Financing Wind Beyond 2010

Survey Results

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This is an independent study commissioned by the British Wind Energy Association.
It DOES NOT REPRESENT the views of the BWEA, its members, or of those companies involved in the survey.

This report is produced as part of a consultation and discussion process with industry and government.

GUIDE TO THE STUDY, DISCLAIMER AND THANKS

This study was commissioned by the British Wind Energy Association. It must be emphasised that the views, opinions and analysis contained in this report are entirely those of the author. **This report does not represent the views of the British Wind Energy Association or its members.**

The main work of this study involved discussions with over 100 people during over 60 interviews conducted in July and August of 2003.

The study is issued in two parts:

- **Survey Results:** This attempts to capture the mood and sentiment in the industry as was observed during the study.
- **Possible Solutions:** Discusses possible changes to facilitate the financing of the wind business in the UK

The author would like to thank all those who participated in the study for giving so freely of their time and honestly of their views.

Interviews conducted in this survey were not recorded and no participant was asked to give a "Company position" or written response to our questions. Hence no list of those who participated is included in the study, and no reference is made to any specific statement made by individuals or companies except where they are in the public domain. Quotes without references should be considered to be things, which might have been said during the survey. This of course means I cannot provide credit for those whose ideas I put forward in the study – for that I apologise to those who proved more imaginative than me.

This report represents solely the views and analysis of the author and as such any errors or misrepresentations are entirely my responsibility.

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SYNOPSIS

The finance community is well informed and well prepared to finance the growth in the wind sector. Regulatory risk however is a very great concern.

Few who took part in this survey believed that the targets for renewable energy in the UK would be met by 2010. This caused concern amongst a number of people that unless the industry starts to realise tangible achievements based on the significant sums raised by the Renewables Obligation then the whole structure might be in jeopardy.

Onshore wind projects are constrained by institutional factors rather than by financing, however current build rates are very low and there is concern that these rates will only begin to climb as the Renewables Obligation enters its two years of greatest regulatory uncertainty in 2005/06.

Developments in the offshore sector are slow, and despite significant investments and innovations on the part of those companies involved, it again seems unlikely that we will see significant investments in this area until the future of the Renewables Obligation is clarified in 2005/06.

There is no support for radical reform of the system. The Renewables Obligation is considered the best system of incentives in Europe, and has broad support.

If change can be achieved within the existing framework, then that change should occur soon, and to the greatest extent possible the industry should be allowed a clear run at the 2010 target.

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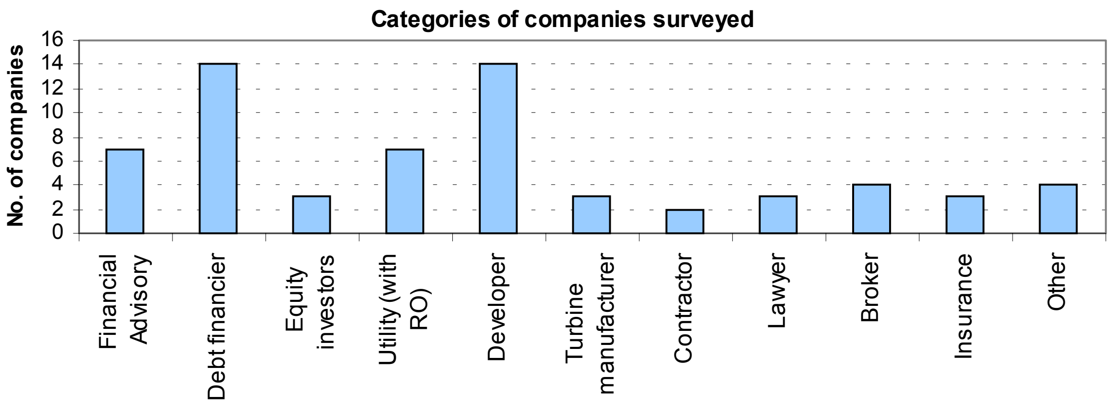
INTRODUCTION

During July and August 2003 64 interviews were conducted with key players in the wind industry and related sectors. Interviews were conducted either in person (45) or via conference call (19).

