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The legal framework for offshore wind-farms: a critical analysis of the consents process*

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Abstract

The impact of the legal framework for the consents process on the rate of development of offshore wind farms in England, and the achievement of targets for renewable electricity generation have been reviewed. From the

* Thanks to the representatives of the following organisations for their contributions to the survey: Associated British Ports (ABP); British Wind Energy Association (BWEA); Civil Aviation Authority (CAA); Consense; Joint Nature Conservation Committee (JNCC); National Federation of Fishermen's Organisations (NFFO); Natural England; North East Lincolnshire Council; Marine and Fisheries Agency (MFA); Royal Haskoning; RPS Group plc; SGS Wind Energy Services; Terence O'Rourke Ltd.; The Crown Estate. Thanks also to those organisations that chose to remain anonymous.

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literature and consulted stakeholders it was found that the complexity of the current consents process has adversely affected the rate of development and the achievement of renewable energy targets. Future projects will be subject to a different legal framework for consents, under the Planning Act 2008 and the Marine and Coastal Access Bill. From a comparison of process diagrams for the current and future consents processes, it is concluded that the future process should be an improvement. However, uncertainties remain about the detailed procedures and operation of the future consenting authorities. The capacity and capability of key stakeholders to meet their obligations have implications for the time frame for the processes of applying for, and the granting of, consents. Furthermore improved engagement from developers and clarity about the role of local authorities are essential if progress is to be made. The need for a holistic and strategic view of the industry, including associated development of the supply chain and the transmission grid, is also highlighted.

Key words: offshore; wind; consents;

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1. Introduction

The United Kingdom (UK) is subject to a legally binding European target to obtain 15% of its energy requirements (heat, electricity and transport) from renewable technologies by 2020 (BWEA, 2008a; DECC, 2009c). Furthermore the Climate Change Act (HM Parliament, 2008a) imposes a legally binding target, to reduce carbon dioxide emissions to 20% of 1990 levels by 2050. The generation of electricity from renewable sources is being

seen as fundamental to achieving these targets (DECC, 2009c; Venables, 2008).

Climate change is one of three key drivers for renewable electricity generation; the others are security of supply and affordability (Fig. 1.) (DTI, 2007; Sellick, 2008). Additional pressure comes from the age of the existing fossil and nuclear electricity generating fleet, which needs to be replaced within 50 years (Clarke, 8th June 2009). Furthermore the UK's energy needs are forecast to grow, requiring an additional 30-35GW of new capacity by 2030 (DTI, 2007).

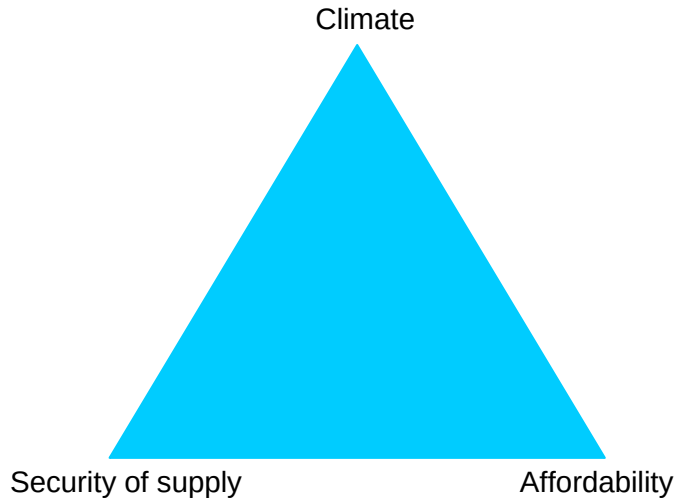

Fig. 1. The drivers for renewal energy (adapted from (DTI, 2007; Sellick, 2008))

The UK has some of the best offshore wind resources in the world (Sustainable Development Commission, 2005), and offshore wind farms are being heralded as major contributors to the UK's electricity generation mix after 2010 (BWEA, 2008a; DECC, 24/6/09). Wind turbine technology is a proven technology and has been applied offshore with some success. Following two rounds of licensing in 2000 and 2003, the UK has the largest

fleet of operational wind farms in the world (BVG Associates, 2009), with a generating capacity of almost 600MW (BWEA, 2008b).

Round 1 and 2 development, however, has not proceeded at the rate initially envisaged; this required some 4.5-5.5GW of operating capacity by 2010 (Burke, 2004; DTI, 2002). If the UK is to achieve its 2020 target, a step change in the rate of development is needed. The challenges facing development are complex, but fall broadly into five categories: project economics, technical constraints, supply chain capacity, social effects, namely to amenity and aesthetics, and environmental impacts (Sustainable Development Commission, 2005; Haggett, 2008). The legal framework for offshore wind farm development consent must address all these aspects.

The third round of offshore wind farm leasing was announced by The Crown Estate on 4th June 2008, with a target of a further 25GW of installed generating capacity by 2020 (The Crown Estate, 2008b). On the 24th June 2009, following consultation on the Strategic Environmental Assessment (SEA) for UK Offshore Energy (DECC, 2009b) the UK government gave the go ahead to proceed with this third round in England and Wales (DECC, 24/6/09; Lord Hunt of Kings Heath OBE, Jun 2009), with a view to granting leases by the end of 2009 (The Crown Estate, 2009). These ambitious plans represent a £100bn challenge and opportunity (Clarke, 8th June 2009) for the UK economy, and a potential 70,000 jobs in a new industry (DECC, 24/6/09; Carbon Trust, 2008).

