrast, an acceleration of implementation would lead to a rebound in the UK score. A more detailed summary of the proposed strategy is found on page 13.

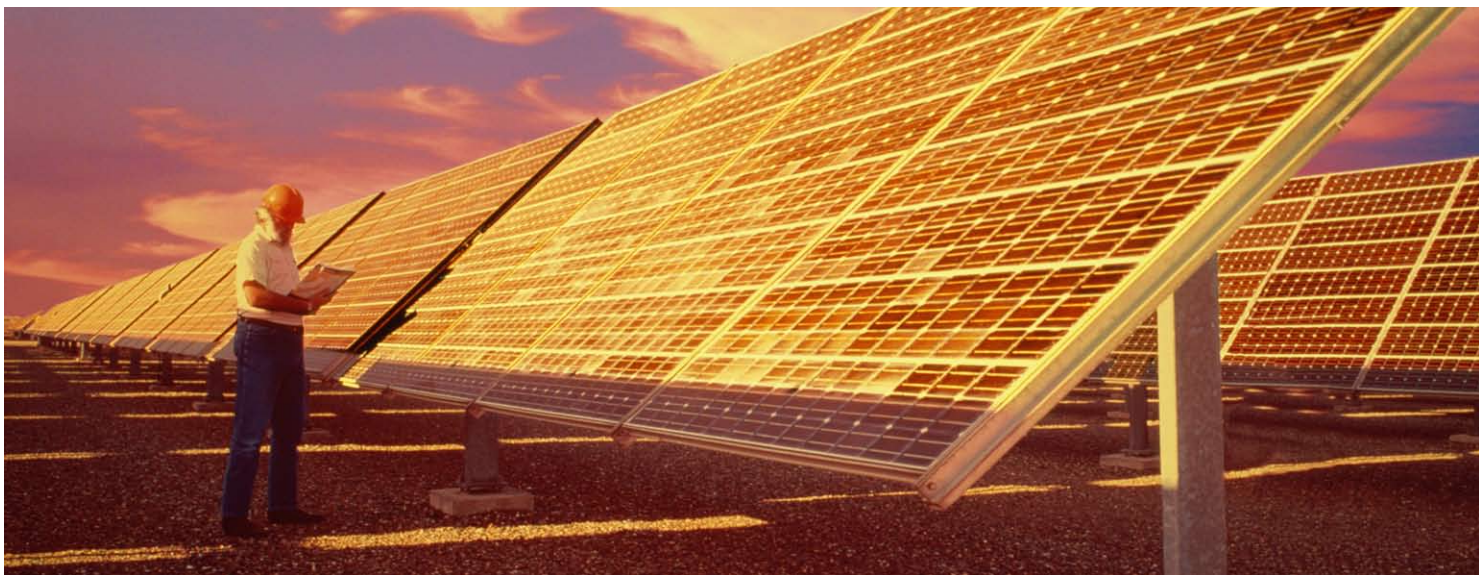
The **US** retains first position while the market waits for legislative developments in Washington surrounding an extension of the PTC. Although there is agreement it should be renewed, tensions are being caused by the requirement that energy measures as a whole should be budget neutral. One proposal is for the PTC for wind to be renewed for only one year and that for biomass and other technologies for longer. In addition, the recent announcement by the IRS on Notice 2008-60, clarifying the definition of related party for Section 45 transactions, could induce a fundamental change in the renewables market. This could mean US tax paying companies are best placed to capitalize on the value of renewable projects. This creates a challenge for specialist international developers (unless the latter own or have a joint venture with a local utility).

As a consequence, M&A activity in the US is likely to increase. This is explored further in the US country focus on page 11.

Meanwhile in Europe, Dutch legislators have confirmed expectation for no support for offshore wind in the near term, which reduces the **Netherlands'** score.

The all renewables index saw the rest of its movement from the mid-tier countries, with **Italy** introducing a banding system for its green certificate support regime. **Ireland** also released new support measures through an increase feed-in tariff for offshore wind and marine energy projects. There is a country focus on Italy and Ireland on page 15.

Denmark also increased its score following an increased onshore wind and biomass feed-in tariff. Details of this tariff are noted on page 9.



Deal activity, first half 2008

General

Q1 2008 saw Denmark's Ministry of Finance again postpone a planned IPO of **DONG Energy A/S**. This announcement was made in January 2008, shortly after a statement outlining the ministry's plan to float 28% of DONG's shares on the Copenhagen Nordic Exchange.

On June 4, Portuguese utility **Energias de Portugal** (EDP) floated its renewable energy division, EDP Renováveis SL, raising €1.8bn (US$2.8bn). Priced at €8 (US$12.6) a share, just below the midpoint of the initial range of €7.4 (US$11.7) to €8.9 (US$14) announced on May 15, the float is Europe's biggest so far this year. As of 6th August 2008 the price has fallen to €6.29 (US$9.70).

Iberdrola has made a public tender offer to take its majority ownership in Greek wind power company Rokas to 100%. Iberdrola which owns 52.7% of ordinary shares and 47.3% of preferred stock, values the transaction at €175m (US$277m).

Wind

Gaz de France announced the acquisition of **Nass & Wind Technologie**. The inclusion of Nass & Wind Technologie's 34MW onshore wind operational portfolio, 150MW permitted pipeline and 1,500MW development pipeline within Gaz de France has prompted the creation of a new subsidiary – GDF Futures Energies. This company will hold all Gaz de France's wind generating capacity.

EDP's subsidiary for US wind operations, **Horizon Wind Energy LLC**, acquired **Hydra Energy LLC**. Hydra Energy has a portfolio of six early stage projects in the US which have an expected pipeline of 1,050MW. Financial details were not disclosed.

EDP Renováveis acquired two French project developers, **EOLE 76** and **Eurocape**, during the first half of 2008. Costing €51.3m (US$81.3m), the acquisition will bring three operational projects with 35MW total capacity into the EDP portfolio. In addition, EDP has now increased its development pipeline by 530MW, mostly in the Normandy and Rhônes-Alpes regions in France. These projects are spread across all stages of development, including 8MW under construction and 12.5MW fully permitted, awaiting construction.

Norwegian renewable energy company **Havgul** has received approval for its proposed 350MW offshore wind farm, Havsul I. The Norwegian Water Resources and Energy Directorate (NVE), part of the Ministry of Petroleum and Energy, gave its approval for the project which will cost around NOK6 billion (US$1.2bn).

Scottish and Southern Energy (SSE) and **Forth Ports** have entered into a joint venture regarding the development of renewable projects in England and Scotland. The venture, called Forth Energy will invest in generation, distribution and supply of renewable energy both for export to the commercial network and for use at Forth Port sites.

Acquisition activity took place with Dutch utility **Eneco Holdings'** purchase of a 71% shareholding in Belgium onshore wind developer **Air Energy**. Air Energy has 55MW of operational capacity, 26MW under construction and a reported development portfolio of 299MW. Eneco paid €39 per share, which valued Air Energy at €151.5m (US$239.1m) and represented a 75% premium on the share price of the day.