Interviews were conducted based on a pre-prepared and pre-issued questionnaire, but for the most part this served only as a basis for discussion.

The graph below shows the classification of the companies interviewed.



This report aims to capture the mood of the industry as it was observed during the interview process.

WIND AND THE FINANCIAL COMMUNITY

Activity and attention levels

"We are the largest bank in wind power financing"

Any thought that the financial markets don't understand the wind business in the UK should be immediately dispelled.

The survey showed that there is a large number of well informed and experienced financiers with a very great knowledge of the sector. There have been a number of (for wind at least) sizeable deals which have gone through the market since the inception of the Renewables Obligation, which given the risks inherent in any new scheme is a credit to those involved.

"We are looking very carefully at wind as a new growth area for us in the energy sector"

Innovation is occurring in the way wind projects are financed, and there is by no means a consensus on the future of wind financing (particularly offshore). The range of ideas being pursued for the financing of new projects can only be good for overall economic efficiency and the future of wind power.

Regulatory Risk and the RO

This innovation is tempered by a concern about regulatory risk. The key regulatory risk is the future remuneration regime for wind projects.

For projects with financing periods of 10 to 15 years the financial community is already looking to the nature of the market beyond 2010 and the numerous reviews and potential changes which might occur between now and then.

"Another significant change in the rules and we would take the UK off of our business plan"

The financial community is unanimous in the view that the RO system should NOT be radically overhauled. Such action now would shake confidence, and set the market for wind financing back 3 or 4 years. However, most believe that something needs to be done within the current framework if the 2010 target is to be met, and in particular if significant offshore wind projects are to be realised in this decade.

The City goes green

"The major banks are starting to appoint 'environmental tsars'"

A number of financiers commented on the trend towards banks trying to bolster their environmental offerings. The potential of EU emissions trading and the growth in the financing of renewables were mentioned as particular catalysts for this development.

Deal size

"We don't normally look at deals below £15m. For wind we will do some early ones of a smaller size to get experience"

To date the wind industry in the UK has not provided a size of financing deal, which would be economic for many of the major banks. With the growth of the industry this is now starting to change. This provides greater depth and competition in the financing sector.

There are banks, of course, which specialise in financing small projects.

Is power a dirty word in the City?

"Nearly a third of UK generating capacity … is in the hands of companies in financial difficulty"
-FT (Lex) 9th March, 2003

Yes it is, but most banks surveyed had made a case that renewables was different to the main power market and hence were prepared to fund new projects despite the write-downs they had suffered in the conventional power markets.

There is much concern about regulatory risk following those losses in the conventional market, and there is the general issue that to fund projects, which are supported by "subsidy" plays heavily on a lender's nerves.

REGULATORY RISKS IN THE RO

Before 2010/11

Almost all those interviewed expected the market to be short of renewable power for the rest of the decade and sometime beyond. Hence unchanged the market has perhaps 10 years of value left in it. In the intervening period companies have a set of relatively well-documented concerns.

10 years is not enough

"Particularly for the large offshore projects, we are talking about 15 year loans"

While some well-advanced onshore projects may require a ROC horizon of less than 10 years to provide the appropriate return, new projects and particularly offshore projects require significantly longer. Hence deal flow has the potential to begin to dry up, just as it gets started.

Reviews, reviews, reviews

The EU's report on the potential for a harmonised renewables system in 2005, coupled with the scheduled RO review in 2005/06 raise concerns that constant reviews might create a hiatus in project development and financing.

"We would prefer it, if there never was a review"

Some believe that projects not closed in 2004 will struggle through the system until there is clarity again in 2006/07.

The time of the next review of the RO (2005) is seen by many as the point at which the onshore market may start to show increased build rates. This makes this exactly the wrong time to introduce further political uncertainty.

Whilst resigned to the political nature of the industry, most of those surveyed would prefer never to see a review. If it were to come, many would prefer it early, but appreciate that the EU not the UK process determines the timetable.