Round 3 wind farms will be subject to a different consenting process from the earlier rounds. The Planning Act 2008 (HM Parliament, 2008b) and the

Marine and Coastal Access Bill (DEFRA, 2008b) will provide a new legal framework for the consents process.

This paper will present the findings of a research project looking at the development of the offshore wind industry in England. The research focus was the legal framework for consents for offshore wind farms, and its implications for the rate of development, to date and into the future. The aim was to answer the question:

> *Is the legal framework for consents helping or hindering offshore wind farm development, and achievement of the targets for renewable energy generation?*

The approach adopted was to:

- explore the experience to date of the licensing and consenting process for offshore wind farms in Rounds 1 and 2;
- gain an understanding of and explain the future consents process for Round 3;
- identify, categorise and consult stakeholders in the process, and analyse their perceptions of the consents process;
- assess whether the new process will successfully address shortfalls in the earlier process.

Due to differing legal regimes in the devolved assemblies in the UK, the project focussed on offshore wind farm development in England.

The research methodology is described in the next section. Our findings are set out in the following section, which presents the time frame for offshore wind projects and the results of stakeholder analysis for the consents process. An analysis of the legal framework for future consents, including process diagrams for the current and future consenting processes, follows, and then the results of a survey of stakeholders' perceptions of the consents process are described. The findings are discussed in the subsequent section before conclusions are drawn and further work recommended.

2. Methodology

Internet research sought to construct a time frame for the consents process for Round 1 and 2 projects including forecast completion date for incomplete projects. Primary data sources consulted included the websites for wind farm developers and news archives. Whilst this approach the gave increased understanding of the extent of offshore wind farm development in England and Wales, due to time limitations and lack of data in the public domain, it was only possible to construct a typical timeline, rather than detailed time lines for each project.

Round 3 wind farm projects will be subject to a different legal regime to rounds 1 and 2. To gain a full understanding of the new consents regime, an analysis of the Planning Act 2008, and the Marine and Coastal Access Bill was undertaken. Drawing on the Government's own guidance that regulations should be written so that they are easily understood, implemented and enforced; that regulators should be accountable for the

efficiency and effectiveness of their activities; and that regulatory activity should allow, or even encourage, economic development (Hampton, 2005), This analysis sought to identify whether the new legal framework addresses the shortfalls in the previous consenting process identified by stakeholders in interview.

Stakeholder organisations were identified through the literature review and internet research. These were recorded in a stakeholder analysis tool developed for the UK Rural Economy and Land Use (RELU) programme (Graves and Morris, 2007). Using an "*analytical categorisation*" approach (Reed et al., 2009), stakeholders were ranked by consideration of the question:

> *"Which individuals and organisations (i.e. stakeholders) have "Interest in" and "Influence over" over the leasing and consents process for offshore wind farms?"*

Rankings were made in accordance with the criteria defined by (Graves and Morris, 2009). Through this process it was possible to identify the "*key players*" and "*context setters*" in the consents process in addition to the "*subjects*" and "*crowd*" (Reed et al., 2009). This approach facilitated the identification of organisations for subsequent interview, with the intention that each of these groups be represented.

To gain an understanding of perceptions of the consents process across the industry, a series of telephone interviews was conducted. The questionnaire comprised three sections. The first section comprised closed and open

questions to confirm the respondent organisation's interest in and influence over the consents process, and hence their position on the stakeholder analysis plot. The second section comprised open questions to investigate the respondent organisation's experience of the consents process during round 1 and 2. The open questions gave respondents freedom to answer in their own words and flexibility to speak about issues of specific concern to their organisation, which may not be relevant to all stakeholders (Gill and Johnson, 2002). Further open questions in the third section sought to understand the perceptions of the new process for round 3, both in terms of improvements and limitations.

Interviews were conducted by telephone rather than face to face, to reduce travel costs and time demand (Robson, 2002). Organisations were selected to be representative of a cross section of stakeholders at various interest and influence levels, from each of the groups of "key players, context setters, subjects and crowd" (Reed et al., 2009; Graves and Morris, 2009). An initial email introduced the survey and expectations, and requested to arrange a telephone interview with the relevant representative of the stakeholder organisation. Due to potential commercial sensitivities, the initial email included assurance that respondents might remain anonymous in the final thesis documents (Gill and Johnson, 2002).

Telephone interviews were conducted with organisations responding positively to the request, and followed the questionnaire. Where interesting themes were identified, these were explored more deeply using structured interview techniques (Robson, 2002). Whilst telephone interviews allowed

data to be collected from a range of geographically dispersed stakeholders, at relatively low cost, the disadvantages of this method of data collection are that it is more difficult to build rapport, and there may be problems with interpretation when compared to face to face interviews (Robson, 2002).

Data collection took place from late June to mid August 2009. Following the go-ahead to Round 3 on 24th June, this was a busy time in the offshore wind industry, as well as being a holiday period. This may account for some of the difficulties experienced in arranging telephone interviews with stakeholder organisations. As a back-up to telephone interviews, an online version of the questionnaire was developed. This was offered as an alternative to telephone interviews towards the end of the data collection period. The online questionnaire provided a means to obtain data from a broader range of stakeholders; however this data was more limited than that provided from telephone interviews, due to the lack of personal interaction and involvement (Robson, 2002).