China-based **Xinjiang Goldwind Science & Technology** announced plans to acquire 70% of German-based wind turbine manufacturer **Vensys**. Goldwind plans to spend €41.2m (US$64.5m) acquiring Vensys' shares, needing approval from shareholders.

Duke Energy acquired **Catamount Energy** for US$240m plus assumed debt in June 2008. Catamount has in excess of 2,000MW of development interests in the US and the UK. The acquisition is pending approval.

Bahrain investment firm **Arcapita** and the owners of India's **Suzlon Energy** will buy **Honiton Energy** to create a US$2 billion wind farm business in China. Honiton is an alternative energy provider with the rights to five properties in China's Inner Mongolia region and has the potential for up to 1,650MW capacity.

Solar

In the solar sector, **Hydro** (formerly **Norsk Hydro**) invested NOK147m (US$28m) in **Ascent Solar**, based in the US. This takes Hydro's stake in Ascent from 22% to 35% and the level of Hydro's investment in Ascent to just below NOK255m (US$50m).

Sinosol, a photovoltaic systems maker with subsidiaries in Germany and China, started selling shares as part of an initial public offering. Shares will be offered in the price range of €11 (US$17) to €15 (US$23.7) until 24 June 2008. Sinosol had expected the shares to begin trading on 25 June, but this has now been postponed with no new date set.

Gamesa, Spanish renewable energy developer, has sold its solar division, **Gamesa Solar**, to US venture capital firm **First Reserve Corporation**. First Reserve was expected to pay €261m (US$397m) for a project portfolio of over 40MW.

ABN Amro and Groupo Santander have entered a joint venture with specialist intra-fund manager **DIF** with a view to build a US$500m portfolio of solar PV assets in Spain, Italy and Greece.

Epuron has sold its 21.2MW El Calaverón solar PV power plant to investors after its financing was concluded.

Solar supply chain acquisitions this quarter included US-based **Applied Materials** acquiring Italian solar cell manufacturer **Baccini SpA** for c.US$334m. Applied shares fell to US$17.64, a drop of 1.4%, on release of the news.

Acciona has reached financial close on its 50MW Termosolar Alvarado concentrated solar power plant in Badajoz.

Phoenix Solar has founded a subsidiary in Greece following its framework agreement with a Greek developer for projects up to 25MW. The company is looking at the intermediate market to make the most of the €400/MWh tariffs on the mainland and €450/MWh in the islands.

Biomass

Helius Energy has obtained permission from the British Government to build a 65MW power plant fueled by waste wool, crops and the leftovers from timber processing. The plant will be sited in Stallingborough in Lincolnshire.

French nuclear group **Areva** has occupied 70% of brazillian business project designer Koblitz Renewable Energy. The sum has not been disclosed.

Geothermal

Scottish and Southern Energy has agreed to invest GB£15m (US$29.2m) for a 20% stake in **Geothermal International Ltd**, a supplier of ground source heating and cooling systems, which has developed over 90MW since 2000.

All renewables index at Q1-Q2 2008

Rank[1]		Country	All renewable	Wind index	Onshore wind	Offshore wind	Solar	Biomass/ other	Infrastructure[2]
1	(1)	US[3]	70	71	77	56	72	63	72
2	(2)	Germany	69	68	67	70	74	68	67
3	(3)	India	66	67	76	44	62	60	66
4	(6)	China	64	68	72	59	48	51	67
4	(4)	Spain	64	65	70	50	71	58	73
6	(4)	UK	63	66	64	71	50	58	66
7	(7)	Italy	60	59	64	46	69	58	66
8	(8)	Canada	59	63	67	50	43	51	67
9	(9)	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
10	(12)	Ireland	57	60	60	59	38	55	66
13	(13)	Australia	53	53	56	44	62	49	60
14	(14)	Sweden	52	52	52	52	44	57	53
15	(15)	Netherlands	50	51	51	50	50	43	49
15	(16)	Denmark	50	51	48	60	44	47	61
17	(17)	Belgium	48	52	50	57	36	37	53
17	(17)	Norway	48	50	50	50	32	48	53
17	(17)	Poland	48	51	53	45	42	36	46
20	(20)	Japan	45	46	48	40	48	34	51
20	(20)	Brazil	45	45	49	35	45	41	44
22	(22)	New Zealand	44	47	51	38	33	32	45
23	(23)	Finland	38	36	36	37	27	56	41
24	(24)	Turkey	36	37	38	33	38	27	35
25	(25)	Austria	35	30	41	N/A	48	49	49

Source: Ernst & Young

1 Ranking in Q4 2007 all renewables index in brackets

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

3 This indicates US states with Renewable Portfolio Standards (RPS) and favorable renewable energy regimes

The **UK** falls to sixth place due to the rise of **China** and the long timeframe to implement its recent proposals. This introduces significant political risk with the implementation timescales being close to the date of the next election, following the government's announcement of further proposals and periods of public consultation. In contrast, Germany has proceeded with a comprehensive legislative framework in a relatively short time. This is explored further on page 13.

The **US** retains the top position despite there being no sign of a Long-term support framework for the renewables industry. Considerable efforts are being made by pro-renewables lobbyists and senators to ensure the production and investment tax credits are continued into 2009. Most senators in both houses agree the PTC/investment tax credit should be extended. However, disagreement comes over how the credits should be paid for as all new policy in the US should be budget neutral.

Germany and **India** also retain their positions from Q4 2007, with the announcement by the German Parliament on the amendment of the EEG being reflected in the Q4 2007 Renewable energy country attractiveness indices.

Market uncertainty surrounding the development of **Spain's** solar tariff caused a drop of one point in the All Renewables Solar Index.

Developments in **Italy** saw a banding system announced for a green certificate system and feed-in tariff for smaller projects. These bands came into effect from 31 December 2007. However, no adjustments have been made to the solar PV tariff, which remains at c. €36/MWh (US$57/MWh). These are explored further on page 15.

Ireland rose to tenth place following the All-Island Study released during the quarter. The Irish Commission for Energy Regulation announced that with enhanced grid connection and modification it would be possible to have 42% of Ireland's electricity supply from renewable energy. This target was welcomed as a challenge by Minister Ryan, who also laid draft legislation before the Irish Parliament that would, if passed, allow the development of the East-West Interconnector.

Also in this quarter, new tariffs for offshore wind and marine energy were unveiled. (See page 15).