This very study, of course, potentially makes this problem of regulatory risk worse.

Co-firing

"The 2005 review is set-up so that the government can ensure that the targets are met one way or another"

Any extension to the rules on co-firing has the potential to radically change the price of ROCs in the near term. Sentiment on this issue ranges from:

- cynicism: that the government will change the co-firing rules to make sure the 2010 target is met; to
- concern: that a system which provides a windfall to conventional generators and does little for true biomass will be discredited (systems with silly consequences make people nervous of regulatory risk); to
- confidence: that it is just teething problems which can be ironed out through technical reviews of the system.

In the final analysis financiers, particularly where they are issuing debt, don't adopt any state above cynicism to anything.

After 2010/11 – behind and beyond the RO

"We use a view on the market value of carbon abatement in our analyses beyond the end of the current RO"

In order to predict the amount and riskiness of project cash flows beyond a decade or so, companies have to take a view on the system beyond its current horizon. The following issues affect their views:

Emissions Trading

The introduction of EU Emissions Trading is thought by many to have a medium term effect on the power price, but no long-term effect on the price of the renewable premium. However the pace and timing of any convergence of renewable power support mechanisms and carbon trading does cause concern.

"Renewables are expensive carbon abatement"

Renewables are considered to represent an expensive form of carbon abatement, and this is a concern to financiers if the convergence of the various "climate change markets" occurs too quickly (that is convergence of the mechanisms, such that renewables might have to survive solely under a carbon trading scheme too soon).

EU Harmonisation

If renewables support systems are harmonised across Europe then companies have to take a view on the competitiveness of UK renewables against those in other countries. This is very difficult as the politics of any harmonisation is extremely difficult to predict.

The Consumer / Taxpayer

"There are no votes in wind power "

Ultimately the consumer / taxpayer pays for all power generation. Companies have to take a view on the value of renewable power to these constituencies going forward. Some look dimly at the traditional lack of environmental concerns amongst the UK population; others consider environmental concerns, and the willingness to pay for them, to be only heading in one direction[2].

"An ever escalating cost to the consumer is not credible "

There is a concern that the cost to the consumer will start to be significant by the end of the decade and that this could lead to a policy reaction against the RO.

Certainly this is one argument against the extension of the system to 2020 in its current form. A 20% target with RPI indexed buy-out price could start to represent a sufficiently large figure as to be viewed as unsustainable.

Political backing

"Critics accuse ministers of fudging key issues"
-FT 25th February, 2003

There is concern about the long-term political backing for the RO scheme. Few were emboldened by the recent Energy White Paper, and there is a growing concern that a change of government might cause a restructuring of the scheme. This would be a particular concern if the industry was to be significantly short of its targets and the cost to the consumer was rising.

Grandfathering

"Environmental policies have always been grandfathered. It is essential for confidence that that is maintained "

A key concern for financiers is whether any changes to the system in the future will preserve the integrity of deals done under the current system. Many had taken solace in the effective transition of NFFO contracts to the NETA regime. However, it is not at

[2] Upwards, of course.

all clear how contracts under the current RO scheme could be grandfathered should it be changed radically, say due to EU harmonisation.

The importance of grandfathering in a system of this sort cannot be over-emphasised. Financiers consistently commented that the schemes in other countries in Europe had relatively well understood paths to grandfathering of past rights should the systems be changed in the future. Few could see an easy route to preserving the value of their investments under the Renewables Obligation.

UK VERSUS THE WORLD

Many of those surveyed had experience in the renewables business overseas.

Regulatory competition

"Many in Europe are just waiting for the Renewables Obligation to fail "

There is no doubt that there is regulatory competition within the renewables sector at a EU level. There is a EU report on harmonisation in 2005, which could potentially result in harmonisation of the renewable support schemes in Europe by 2012.

There are generally considered to be three types of support scheme for renewables:

- Renewable Portfolio Schemes – such as the RO.
- Auction / tender models – such as the NFFO scheme
- Feed-in tariff – such as those in Germany, Denmark (previously) and Spain.