The bulk of the data collected was qualitative data, which was subject to analysis by the following steps (Robson, 2002; Miles and Huberman, 1994):

- transcribing of interview;
- summarising of contact;
- coding interview responses;
- analysis of responses.

Follow up emails were sent to a selection of stakeholders to validate theories developed from the survey findings.

3. Findings

Time frame for offshore wind farm development

Internet research provided data to compile the projected growth in offshore wind generating capacity from rounds 1 and 2 wind farms, against Government targets (Fig. 2.);

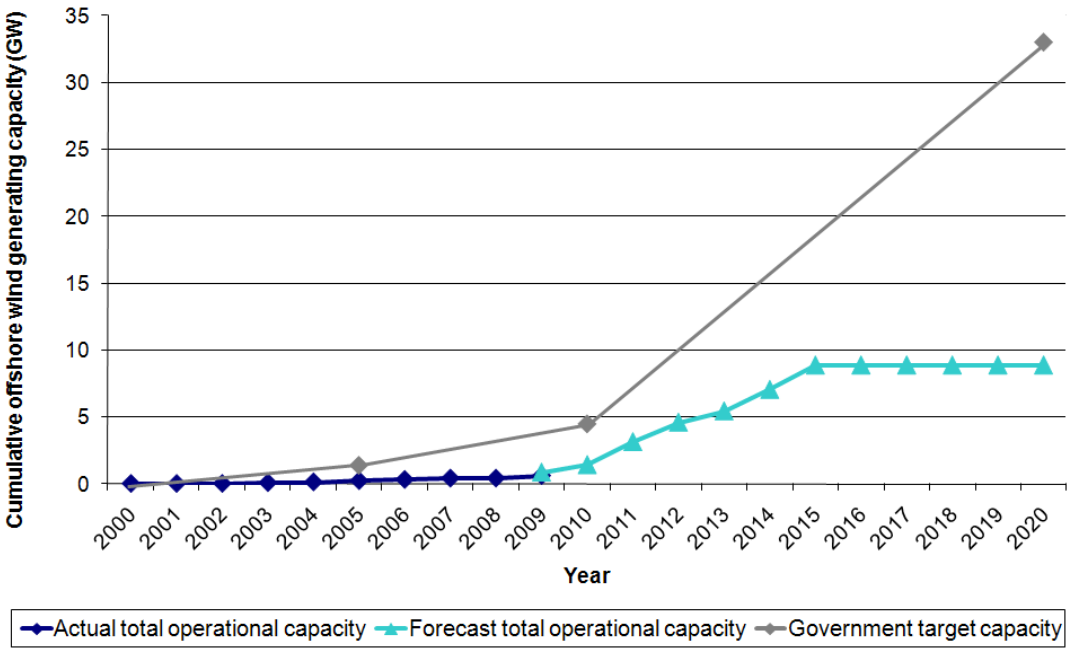

Fig. 2. Projected growth of offshore wind energy capacity of the UK from Round 1 and 2 projects (as envisaged at August 2009). Compiled from project completion dates established through internet research.

This confirms the expectations of the industry (BWEA and Garrad Hassan, 2009b). The rate of offshore wind farm construction will increase significantly over the next five years, with the final capacity from Round 2 coming on line by 2015. The total capacity at this time is forecast to be of the order of 8GW.

Using the same data, a summary time line for Round 2 wind farms has been compiled (Fig. 3.).

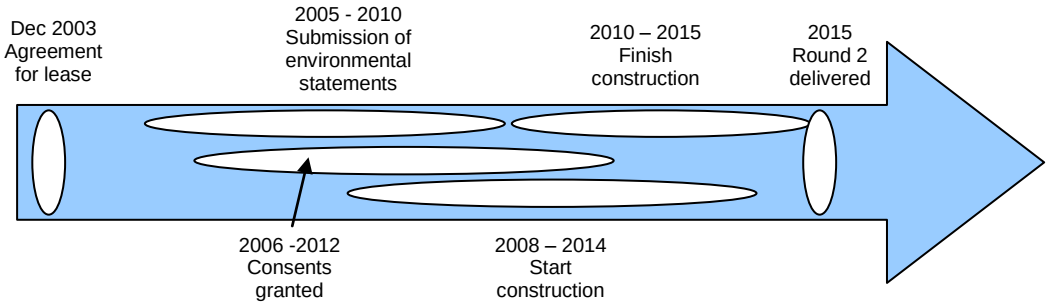

Fig. 3. Summary of timeline for Round 2 offshore wind projects

Our observations from the timeline for Round 2 projects are:

- it took approximately two years to submit the earliest consent applications;
- consent applications and environmental statements (ES) are still to be submitted for a small number of projects, with the last forecast to be submitted in 2010;
- the earliest consent was granted in 2006, and it has taken around two years to grant consent; on this basis, consent for the final wind farm may not be granted until 2012;
- construction starts approximately two years after gaining consent, and construction may take a further two years to complete.

By comparison Round 1 wind farms, considered as demonstration projects, experienced a faster consenting process and much shorter overall project duration (BWEA, 2008a).