Long-term wind index at Q1-Q2 2008

Rank[1]		Country	Wind index	Onshore wind	Offshore wind
1	(1)	US[2]	71	77	56
2	(4)	Germany	68	67	70
3	(4)	China	68	72	59
4	(2)	India	67	76	44
5	(2)	UK	66	64	71
6	(6)	Spain	65	70	50
7	(7)	Canada	63	67	50
8	(11)	Ireland	60	60	59
9	(8)	Greece	59	63	49
9	(8)	France	59	60	54
9	(8)	Italy	59	64	46
12	(11)	Portugal	58	63	46
13	(13)	Australia	53	56	44
14	(16)	Denmark	52	49	60
14	(14)	Sweden	52	52	52
14	(14)	Belgium	52	50	57
16	(16)	Netherlands	51	51	50
16	(16)	Poland	51	53	45
19	(19)	Norway	50	50	50
20	(20)	New Zealand	47	51	38
21	(21)	Japan	46	48	40
22	(22)	Brazil	45	49	35
23	(23)	Turkey	37	38	33
24	(24)	Finland	36	36	37
25	(25)	Austria	30	41	N/A

Source: Ernst & Young
1 Ranking in Q4 2007 Long-term wind index in brackets
2 This indicates US states with Renewable Portfolio Standards (RPS) and favorable wind regimes

Germany has moved into second place as a result of the tariff changes and the impact this is expected to have on the German offshore environment. China has moved to third place as a result of the renewed growth rates over the next five years exceeding all previous forecasts.

Canada increased its Long-term Index score and its Offshore Index score by one point after the Ontario provincial government lifted the development ban for offshore wind projects on the Great Lakes.

Ireland, the largest mover this quarter, has risen from eleventh to eighth place, following legislative developments.

Italy's new green certificate banding has increased its Offshore Index score by two points. This is explored further on page 15 in a special feature on Italy.

Developments in **Denmark** saw the release of a new political agreement on renewable energy. Onshore wind has been awarded a revised tariff of DKK2.5/MWh (US$5.30/MWh) from DKK10/MWh (US$2.12/MWh), which is paid in addition to wholesale power prices.

This new tariff applies for the first 22,000 full load hours of the project. In addition, a subsidy to compensate wind farm operators for balancing costs of DKK2.3/MWh (US$0.49/MWh) is to be given and DKK0.4/MWh (US$0.08/MWh) for operator's contribution to the green fund.

Additionally, the Danish Government announced a statement of intent for two offshore wind farms, Horns Rev II and Rødsand II, with Dong and E.ON being identified as the developers respectively.

Following these developments, Denmark's Long-term onshore score rose by two points to 49 and moved to fourteenth place in the Long-term index.

Near-term wind index at Q1-Q2 2008

Rank[1]		Country	Wind index	Onshore wind	Offshore wind[2]
1	(1)	USA[3]	88	88	38
2	(2)	India	61	62	n/a
2	(3)	Germany	61	50	90
4	(8)	China	60	60	33
5	(4)	Spain	52	53	33
5	(5)	UK	52	44	74
7	(7)	Canada	50	50	n/a
8	(5)	France	48	48	43
9	(9)	Italy	47	47	n/a
10	(10)	Portugal	42	42	n/a
10	(11)	Ireland	42	40	49
12	(12)	Australia	40	40	n/a
12	(12)	Greece	40	40	n/a
14	(14)	Belgium	38	35	41
15	(14)	Denmark	37	29	42
16	(14)	Brazil	36	34	n/a
17	(18)	Poland	35	37	29
18	(19)	Norway	34	34	n/a
19	(19)	Sweden	33	34	34
20	(20)	Netherlands	32	33	33
20	(21)	New Zealand	32	32	n/a
22	(22)	Turkey	31	31	n/a
23	(23)	Japan	27	27	n/a
24	(24)	Austria	24	24	n/a
25	(24)	Finland	23	23	n/a

Source: Ernst & Young

1 Ranking in Q4 2007 Near-term wind index in brackets

2 Countries with no offshore development expected to reach construction in the next two years have been excluded from the Near-term Offshore Wind Index

3 This indicates US states with Renewable Portfolio Standards (RPS) and favorable wind regimes

The near-term wind index takes the perspective of an investor looking to make a commitment within the next two years. The methodology and weightings used to produce the near-term wind index are different to that of the Long-term Index so the two are not directly comparable. The near-term wind index places a greater emphasis on market growth and takes into account a narrower range of parameters than the long-term wind index.

The **US** retains top spot in the Near-term Index while concern grows over the renewal of the PTC, which is due to expire on 31 December 2008. The House of Representatives passed HR 5351 Renewable Energy and Energy Conservation Tax Act of 2008 which would, among other things, extend the PTC to 2011 and Investment Tax Credits (ITC) to 2016. These measures are similar to those removed from an early version of the Energy Independence and Security Act 2007. With a failed vote in June 2008 in the Senate, uncertainty remains as to whether a repeat of December's PTC/ITC rejection will occur, leaving the American market in limbo as the US PTC rollercoaster continues (as it has in other presidential years).

India retains its position from Q4 2007, with **Germany** joining it in second due the tariff amendments active from 1 January 2009.

Ireland's Near-term offshore increased from 47 to 49, due to a new offshore wind feed-in tariff, raising it's position to tenth place. See page 15 for an Ireland special feature.

Following Q4 2007, the new Dutch tariff was officially published on 3 March 2008. As with the draft legislation, no support is provided for offshore wind in the Near-term and as such the offshore index score is reduced from 37 to 33 points.

Country focus – US

US – production tax credit

Ranking	Q2 08	Q4 07	Q3 07
All renewables index	1	1	312
Long-term wind index	1	1	77
Near-term wind index	1	1	33

In a key vote by the Senate on 10 June 2008, a one-year extension of the PTC fell short of the 60 votes it needed. The issue of the PTC and it's extension past 2008 appears set to remain undecided at least until November, following the forthcoming presidential elections.

Recently the IRS issued Notice 2008-60, which clarifies the definition of related party for Section 45 transactions. This could induce a fundamental change in the renewables market, the main one being an inherent change in the business model of developers acting in the country. The local state utilities could find themselves with an increasingly competitive advantage over overseas developers. The full impact of this will be explored further in the upcoming US Attractiveness Indices (USAI).

Texas retained the top score in the long-term wind index. With a number of states tightly bunched, small movements in scores can easily cause states to rise or fall in these rankings.

Clipper Windpower and **BP Alternative Energy** have formed a joint venture to develop the worlds largest wind power project. The 50:50 venture will see the Titan project develop up to 5,050MW of wind resource in South Dakota.

In **California**, Southern California Edison, one of the largest utilities nationwide, is helping to address transmission issues by undertaking the largest transmission project in the country, the Tehachapi Renewal Transmission Project. Upon completion, the US$1.8 billion project could transmit 4,500MWs of wind power produced in the Tehachapi area of Southern California to approximately 3 million homes. The first phase of the project is scheduled for completion in 2009. The project is part of a larger US$5 billion transmission expansion proposed by Southern California Edison.

The lack of accessible transmission lines continues to be an issue not only for California, but for the entire US wind market. Nonetheless, we are starting to see signs of improvement. Recently, the New York Public Service Commission approved construction plans, along with the infrastructure for a 5.6 mile transmission line that is considered necessary for the development of a 127MW project in Wyoming County, **New York**. The approval and construction of additional transmission projects across the United States is a positive development for wind developers and a necessary step for the wind industry to meet many of the lofty goals it has set for itself.

On 1 May 2008, Ohio's Renewable Portfolio Standard was signed into law, which will require 12.5% of the state's electricity to come from renewable resources by 2025. The legislation has national significance as Ohio, a major industrial state, ranks 4th in power consumption (behind Texas, California and Florida).