If measured by the amount of wind power installed, there is currently only one winner.

"NFFO was easy but we don't miss it at all, and at the end of the day projects just didn't get built "

However, despite this, most people in the survey considered the RO (and Renewable Portfolio Schemes in general) to be the preferred approach provided they could be made to deliver renewable power projects. The UK is in danger of being the market, which proves that the feed-in tariff is the only thing that works (NFFO is not seen as a success, and the jury is out on the RO).

Experience from other markets

Germany

"The impression of the need for perpetual subsidy does nothing for the industry"

Despite over 12GW installed, most people surveyed did not think that the German feed-in tariff system was a good idea. Many talk of over-building, inefficiency in the industry, and inappropriate positioning of wind farms. The impression of the need for perpetual subsidy created by the German system is seen as being bad for the wind industry in general.

"Local support for wind farms is very strong in Germany"

One positive in the German market is the degree to which the community support wind farms. This is attributed to a greater concern for green issues, and also to the tax breaks which are available to local investors in wind farms. This provides an incentive by which whole communities benefit from wind farms in their areas.

Spain

"We cannot finance in Spain, the rules can be changed every year, and you can't challenge it"

Nothing divides the banking community like its attitude to the Spanish market. To some a feed-in tariff, which can be changed annually by the Energy Minister is regulatory risk in the extreme, and hence they will not finance projects there.

Others consider the Minister to be a good sort, who would never "do the dirty" on the industry in the way a British Minister might.

"The Spanish Energy Minister has been totally consistent in his approach. There are never any unpleasant surprises"

The lesson from Spain is actually the amount of apparent regulatory risk, which a market can bear, if it achieves a virtuous cycle of development in the industry. Spanish utilities are supporters of wind; there is political backing; Spanish banks lend heavily to the industry; there is a domestic manufacturing industry, and hence those who look beyond the rules see a market, which is built on solid support from all sides.

The Spanish Energy Minister even managed a small reduction in the feed-in tariff this year with hardly a cross word said from the industrial or financial communities.

US

The US incentive scheme generally involves a tax credit known as the PTC. This tends to involve unpredictable two yearly cycles. Many of those surveyed commented that the stop-go nature of this system was not good for the market[3].

Markets for the future

"The UK is seen a major market for growth in the sector"

One important point from the survey is that most people see the UK as the major growth market for the wind industry in Europe. The US is still seen as the biggest market globally.

This means that any suggestion that the wind industry will lose interest in the UK if it proves to be a tough market is a relatively empty threat. Whilst in the past the German feed-in tariff might have attracted the industry's attention away from the vagaries of the NFFO system, this is unlikely to be the case going forward.

EXPLAINING LOW ONSHORE BUILD RATES

Outlook

"Renewables Obligation off to a sluggish start"
- Power in Europe, August, 2003

There is a significant and growing amount of onshore wind being put forward for consents and getting consents in the UK. In fact a number of people in the survey raised concerns about an overheating of this part of the system (over 0.5GW is currently consented).

However the build rate in 2003 is estimated to be around 100MW onshore. So, why is there a problem in converting this consenting activity into building activity?

One point that some have made is that compared to the historic build rate in the UK, the current rate is pretty good. However it is at least on order of magnitude below what is required to meet the targets for renewable generation over the next decade.

[3] This two-year cycle comes from the fact that the PTC is part of the general taxation legislation in the US and hence its reliability is only as good as the reliability of the US passing a budget.

Not Financing?

"Planning and grid still dominate the concerns onshore"

At current levels of prices reported in PPAs and the level of anticipated spot ROC prices over the coming few years it is difficult to argue that financing is constraining the onshore market.

At these prices loan terms can be as low as 7 to 10 years, which is within the horizon of the current RO.

"Even for the 7-10 years we need for onshore wind projects, we are struggling to get PPAs"

There may be an issue with the appetite of obligated suppliers to enter into PPAs with independent developers. Hence while financing level is not an issue onshore, depth of the PPA market may well be.