Analysis of the legal framework for the consents process

The consents process for Round 1 and 2 offshore wind farms has been described in detail by Dower et al., 2002; Gray et al., 2005; Pettersson, 2008; Scott, 2006; Trinick, 2006 and others. There are two possible consenting routes: section 36 of the Electricity Act (HM Parliament, 1989) or section 3 of the Transport and Works Act (HM Parliament, 1992). The majority of Round 1 and 2 consent applications have been made under the section 36 route, since the amendment of the Electricity Act, by the Energy Act (HM Parliament, 2004), to allow for the creation of exclusion zones around offshore wind farm installations.

A process diagram of the section 36 consents process has been derived and is presented in Fig. 4.This clearly shows the complexity of the current process. Offshore wind farms require some six separate consents, depending on the extent of the development, which are considered by four different consenting bodies. There is potential that the different consenting bodies will reach different decisions on whether to grant consent, and the timescales are inconsistent (DEFRA, 2008a). Although there is an intention to bring the consideration of consents for offshore works together at a national government level (Pettersson, 2008), the onshore works fall within the jurisdiction of local planning authorities. This can result in delays to

projects, when local authorities decline planning permission, which may then become subject to public enquiry (Jay, 2008).

Round 3 projects will be subject to a different consenting regime to their predecessors. The Planning Act (HM Parliament, 2008b) and the Marine and Coastal Access Bill (DEFRA, 2008b), currently under consideration by Parliament, provide a new legislative framework for the consents process. The generating capacity of the wind farm determines which legislation is applicable to a given consent application. Developments with a capacity greater than 100MW will be subject to consideration and decision by the Infrastructure Planning Commission under the Planning Act 2008, whilst smaller projects will be determined by the Marine Management Organisation under the Marine and Coastal Access Bill. The introduction of different consenting regimes, with different decision making bodies, for developments of different sizes decreases consistency, integrity and uniformity, and breaches the best practice requirements for permitting regimes as set out by (DEFRA, 2009).

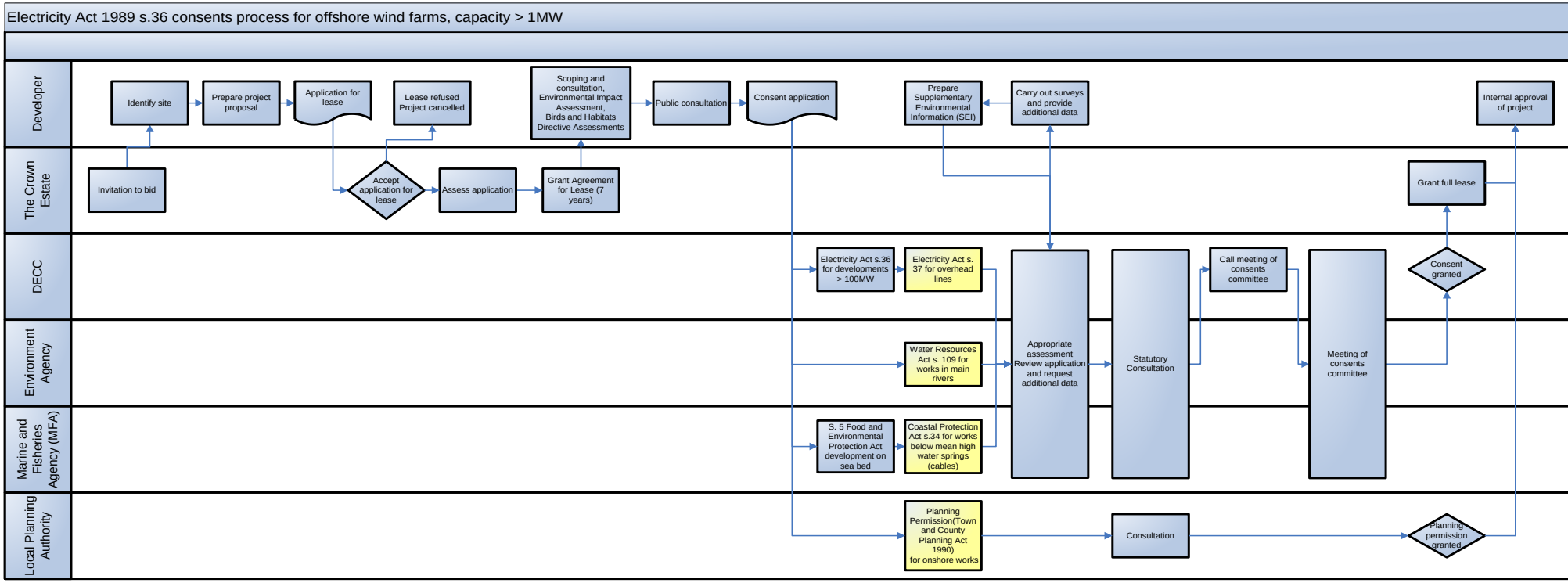

Fig. 4. Section 36 consents process for Round 1 and 2 offshore wind farms

The Planning Act 2008

The Planning Act (HM Parliament, 2008b) intends to provide a more efficient, accessible and transparent planning system for significant infrastructure projects (DCLG, 2009). The Act seeks to improve the consenting process by reducing the number of consents required and elevating planning decision-making from local level to national level, and hence reduce time and costs associated with obtaining development consent (Pitt, 2009). Under section 15(3) of the new Planning Act, large offshore wind farms, with capacity greater than 100MW, will be considered Nationally Significant Infrastructure Projects (NSIP). The majority of Round 3 projects will have capacity greater than 100MW (Wilson and Triggs, 2008), so will require development consent under this Act. This cut-off figure of 100MW appears somewhat arbitrary; with current technology this could be achieved with as few as 30 turbines.