New Mexico is experiencing increased demand from across the border in Arizona, where the local utilities are increasingly buying wind-generated power from their New Mexican counterparts due to resource constraints in Arizona. This has led to New Mexico moving from 4th to 3rd in the US State all renewables index.

All these stories and more are explored in detail in the USAI.

US state all renewables index top 10

Ranking		State	All renewables index	Long-term wind index	Long-term solar index[1]	Biomass index	Geothermal index	Infrastructure index[2]
1	(1)	Texas	80	84	75	67	69	81
2	(2)	California	71	68	80	76	78	74
3	(3)	Colorado	70	72	72	53	67	67
3	(4)	New Mexico	70	71	73	56	67	74
5	(6)	Oregon	68	69	66	67	66	68

Source: Ernst & Young US Attractiveness Indices

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

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

Country focus – India

India – feed-in tariff

Ranking	Q2 08	Q4 07
All renewables index	3	3
Long-term wind index	4	2
Near-term wind index	2	2

The Government of India has continued to stimulate growth in the renewable energy space with the recent announcement of three new incentive schemes:

- Megawatt Size Grid Interactive Solar Power Plants – a demonstration program with the objective to support solar power generation projects up to a maximum capacity of 50MW. The Government is to provide a generation-based incentive up to US$0.30/kWh for solar photovoltaic power and US$0.25/kWh for solar thermal power fed to the grid.
- Development of Solar Cities – 60 cities have been planned to be developed as solar cities in the 11th Five Year Plan (2007-2012). Financial assistance will be provided up to US$125,000 per city apart from the capital/interest subsidies as per various ongoing schemes.
- Power Generation from Municipal and Urban Waste – financial assistance would be provided to five projects initially at US$500,000/MW or 20% of project cost, whichever is less, up to a maximum of US$2.5m per project. The Government would also provide project development assistance at 50% of project cost subject to a maximum of US$25,000 per project.

India's biomass power potential from the surplus agri-residues available in the country (excluding biomass plantations) has been estimated by the Government at 18GW. Further, a potential of 5GW of surplus power generation through optimum bagasse-based cogeneration has been estimated in the existing sugar mills of the country. A target of 1,700MW capacity has been proposed during the 11th plan period, consisting of 500MW of biomass power projects and 1,200MW of bagasse cogeneration projects.

Empee Group has commissioned a biomass-based power plant. The 10MW plant, set up by the power division of Empee Group, at Aranthangi in Pudukottai district, went online at the end of May 2008 with energy generated from this plant would be added to the state grid through the Tamil Nadu Electricity Board.

India's wind energy sector has seen significant interest from foreign players. Among these are **Roaring 40s** (50MW wind farm in Maharashtra), **CLP** (100MW and 82MW wind farms in Gujarat and Karnataka respectively) and BP Energy (40MW wind farm). **Epuron Energy**, a subsidiary of **Coenergy** of Germany, is planning to set up 550MW wind farms in the next three to four years, **Westwind** of Australia and **Acciona** of Spain are also planning to invest in wind farms in India. The Asian Development Bank in April 2008 announced that it will provide a US$113 million loan to CLP's two proposed wind power facilities in the Indian states of Gujarat and Karnataka.

Kenersys, the wind energy company of the leading Pune-based forgings maker, **Kalyani Group**, has received an undisclosed investment from First Reserve Corporation, the private equity firm that recently acquired Gamesa Solar.

West Bengal has become the first state in India to implement a megawatt-level grid-connected solar power project. **The West Bengal State Electricity Distribution Company** and the West Bengal Renewable Energy Development Agency are implementing a 2MW solar photovoltaic project at Jamuria in Burdwan

Signet Solar has committed to building its second large substrate thin-film photovoltaic plant in the Sriperembudur Special Economic Zone near Chennai. Construction is expected to start later in 2008 on a 300MW facility at an initial estimated cost of US$500 million. Signet Solar plans to build three plants in India over the next ten years at a total investment of US$2 billion.

Moser Baer India is investing c.US$1.5 billion in increasing its thin-film photovoltaic capacity to 600MW over the next two years from the existing project capacity of 40MW. **PV Technologies India**, a Moser Baer wholly owned subsidiary, has signed a memorandum of understanding with a leading US-based equipment supplier to secure supply of critical equipment.

The Indian Government's Special Incentive Package Scheme, aimed at attracting semiconductor manufacturing investments, is also having a significant impact on the photovoltaic industry. Currently, investments of $2.6 billion during the next three years have already been approved with a further $7.4 billion worth of projects under consideration.

Bhilwara Energy has firmed up its plans to set up 200MW of geothermal power plants at an investment of US$625 million over the next four to five years. The company has entered into an equity partnership with Iceland-based Investment **Bank Glitnir** which will be responsible for raising capital and supplying specialist consultants for the proposed geothermal projects. Bhilwara will bring its large-scale infrastructure and local experience to the partnership.

Country focus – UK

UK – obligation and traded green certificate

The UK government announced its Renewable Energy Strategy on 25 June 2008 in which proposals were laid out for the 2020 targets for all renewable technologies. Currently this is in a period of consultation, but some of the proposals on the table include:

- Introduce new binding regional targets for the delivery of local renewable energy schemes.
- The introduction of a new financial incentive mechanism to encourage a large increase in renewable heat deployment, such as the burning of wood or other biomass or the use of solar heating.
- Upgrade of the national grid network to facilitate connection of new wind farms.
- Extension of the Renewables Obligation to 2040.
- Exploiting the full potential of energy from waste, by discouraging the land-filling of biomass as far as is practical.

The lion's share of the 2020 of 20% of energy generated from renewables target will have to be generated from wind, anticipated to be around 33GW of additional capacity. The plans will see an additional 4,000 onshore and 3,000 offshore wind turbines. It is expected the plans will cost the country around GB£100bn (US$200bn). The strategy aims to increase the UK's generation of renewable energy ten-fold in the next 12 years. The initial consultation period is due to close on 26 September 2008.

With the announcement concentrating on the proposals stage, the UK will struggle to regain its position in the Index in the immediate future. By comparison, Germany, which has a feed-in tariff mechanism under the EEG, is actively moving towards their target. While Germany has delivered a high level of renewable power capacity through the EEG, it is worth comparing the cost to the consumer of such support with the UK's RO, as given in the table opposite. Although a feed-in-tariff may be culturally incompatible in the UK, there is an argument that the ROC system needs a review if it is to deliver the required capacity in a cost-effective manner, whilst providing additional support to developers who are experiencing increased equipment costs due to rising raw material prices such as steel and the relative strength of the Euro to the GBP.

Scottish and Southern Energy (SSE) have been granted consent to develop Europe's largest onshore windfarm. The 456MW Clyde Project became part of SSE's portfolio upton the aquisition of Airtricity earlier this year. In addtion, SSE were granted consent for their 87.5MW Gordonbush wind farm.