From project to portfolio

It is relatively clear to most people in the industry that recent changes such as the introduction of NETA and the RO (and the demise of the NFFO scheme) have made the wind business more of a portfolio business than it was before.

"It is harder for us to access capital under the RO scheme than it was under the NFFO scheme"

These changes have made it harder for an independent developer to finance and operate a wind farm.

Part of the current situation can therefore be attributed to the uncertainties created by these changes. Many developers are looking at the sale of projects (pre-construction) as an option rather than developing themselves. It will take time to determine how this change will shake out, and in the mean time there is often value in the option to wait.

"We are currently looking at the option of selling the consented project"

The market for developed, but not built, projects is still establishing itself and issues of price, positioning and transaction costs may be causing delays in building consented projects.

Where projects are sold, the new owner often spends time re-assessing the best way to develop the site.

"Sterilised" NFFO / SRO sites

An amount of sites contracted under the NFFO scheme are now considered by their owners to be sub-economic. This is a difficult issue and outside the scope of this report, but it provides a reason for some of the low conversion rate from planning to building of wind farms.

Planning and Grid Issues

"Offers of grid connections are only valid for 30 days. This makes planning the project impossible"

Issues of planning and grid continue to come up in the survey. It may just be the time taken to take projects through the process, which explains the current low build rate.

The implications of these planning and grid delays are financial distress for developers and related companies. The uncertainty of the planning and grid connection process make hedging the future cash flows of a project almost impossible, and can cause financial distress and its associated deadweight costs where a company relies on those future cash flows to fund its business.

"There appears to be no limit or constraint on the costs which can be imposed on a project by objectors"

The grid in some parts of the country has its own planning issues, which have the effect of constraining developments.

Expansion Options

"We are looking at the possibility of larger turbines, and of expanding the site"

The advance of technology makes it very tempting for developers to attempt to upgrade the consent to produce more electricity with bigger turbines. This is a commercial choice, but might partly explain the low build rate.

The Markets

The insurance, exchange rate, brown electricity and credit markets have all moved against developers in recent times. This may have caused the economics of some projects to change.

Again these are commercial issues not regulatory ones.

Conclusions

Institutional issues remain the main barriers to converting consented wind farms into producing wind farms onshore.

OFFSHORE WIND VERSUS ONSHORE WIND

Earned the right to grow?

"The UK has failed to exploit the best onshore wind resource in Europe. Why should it succeed offshore?"

Lesson one of corporate finance is that companies must "earn the right to grow". Some in the survey wondered if the UK wind industry had yet developed to the extent that a £6bn offshore wind programme was justified.

On the one side it can be argued that onshore development is difficult in this densely populated land and hence the move offshore removes many of the barriers, which have held back the development of the UK business onshore.

"Moving offshore gets us away from so many of the difficult problems which we face onshore"

On the other side are those that argue that having singularly failed to fully exploit the best onshore wind resource in Europe, the idea that taking on a more difficult and challenging task offshore will be achievable, is hard to believe.

In particular there is a cynicism from many of those surveyed that the British ability to devise interest groups to block projects will not go away once the industry moves to the sea.

There is a split in the survey between these viewpoints, but certainly there would be significantly more confidence in the overall offshore project if the onshore wind business started to deliver significant advances.

"Someone should assess the costs and benefits of 'Rewiring Britain' compared to just building a grid offshore and harnessing the marine resource"

Does one kill the other? Costs and benefits

On the other hand why bother onshore where planning is difficult and wind farms are small, if we can build massive wind farms offshore without the same difficulties?

In particular some people questioned whether the costs of the development of the transmission and distribution networks onshore to facilitate new renewables was justified if an offshore transmission network could deliver so much more power more cost effectively.

For which was the RO intended?

“The RO was designed to promote offshore wind”

The RO sends confusing signals as to the technology anticipated for fulfilling the targets for renewables.

With the current level of buy-out price, if the incentive could be preserved in the long term, offshore wind is viable. Onshore wind is certainly viable and has the potential to generate significant returns for those who get projects to completion.