Part 1 of the Act establishes a new body, the Infrastructure Planning Commission (IPC), with responsibility for making planning decisions for NSIP. The IPC will be independent of government and able to make *"transparent, expert, accountable and ethical decisions"* (Pitt, 2009). The IPC will be guided by National Policy Statements (NPS) (HM Parliament, 2008b) part 2), which set the policy framework for planning decisions in specified fields of development, namely: energy, transport, water, waste water and waste (section 14(6)). NPSs will be prepared by the Secretary

of State with responsibility for the field of development, and must take into consideration the requirement to achieve sustainable development.

In defining the NPS, there is a duty on the Secretary of State to carry out appropriate consultation and publicity (section 7). In defining the consultation requirements, the Secretary of State must consult with local authorities affected by the NPS (section 8). With respect to offshore wind farm development, however, it is unclear which local authorities will be consulted. The Act refers to local authorities where development is to be made, and those neighbouring them, however local authority jurisdiction does not extend offshore (Jay, 2008). There is potential that all local authorities along the coast could be affected by offshore wind farm developments, which represents a vast constituency for consultation in preparing the NPS. Local authorities representing ports or industrial areas are liable to be supportive of offshore wind where they benefit the local economy. By contrast, those in areas dependent on tourism may be concerned about negative effects on the local economy. These conflicts will need to be managed within a context of achieving sustainable development, as defined in section 10 of the Act, namely the mitigation of climate change and the achievement of good design. The need to mitigate climate change implies a predisposition to decisions in favour of offshore wind.

A process diagram of the future consents process for offshore wind farms has been derived (Fig. 5). The significant differences compared to the process for Rounds 1 and 2 are:

- zonal development agreements (ZDA) between The Crown Estate and developers, with the Crown Estate acting in partnership with developers in obtaining development consent (The Crown Estate, 2008a);
- formal acceptance of the consent application by the IPC only after completion of all statutory consultations and provision of all required documents (part 5 chapter 2);
- development consent replaces requirement to obtain consents under s.36 and s.37 of the Electricity Act 1989, and planning permission (section 33 (1a, h));
- defined timescales of 6 months for examination of the application (section 98) and 3 months for decision on the application (section 107).

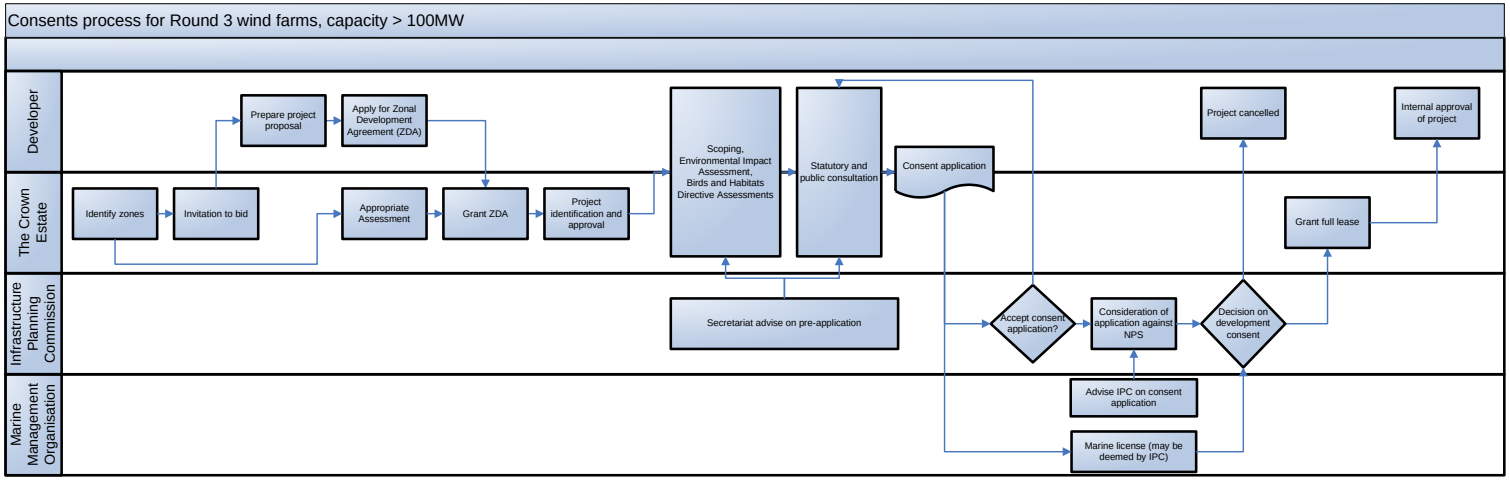

Fig. 5. Proposed process for new consents, as it is anticipated will apply to Round 3 offshore wind farms (capacity >100 MW)

From a comparison of Figs 4 and 5, it appears that the 2008 Planning Act does streamline the consents process. The process seems easier for stakeholders to understand, and to be integrated; it is more linear with fewer stages and fewer actors. There are, however, a number of concerns about its detailed application, particularly with respect to the time frames for the various stages of the process.