The offshore sector saw the announcement of UK's round three offshore site leasing, with the announcement made by the Crown Estate on 4 June 2008 for an additional 25GW of capacity.

Currently there is just short of 200MW forecast to be installed offshore in the UK in 2008. More detail on the UK offshore picture is explored in our Offshore section on page 17.

Cost to consumer comparison, EEG to RO

	EEG (2006) Germany	RO (2005/06) UK
Type of support	Fixed feed-in tariff	Obligation with tradable certificates
Term	20 years	Ends 2027
Typical level of support	GB£0.034 to GB£0.11 per kWh (depending on technology)	GB£0.80 to GB£0.10 per kWh[1]
Total power sales (2006)	611 TWh	329 TWh
Total annual cost to consumer (2006)	GB£1,870	GB£579m (GB£32 buy-out price on 5.5% obligation x total electricity sales)
Unit cost to consumer per kWh total power sales	0.31p/kWh	0.18p/kWh
Renewable electricity production (TWh)	72.7	18.1
Unit cost to consumer per kWh renewable electricity	2.6p/kWh	3.2p/kWh

Source: DEFRA/BERR Renewable Heat Support Mechanisms (October 2007)

1 Brown power plus LEC plus ROC (buy out plus share of ROC recycle) less a discount for having a Long-term power purchase contract. Support provided by non-compliant energy suppliers is roughly one-third on top of that paid by compliant suppliers (since they cannot pass the cost of the ROC recycle on to consumers in a competitive energy supply market)

Onshore wind activity in the UK saw the commencement of turbine erection at Scoutmoor wind farm, being developed by Peel Windpower. In addition, the 24MW West Durham wind farm being developed by The Banks Group reached financial close.

Planning and the grid infrastructure remain critical to the UK onshore market. The envisaged changes to planning regulation in the UK will favor projects in excess of 50MW, but may well have the effect of curtailing development effort to a relatively small number of large projects. This would be to the detriment of the overall installed capacity of the UK.

Country focus – Spain

Spain – fixed premium

Ranking	Q2 08	Q4 07
All renewables index	4	4
Long-term wind index	6	6
Near-term wind index	6	6

Although there are strong concerns over the future direction of Spain's solar tariff, which has led to a reduction in it's score, its has just held onto it's 4 ranking. **Red Electrica**, Spain's electricity transmission operator, reported that onshore wind energy met 10% of Spain's annual demand during 2007. Under the EU target, Spain will need to generate 20% of its total energy from renewable sources by 2020.

In addition, **Iberdrola Renovables** has opened its 20MW Dos Pueblos onshore wind farm, in the province of Guadalajara. The wind farm cost €24m (US$38m) in total.

Iberdrola Renovables has also announced the development of a 50MW solar thermal electrical plant in the province of Aragon, which is expected to cost €200m (US$319m) and be the largest plant of its type in the region. The project has yet to undertake an environmental impact assessment or acquire the required permits.

Further solar activity saw US-based Meinl International Power announce the development of a 15.4MWp solar farm in Almeria, for a planned cost of €87m (US$139m).

Phoenix Solar won the contract to build two ground-mounted photovoltaic plants with a total capacity of 4.7MW, in conjunction with First Solar who will provide thin-film modules for the project.

In a multiple technology development plan, Acciona Energia is developing a portfolio in the region of Extremadura with a capacity of 359MW. Acciona, which recently opened a 6MW photovoltaic solar garden, is currently constructing a 50MW solar thermal plant, also plans to build another solar thermal plant, a biomass plant and seven wind farms. The estimated cost of this is €900m (US$1.4bn), to be completed by 2010.

The solar tariff could be set to fall by up to 35% according to draft government proposals. However, a formal accouncement is yet to be made but is expected in the weeks following publication of these indices. Concerns about this reduction have had an adverse impact on the quoted share prices of a number of solar companies. In the past, such changes have been successfully modified following industry lobbying. Should the proposal be enacted as drafted, Spains position in the indices will drop significantly.

Country focus – Australia

Australia – from renewable energy wasteland to boom time

Ranking	Q2 08	Q4 07
All renewables index	13	13
Long-term wind index	13	13
Near-term wind index	13	13

The most tangible symbol of improvement for the renewable industry in Australia has been the price of Renewable Energy Certificates (RECs). Since October 2006, when they were trading at AUD$12 (US$11.4), the price of RECs has rapidly recovered and they now trade at around AUD$45 (US$42.9). We estimate that if the target builds up in a linear basis to 2020, around 1,000MW of new renewable generation capacity will be required every year from 2009 until 2018.

To provide a feel for how significant this is, Australia's entire installed capacity of wind right now is only about 1,000MW. It will mean that around half of Australia's new additional electricity generation will be renewable.

Recently, the states of South Australia, Queensland, Victoria and the Australian Capital Territory have announced they will implement premium feed-in tariffs for electricity exported to the grid from household solar PV systems. In addition the Labor federal government will phase out electric storage water heaters beginning in 2010, creating a large market for solar hot water.

Now that Australia has a conducive policy environment for renewable energy, Ernst & Young intends to prepare a comparative assessment of the relative attractiveness of each of the Australian states for renewable energy investment.

Country focus – Italy

Italy – obligation and traded green certificate, feed-in tariff

Ranking	Q2 08	Q4 07
All renewables index	7	7
Long-term wind index	9	8
Near-term wind index	9	9

Legislation introduced in the most recent budget and approved this half will implement a banding system on the green certificates, placing technologies into discrete 'bands' depending on their level of maturity and economics.

For those projects with a capacity of less than 1MW (less than 200kW for onshore wind) a feed-in tariff has been established. This is the first time such a tariff has been in place since CIP6.

Market reaction to the changes has been muted, with some experts commenting that the banding does not greatly affect current or future project economics.

Italy has a target of increasing the share of renewables in electricity production to at least 25% by 2010 (currently 14.6%).

Under the EU's 2020 energy targets, Italy will need to generate 17% of its total energy by 2020. In 2005 Italy generated 5.2%.

Poor rainfall in recent years has had a negative impact on hydro output, leaving other technologies such as wind to fill the gap. The new tariffs aim to support those technologies with the greatest potential for meeting Italy's targets.

New subsidy regime:

Renewable technology	Feed-in tariff/MWh < 1MW	Banding > 1MW
Hydro	€220 (US$391)	1.0
Onshore wind (<>200kW)	€300 (US$478)	1.0
Offshore wind	–	1.1
Geothermal	€200 (US$319)	0.9
Wave and tidal	€340 (US$542)	1.8
Biomass – distant supply	€220 (US$351)	1.1
Biomass – local supply	€300 (US$478)	1.8

Country focus – Ireland

Ireland – feed-in tariff

Ranking	Q2 08	Q4 07
All renewables index	10	12
Long-term wind index	8	11
Near-term wind index	11	11

Ireland was the largest mover of the quarter and saw a rise from 11 to 8 in the long-term Index and a rise of four points in the near-term Index.

In offshore wind, Eamon Ryan, the Minister for Communications, Energy and Natural Resources, announced a new 15-year feed-in tariff of €140/MWh.