These high returns have the potential to cause a regulatory reaction, and the potential for high returns does not always make for the smoother developments of projects.

The very short-term price signals, which the RO provides for investors may even make it harder for companies to invest.

OFFSHORE WIND

Outlook

“It is hard to see more than one project being built in 2004”

Without change, the outlook for offshore wind is poor. The financing horizons for Round One projects go way beyond the horizon provided by the current RO scheme, and Round Two projects will have barely been installed before the current RO scheme ceases to be an effective incentive.

“A year ago we had the prospect of work on 5 or 6 Round One projects in the immediate future. Now this is down to one”

Moving to the sea has not reduced the claims of interest groups and this is causing deadweight costs for those attempting to develop projects.

Contractors are reporting emptying order books for offshore work and are in danger of suffering due to investments made based on the potential for Round One work.

Financing

A Round One project constructed before the expiry of its option to lease in 2006, will require confidence in its revenue stream long into the next decade. Such contracts barely exist, and certainly do not exist in the depth required to make a success of the round as a whole.

In order to realise technological and cost benefits, Round Two relies on a successful Round One.

Round Two projects require price certainty beyond 2020.

Technology, Operations and Safety

"Construction, in offshore terms, is straight forward. Maintenance procedures are more of an issue"

Technology risk is often cited as being the major issue in the development of offshore wind. Certainly there is great temptation to move to larger turbines quickly and sponsors who wish to take risk on new technology in order to get higher returns will undoubtedly have to find more equity for their projects. This however is a commercial decision and the risks and rewards of technological development will be allocated in the commercial market.

"We must get the safety aspects of maintenance right"

It is the operational aspects of offshore wind farms, which are the most uncertain. Methods of access, the times when access can be gained, and other aspects of maintenance procedures are still debated.

"Helicopters will not be used to service wind farms offshore in the UK"

Safety is an issue raised in a number of interviews in the survey. The industry is still developing solutions to the problem of safe and secure maintenance at large scale. However, this again is an issue on which there is much innovation and is an issue for the private sector and the relevant safety authorities.

Ancillary Industries

Some of the best insights into the state of the offshore wind business can be gained from speaking to contractors who install and maintain the wind farms.

"We invested in kit for this industry in good faith that the backing would be there for it"

Those questioned in the survey reported emptying order books, with Round One projects becoming increasingly uncertain. Many of these companies invested in new equipment to service the offshore wind industry. There is the risk of losses in these industries if the stream of offshore installation work is interrupted.

Ironically if confidence returns after the 2005/06 review and the lease terms for Round One are extended such that they can be built, then there is also the possibility of a lack of the necessary capacity to service the industry.

There is also the risk that the industry will bear the costs of the retooling of the ancillary industries if there is insufficient work for the coming years.

"If there is a rush towards the end of the decade there is a risk of a vessel shortage"

It is important to note that it is very much the development of the ancillary industries required for the offshore wind business which provides the upside for "UK plc" in the whole offshore wind undertaking. The jobs and local regeneration, which these industries create is one of the justifications for the special remuneration schemes put in place for renewable energy.

IS THE RENEWABLES OBLIGATION GOOD FOR WIND?

A peculiar question maybe, however it was often discussed in the survey. The Renewables Obligation looks too good on the surface, without many of the subtler issues having been addressed.

"People are already starting to ask where the £280m went to last year"

Never has the UK renewables industry had so much money available, and hence never has there been so little excuse for failure.

As discussed early, the onshore wind business still appears constrained by institutional factors, and is suffering growing pains. The industry has failed to deliver significant new investments in wind farms in the first year of the Renewables Obligation. The £280m or so collected from consumers in the first period had the potential to almost double the installed capacity of the UK wind industry, but it did not.

"The industry is on probation"

Some growing pains are excusable but many have raised the real issue that the industry cannot still be providing excuses for low build rates during the 2005/06 review, particularly as the cost to the consumer starts to head towards the £1bn (in today's money) per year level by the end of the decade.