The emphasis is on the developer, in partnership with The Crown Estate, to complete the pre-application process including full consultation and environmental assessment, before the application for development will be accepted for consideration by the IPC. Section 42 imposes a duty to consult local authorities about proposed developments, and developers are also required to consult with local authorities with respect to how they plan to consult local communities (section 47). There is no definition of consultation (UKELA, 2009), which may lead to different approaches by different developers, and subsequently challenges to the process. It is to be hoped that the involvement of the Crown Estate will provide some consistency of approach.

As with consultation for the NPS, the extent of involvement of local authorities in the pre-application phase is unclear. Again the Act refers to local authorities where development is to be made, and those neighbouring them. The same conflicts with regards to industrial and tourist economies apply. Furthermore, the visual impact of the large wind farms planned for Round 3 may affect a number of different local

authorities along a coastline, presenting potential for considerable local political conflict, and challenge to the process. The visual impact of offshore wind farms on coastal communities is a complicated issue and widely discussed in the literature (Haggett, 2008; Jay, 2008; Ladenburg and Dubgaard, 2007; Ladenburg, 2008; Ladenburg and Dubgaard, 2009; Ladenburg, 2009b; Ladenburg, 2009a; Santora et al., 2004)

Timescales for publicising and consulting on the development proposal are also unclear (section 48). Section 45 specifies a minimum time frame for consultation with local authorities of 28 days, but no maximum time frame. Section 47 similarly specifies 28 days consultation with local authorities on how they intend to consult local people, but is silent on the time frame for public consultation. Furthermore section 48 is silent on the time frame for publicity. This opens a further possibility for legal challenge to the process.

Whilst there is an objective for the IPC to decide development consent applications within a 9 month time frame (sections 98 and 107), there is substantial flexibility to extend this. Section 55 allows the IPC 28 days to decide whether to accept an application. Thereafter, section 88 allows for an initial assessment meeting, with no real time limitations, which sets the start date for the 6 month examination phase. There is potential for this meeting to extend over more than one day, in which case it is the last day that sets the start date. Both consideration and decision phases may be extended by the appropriate authority under sections 98(4) and 107(3)

respectively. Chapters 6 and 7 introduce further uncertainty into the time frames for the consents process, by allowing for suspension of the process and intervention by the Secretary of State. These provisions reduce the potential for the IPC to be accountable for ensuring that its activities are effective and efficient, as required by the government's own guidance on better regulation (Hampton, 2005).

In parallel to the application for consent to the IPC, the developer may also be required to apply to the MMO for a Marine Bill License for wind farms of capacity greater than 100MW, although this may be deemed under the Planning Act development consent. The Marine Bill will be considered further in the following section.

The Marine and Coastal Access Bill

Consent applications for Round 3 offshore wind farms with capacity less than 100MW will be subject to the provisions of the Marine and Coastal Access Bill (DEFRA, 2008b). The Bill introduces similar reforms to marine planning as the new Planning Act does to land based planning (Wilson and Triggs, 2008). It seeks to address the increasing anthropogenic demands on marine resources, including navigation, oil and gas, dredging for aggregates and fisheries, as well as offshore renewable energy and Marine Conservation Zones.

Part 1, Chapter 1 of the Bill proposes the establishment of a new organisation, the Marine Management Organisation (MMO), with

responsibility for managing the marine environment around England. The MMO would also be responsible for the entire UK offshore area, for those functions not devolved to the National Assemblies. These responsibilities will include research, regulation, planning, harbour construction and alteration consents, and Marine Act licensing. In creating this new body, the Bill goes against the recommendation of the Hampton Review that activities be undertaken by existing organisations where possible (Hampton, 2005).

Part 4 of the bill seeks to simplify the license regime by consolidating two of the six consents currently required, those under Food and Environment Protection Act (FEPA) section 5 (HM Parliament, 1985) and Coast Protection Act (CPA) section 34 (HM Parliament, 1949), into one Marine Act license. For offshore renewable energy installations, Part 1 Chapter 2 of the Bill transfers Electricity Act section 36 licensing to the MMO so it can grant all necessary consents for small offshore energy projects (less than100MW). The transfer of Electricity Act consenting to a body with no direct responsibility for electricity generation appears flawed, even if only for small scale projects. There appears to be a conflict of interest between the MMO's role in managing the marine environment overall and this involvement in consenting.

One of the significant changes to be brought in with the bill will be the introduction of marine planning (part 3). Long term objectives will be outlined in a Marine Policy Statement (MPS), on which the MMO will base

its decisions, much as the IPC will base its decisions on NPS. The MPS will provide a framework for regional marine plans (section 49), which will contain the policies for sustainable development within the area to which they apply. The MPS will consider all aspects of the marine environment and its use, and will need to be consistent with the NPS.

It is intended, that the IPC and MMO will work closely on all offshore renewable energy projects (DEFRA, 2008a). Under section 23 of the Bill the MMO is made a statutory consultee for all IPC development consents and the MMO will be responsible for enforcement of development consents approved by the IPC. This implies a significant role for the MMO, which will need to be structured to support this.