In addition, marine energy devices are now able to receive a feed-in tariff of €220/MWh. This will prove to be a significant boost to Ireland's fledgling marine renewable industry and looks to be one of the first feed-in tariffs specifically for marine technologies.

Biomass and anaerobic digestion received a boost following an announced new feed-in tariff of €120/MWh, as well as a grant pool available of €11m (US$17.4m) to help develop combined heat and power projects.

The 'Gate 3' connection policy consultation process closed in the first half of 2008. The Commission for Energy Regulation will now decide on the best method of allocating connections to the projects queue. Consultation documents stated that c.5,800MW would be allowed in the Gate 3 process.

The Irish Government is also legislating to support the competitive advantage from natural resources with the greatest potential in Ireland.

Ireland has a target of increasing the share of renewables in electricity production to at least 33% by 2020 from 8.6% in 2006.

Under the EU's 2020 energy targets, Ireland will need to generate 16% of its total energy by 2020 from 4.5% in 2006.

Country focus – Germany

Germany – feed-in tariff

Ranking	Q2 08	Q4 07
All renewables index	2	2
Long-term wind index	2	4
Near-term wind index	3	3

On 6 June 2008, the German parliament adopted the amendment of the Renewable Energy Sources Act. From 1 January 2009 onwards, onshore and offshore wind energy will receive higher buyback prices with onshore wind increasing to €92/MWh from €80.3/MWh and offshore set at €150/MWh for the first five years and dependant upon the wind from energy yield for projects built before 31 December 2015. Solar PV systems will receive a feed-in tariff of €330-€430 /MWh, depending on the amount of electricity sold to the public grid. According to the new law the tariff will decrease between 8% to 10% in 2010 and then 9% annually after 2011.

Germany's legal reforms also promote bio-mass. Projects can receive feed-in tariffs of €77.9–€116.7/KWh for electricity from biomass. There are also bonus incentives to encourage the use of sustainable raw materials, or the simultaneous use of biomass in a CHP, or co-generation plant.

During the first half of 2008, the German federal cabinet adopted an ordinance for the promotion of biogas within the existing natural gas system in Germany. Germany has a target of 10% biogas usage, of current natural gas consumption, by 2030.

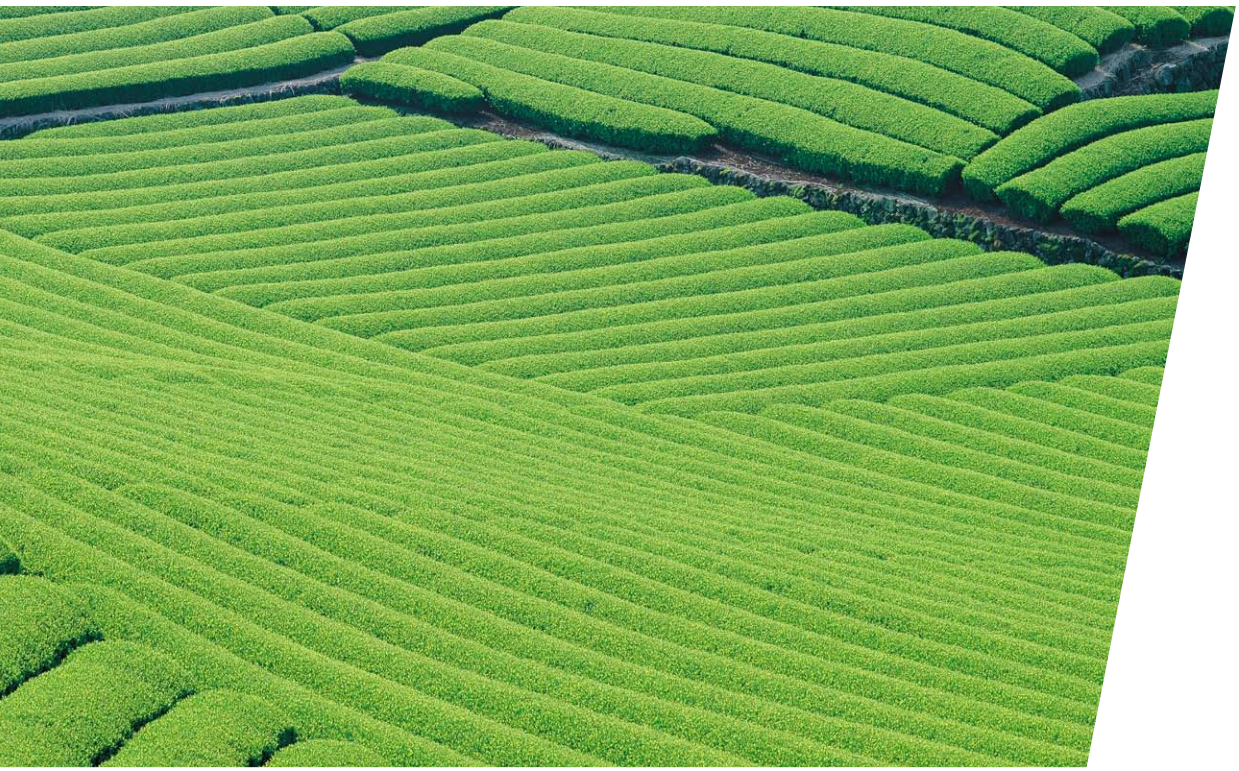
Under the EU targets, Germany will need to generate 18% of its energy from renewable sources by 2020.

Onshore wind activity included **Allianz Specialized Investments** acquiring a 20MW wind farm that has just finished construction. This increases Allianz's portfolio to 241MW, from 10 onshore wind farms.

Offshore wind saw a number of contracts being signed as developers progress projects, keen to have projects built by 2012 in order to ensure grid infrastructure is constructed by the utilities, as mandated by the German Government. **Energiekontor** signed a letter of intent with **REpower Systems** to supply 185MW turbines to its Nordergruende offshore project, scheduled to be supplied between April and June 2009.

The solar industry saw **Colexon Energy** commence construction of the first solar plant in a €21m (US$33.2m) series of projects. The full contract will see the deployment of 5.6MWp across Germany.

As part of a wider global solar supply chain increase, **Centrosolan** have started the construction of a €20m (US$31.6m) expansion to its solar module assembly factory in Wisman, Germany. Once complete, the factory will have an annual combined capacity of 150MWp.



Offshore issues

North Sea

In a consultation document, OFGEM was identified as the body that will run competitive tenders for the ownership and construction of new offshore transmission grids in the UK once a system is developed. OFGEM will first focus on the transition of existing grid infrastructure before the development of new capacity. Development of the new tender process is expected to be completed by the end of 2008.

In June 2008, the UK's Crown Estate launched Round three of its offshore wind farm development. The program will allow the delivery of 25GW by 2020 with the Crown Estate planning to co-invest up to 50% of the cost of obtaining planning consents. This is a welcome development as the economics of UK offshore projects remain challenging in some cases due to rising steel prices and strengthening of the Euro against the GBP.