Stakeholder Analysis

Forty different organisations or groupings of organisations, having a stake in the offshore wind farm consents process, were identified from the review of the literature and internet research. These were ranked for interest in and influence over the process. The results of this initial ranking are shown in Fig. 6, which divides the stakeholders into the different stakeholder groups: key players, context setters, subjects and crowd. Stakeholders are further categorised by the nature of their activity: government, industry, NGO, local interest and other user.

Key players are the major actors in the offshore wind farm consenting hence determining the success of the process (Graves and Morris, 2009).

The key players were identified to be regulators or consenting authorities (government), developers (industry) and statutory environmental consultees (NGOs).

Context setters have a low level of interest on offshore wind farm development, but represent a significant risk to the process where they are in disagreement with the objective, as they have high level of influence (Reed et al., 2009). They include aviation interests (other users), other government bodies, and the transmission and distribution network operator (industry).

Subjects have a high level of interest in the consents process, but have little influence over it (Reed et al., 2009; Graves and Morris, 2009). They may be either supportive or unsupportive to the process. Supporters include consultants to developers for the consents process and trade

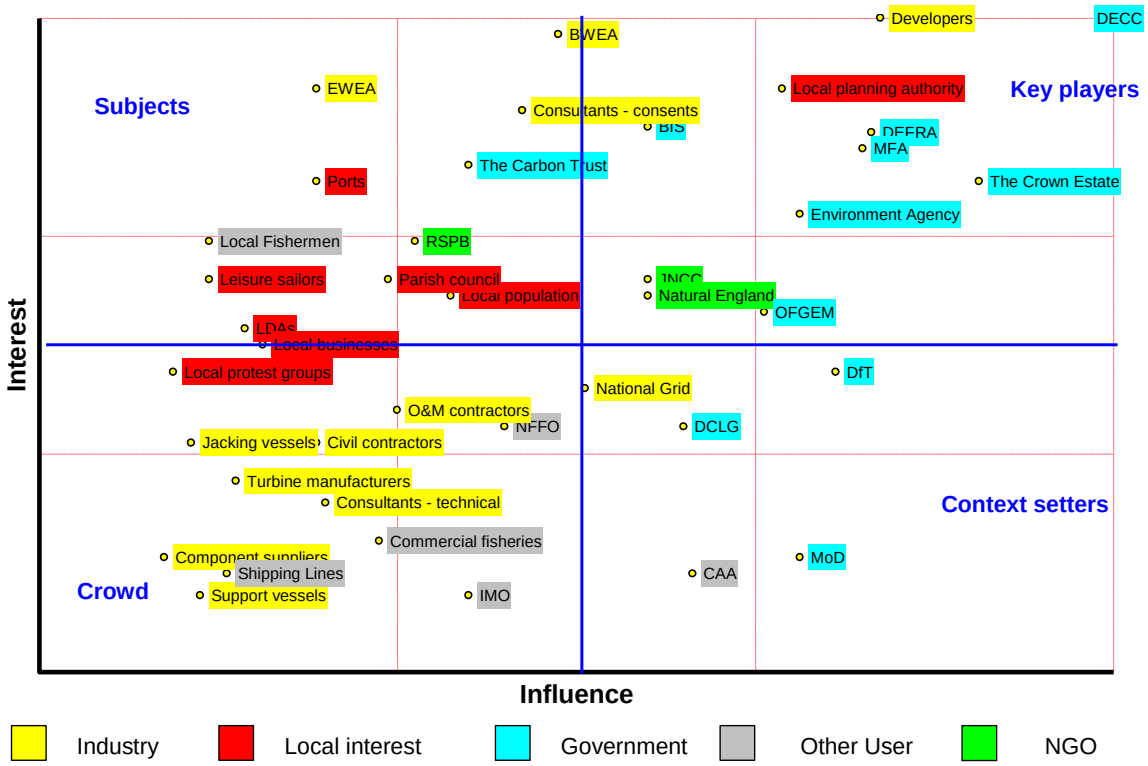

Fig 6: Plot of stakeholder interest in and influence over the consents process for offshore wind farms, with stakeholders categorised by role, and stakeholder group

organisations (industry), local development agencies (LDAs) and ports (local interest). Those against potentially include local fishermen, leisure sailors and representatives of other local interests.

Stakeholders categorised as the crowd have neither interest in the consents process nor influence over it (Graves and Morris, 2009). As well as representatives of other uses including shipping lines and fisheries, these include subcontractors to the wind farm industry.

Stakeholder views

Firstly stakeholders were asked to give their own assessment of interest and influence in the consents process. A comparison of the initial assessment and with the stakeholders self assessment is given in Table 1. The rankings from the original assessment were largely confirmed except for the following significant movements:

- developers move from being key players to subjects;
- local planning authorities move from key players to crowd;
- ports move from subjects to crowd.