An application has been submitted by **Imera Hydragrid**, a subsidiary of Norwegian-based **Oceanteam**, to OFGEM to build three connecting cables between the UK and Europe. The first would link the UK at Canterbury, to Belgium at Koksijde. The second and third cables would link the UK to France between Dorset, Normandy, Cornwall and Brittany.

Further up the coast, developer **RWE Innogy** announced plans for two offshore wind farms in Dutch waters totalling 2GW.

In the Thames estuary, the 64MW Gunfleet II offshore windfarm was given approval by the UK's Energy Minister Malcolm Wicks'.

Also in the Thames Estuary, the 1GW London Array has moved into it's tendering stage. This stage is expected to continue during most of 2008. **Shell** sold its 33% stake, to concentrate on wind power in the US. E.ON and Dong, the other partners in the project will share Shell's stake 50:50.

Still in UK waters, utility **E.ON** submitted a planning application for its GB£700m (US$1.39bn) Humber Gateway offshore wind farm.

Deeper in the Humber Estuary, tidal forces are to be harnessed using **Pulse Generation's** tidal stream generator. Planning permission was granted by the UK energy secretary for a 0.15MW prototype model to be deployed.

The German Government has announced that it intends to build 30 new offshore wind farms. German Transport Minister Wolfgang Tiefensee unveiled the plans that would include a total of 2,000 wind turbines in the North Sea and Baltic Sea which would provide 11,000MW of electricity. Tariffs for offshore wind now stands at $350/MWh for 20 years plus the remainder of the year of commissioning. The increased tariff for the first 12 years is $130MWh.

If the distance of the project to the shore exceeds 12 nautical miles and the water depth exceeds 20 metres, the 12-year period will be extended by 0.5 months for each additional nautical mile and by 1.7 months for each full metre in excess of 20 metres.

Offshore project developer **Evelop** received approval for its 330MW Bligh Bank wind farm off the coast of Belgium. Evelop confirmed **Vestas** as its preferred turbine suppliers using the V90 3MW turbines.

Atlantic Ocean

PSEG Renewable Generation and **Winergy Power Holdings** submitted a proposal to construct The Garden State Offshore Energy wind farm, a 350MW offshore farm, off the coast of New Jersey, in the US.

Also in US waters, the Governor of Rhode Island issued a request for tenders to construct and operate an offshore wind farm capable of generating 1.3 million MWh per annum. Assuming a load factor of 35%, this would require an installation of c.425MW.

On the other side of the Atlantic, **Iberdrola Renewables** presented plans to construct six offshore wind farms that would have a total capacity of 3GW, in Spanish waters. Iberdrola stated the projects would come into operation from 2011 to 2015, if all development stages were met on time.

Iberdrola is also investigating wave technology in Spanish waters. It is currently developing a 1.4MW wave plant off the coast of Cantabria.

Other marine energy projects in the Atlantic Ocean include **ESB International**, which is planning to invest €4m (US$6.3m) in a 1.2MW tidal project in Stranaford Lough, Northern Ireland. The project is expected to use **SeaGen** turbine technology.

Irish Sea

Also using SeaGen technology, developers **Marine Current Turbines** and **Npower Renewables** have formed a joint venture to develop a 10.5MW tidal stream project off the coast of Anglesey, North Wales. The developers expect the project will cost GB£30m-GB£35m (US$39m-US$68m). If all stages of project development are completed as planned, the tidal farm could be operational by 2012.

Pacific Ocean

The planned 320MW Naikun offshore wind farm, in British Columbia, Canada, took a step forward with an agreement with the Lax Kw'alaams First Nation providing a transmission route through the Lax Kw'alaams' traditional land.

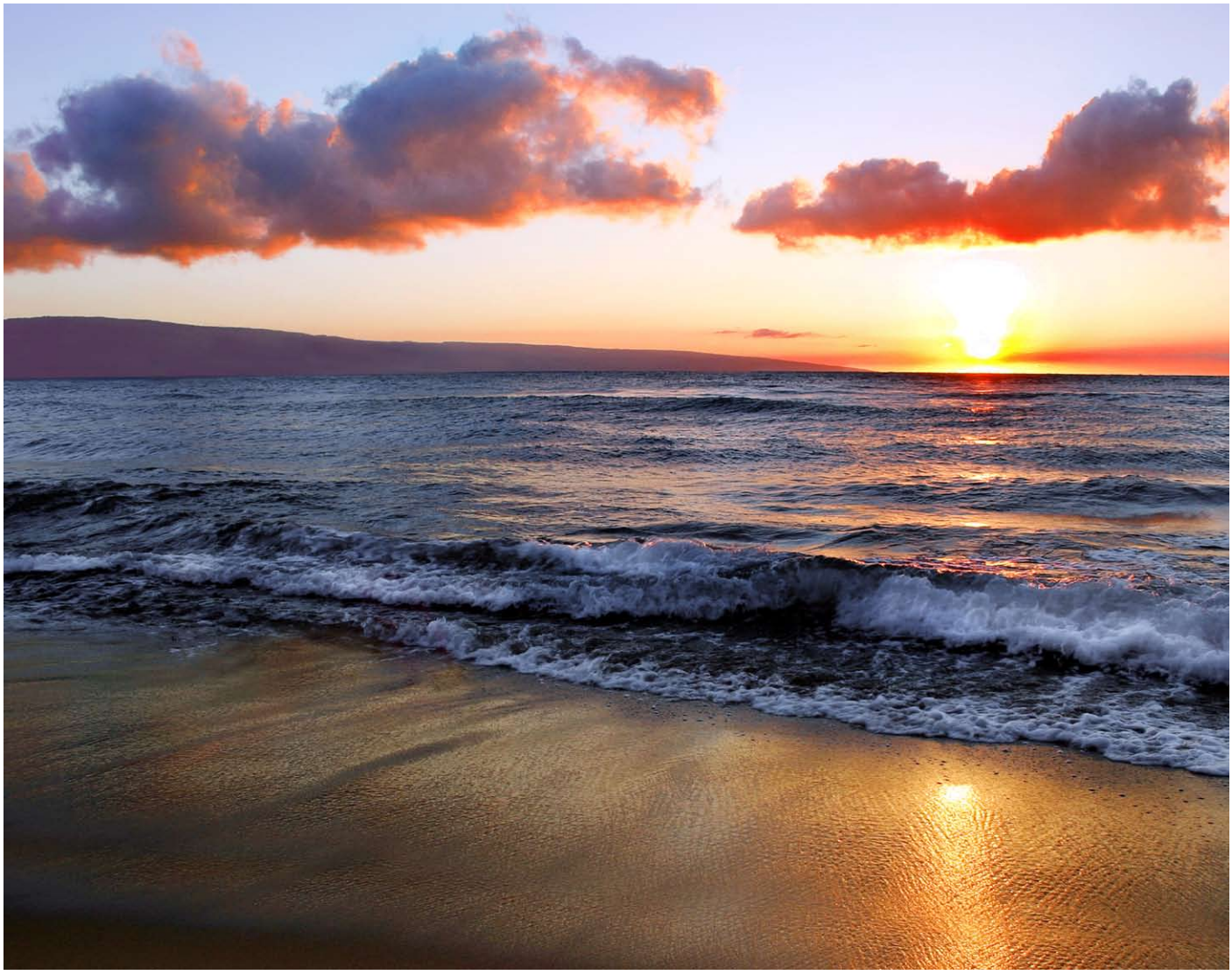
Further down the coast, in Californian waters, a preliminary permit has been granted to **Finavera Renewables** for a proposed 100MW wave farm. The preliminary permit allows Finavera to undertake oceanographic surveys and assess the impact of their **AquaBuOY** wave technology. Finavera already have an operating license for a pilot wave project in Washington State.

East China Sea

The **Shanghai Green Environmental Protection Energy Company** announced the imminent construction of their 100MW Donghai Bridge project, near Shanghai, in Chinese waters.

South China Sea

Also in Chinese waters, a 1.25GW offshore wind farm is being planned off the coast of Guangdong province, following agreements being signed by the city of Lufeng and Guangdong Baolihua New Energy Stock.



The Euromoney and Ernst & Young Global Renewable Energy Awards

Are you among the nominees for the **The Euromoney and Ernst & Young Global Renewable Energy Awards 2008**?

The awards were established to recognize the projects, companies and individuals who have made a significant contribution to the global renewable energy sector.

This will be the **5th anniversary** of the awards and the ceremony will take place at Madame Tussauds, one of London's favourite tourist attractions, with full visit to the galleries included

The awards program, dubbed the 'Green Oscars', takes place every year alongside the Renewable Energy Finance Forum (REFF) London and is the perfect platform to celebrate the achievements in the private sector that drive continued growth in the renewable energy industry. The gala dinner and awards ceremony is free to REFF London 2008 conference participants.

Companies are invited to nominate themselves in 2008, by completing the nomination form at www.euromoneyenergy.com/pdfs/nominationform.doc.

The award categories for 2008 are:

- IPO of the year
- M&A deal of the year
- Technology equity deal of the year
- Infrastructure equity deal of the year
- Senior debt deal of the year
- Entrepreneurial developer of the year
- Corporate developer of the year
- Emerging technology promoter of the year
- Most enterprising new market entrant of the year
- Legal advisor of the year
- Climate change investment program of the year
- Sustainable region/city of the year

Q1 and Q2 2008 combined 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 last year alone.

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.

You are invited to join the Ernst & Young webcast in August 2008 to hear our panelists discuss:

- Key movements in Renewable Energy Country Attractiveness Indices and the Biofuels Country Attractiveness Indices
- The impact of the credit crunch and oil price rise on the renewable energy sector
- A comparision of policy between the UK and Germany

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

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 email mtoy@uk.ey.com for further details.

To listen to last quarter's webcast go to http://webcast.ey.com/thoughtcenter/

Commentary – guidance notes

Long-term index

As stated on page 2, 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 country of the general regulatory infrastructure for renewable energy. On a weighted basis, the Index considers:

- Electricity market regulatory risk – 29%: markets that are fully deregulated score higher, as they have experienced the 'market shock' on underlying wholesale prices that this transition may exert. While this may not affect current projects, these effects are particularly important when considering Long-term investment prospects.
- Planning and grid connection issues – 42%: favorable planning environments (low failure rates and strong adherence to national targets) score highly. Grid connection scoring is based on the ease of obtaining a grid connection in a cost-effective manner. The score also takes account of the degree of grid saturation for intermittent technologies.
- Access to finance – 29%: 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 four indices providing resource-specific assessments for each country, namely:

- Onshore Wind Index
- Offshore Wind Index
- Solar Index

Biomass and other resources index

'Other' renewable energy resources include small hydro, landfill gas, wave, tidal and geothermal technologies. Energy from waste is not considered. Each of the Indices consider, on a weighted basis, the following:

1. Power offtake attractiveness – 19%: this includes the price received, the potential price variation and length of PPAs granted. Higher scores are also achievable if a government guarantees the power offtake rather than merchant offtakers.
2. Tax climate – 11%: favorable, high-scoring tax climates that incentivize renewable energy generation can exist in a variety of forms and/or structures. The most successful incentives and structures have been direct RE tax breaks or brown energy penalties, accelerated tax depreciation on RE assets and tax-efficient equity investment vehicles for individuals.
3. Grant/soft loan availability – 9%: grants can be available at local, regional, national and international levels; and may depend on the maturity of a technology as well as the geographical location of the generating capacity. Soft loans have historically been used in pioneering countries of RE technologies to kick-start the industry. High scores are achieved through an array of grants and soft loans.
4. Market growth potential – 18.5%: this considers current capacity compared to published targets. Higher scores are given if ambitious targets have been set and policy framework is in place to accelerate development. The realism of targets is taken into account as well as the seriousness with which they are being pursued (e.g., penalties in place for non-compliance).
5. Current installed base – 8%: high installed bases demonstrate that the country has an established infrastructure and supply chain in place, which will facilitate continued growth and, in particular, encourage the re-powering of older projects.
6. Resource quality – 19%: for example, wind speeds and solar intensity.
7. Project size – 15.5%: large projects provide economies of scale and a generally favorable planning environment, which facilitates project development financing.

Near-term wind index

As stated on page 2, the near-term wind index focuses on factors of most immediate concern to Near-term investment in wind energy. The scoring follows the same methodology as for the long-term wind index, but with a more focused set of parameters and a tailored weighting. Therefore, the Indices consider the following, on a weighted basis, for both onshore and offshore wind separately:

- Power offtake attractiveness – 27%
- Tax climate – 8%
- Resource quality – 14%
- Market growth potential (early 2008 to end 2009) – 40%
- Project size – 11%

In the Offshore Near-term wind index, countries with no projects estimated to reach construction in the next two years (early 2008 to end 2009) are excluded.

It should be noted that the market growth potential score is based on a view taken of a range of business analysts' forecasts and Ernst & Young's own market knowledge. There is significant variation between analysts' views on each market and within some markets the variation is greater than in others. The forecasts used are a market view only and the scores in no way guarantee that the forecasted capacity will be built.

While comparisons have been made between scores in the Long-term and Near-term Wind Indices, it should be emphasized that, due to the different weightings and parameters used, these cross-comparisons are of a narrative nature only and by no means indicate any quantitative valuation.

Company index

Glossary

CHP	Combined heat and power
CDM	Clean development mechanism
GC	Green certificate
ETS	Emission trading scheme
GW	GigaWatt (1,000MW)
IPO	Initial public offer
IRR	Internal rate of return
JI	Joint implementation
Long-term Indices	Refers to both all renewables index and long-term wind index
M&A	Mergers and acquisitions
MW	MegaWatt (1,000kW)
MWh	MegaWatt hour (1,000,000Wh)
PE	Private equity
PPA	Power purchase agreement
PTC	Production tax credit (US)
PV	Photovoltaic
RPS	Renewables portfolio standard (US)
TWh	TeraWatt hour

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