Table 1: Comparison of stakeholder groups between initial assessment and stakeholder self assessment of interest in and influence over the consents process for offshore wind farms, with analysis of survey respondents by stakeholder group

	Key players	Context setters	Subjects	Crowd
Initial assessment	DECC MFA Developers Local planning authority DEFRA The Crown Estate Environment Agency BIS JNCC Natural England OFGEM	DfT DCLG CAA National Grid MoD	BWEA EWEA Consultants (consents) The Carbon Trust Ports Local fishermen Leisure sailors Parish council Local population LDAs	O&M contractors Local businesses Local protest groups Jacking vessels NFFO Civil contractors Consultants (technical) Commercial fisheries Component suppliers Shipping lines Support vessels IMO Turbine manufacturers
Stakeholder self assessment	DECC MFA BWEA DEFRA The Crown Estate Environment Agency JNCC Natural England	DfT DCLG CAA National Grid MoD BIS	Developers EWEA Consultants (consents) The Carbon Trust Local fishermen Leisure sailors Parish council Local population LDAs RSPB NFFO	O&M contractors Local businesses Local protest groups Jacking vessels Civil contractors Consultants (technical) Commercial fisheries Component suppliers Shipping lines Support vessels IMO Turbine manufacturers Ports OFGEM Local planning authority
Number of respondents	6	2	5	7

Note: stakeholder group for number of respondents assigned on basis of initial assessment

With regard to Round 1 and 2 the issues cited most frequently by stakeholders as causing delay to the consents process were: environmental assessments and procedures (key players & subjects), influence of other users and consultation. Specifically the division of the consenting process, between local decision makers and national authorities was the most cited issue for the process. The impact on radar was the major issue associated with other users such as aviation and shipping. There was, however, a general consensus that lessons have been learnt from the consents process for Round 1 and 2, and the issues are now largely understood by all parties.

Although delay to project timeframes was the main concern amongst stakeholders, other factors were consent conditions and increased costs with negative impact on the economic viability of the project. Supply chain, technical (e.g. the grid) and environmental impact were also raised by some stakeholders.

With regard to perceptions of the new consents process for Round 3, most of the stakeholders who responded could see improvements in procedures, the time frame for considering and deciding the application, and greater consistency on the basis of the NPS and a single consenting authority.

However there were also views that there was scope for further improvements to the new consents process – especially in the areas of

process characteristics, environmental assessment, procedures and consent conditions. On the wider policy side, two particular issues were raised: (a) continuation of the Renewables Obligation, whereby power suppliers pay a penalty for each unit of electricity generated from non-renewable sources, which are then recycled as subsidies for development of renewables (Klessmann et al., 2008; Toke, 2003)),as a means for improving the economic viability of projects; and (b) government support for industrialisation of the sector, including ports and the supply chain.

4. Discussion and analysis of findings

The research sought to develop an understanding of the legal framework for offshore wind farm consents and its implications for development.

From Fig. 2, it is clear that to deliver all round 2 projects to achieve the 8MW forecast for 2015 will require a step change in development, and a further step change to deliver the 25GW expected of round 3. Projects suffer delays at every stage, not only at consenting.

Two major causes of delay identified were environmental assessments (EA) and procedures. EA delays resulted from having insufficient information to support the application and environmental statements (ES), requiring submission of supplementary environmental information, which may require additional survey work. It is necessary to understand the environmental impact of a new industry (Santora et al., 2004) and consultees argue that “upfront effort at scoping of the EA would have

prevented problems of the iterative process later". There are, however, concerns from industry that "developers are made to collect data which are not strictly necessary for consents".

The consents process itself is described by one respondent as "incredibly laborious". Time tables are open ended and there is an impression that regulatory authorities can take as long as they like to make decisions. Ineffective communication between regulators and statutory bodies, high staff turnover and the under-resourcing of consultees and regulators are also contributing to the delays. Considering the complexity of the issues involved, however, the time frame is not considered unreasonable – and is much shorter than it could be for other infrastructure projects such as nuclear power stations.

The third most significant issue in the consents process is the repercussions of development for other users of the sea, with the potential impact on aviation of radar clutter caused by turbines, obstruction to helicopter movements, and impacts on fishing and shipping being the most important (Plant, 2004; Plant, 2003). These issues are known to the stakeholders in the process and mitigation measures are being implemented (DECC, 2009a).

Delayed consents increase the project risk profile and affect economic viability (Carbon Trust, 2008). They make it difficult to schedule resources and can impact on relationships between the different stakeholders.

Furthermore, delays to consents can mean that milestones agreed in lease documents become unrealistic.

When consents have been granted, associated conditions can affect the economic viability of the project. Time limitations on construction activities to avoid disturbance during herring spawning season, can have the effect of reducing the available construction time during any given year to 8 months – effectively increasing the construction time frame by one third. Furthermore these restrictions are applied inconsistently, respondents report blanket conditions being applied to areas well outside the spawning areas. There is concern that the precautionary approach to consents conditions does not reflect reality and that conditions need to be adapted on the basis of experience.

There is a relationship between delays in consenting and subsequent delays to the project. As a growing industry with supply chain constraints, one respondent observes that the offshore wind industry "is a sellers' market and suppliers will not enter into negotiation with developers until the project has consent." There is a further complication with respect to grid connection, which must be planned well in advance of the project coming on-line, but must be justified against a consented development (Carbon Trust, 2008).

Delays to development are not solely due to the direct or indirect effects of the consents process and consent conditions. Developers may choose to

progress one development ahead of another for their own reasons, including internal programmes, policy or resources. Other critical factors identified include investor confidence in current economic climate and the ability of the supply chain to support the huge growth in demand for high specification offshore turbines that is foreseen (Carbon Trust, 2006; Rowley and Westwood, 2003).

Expectations for round 3 consents process

The Planning Act 2008 does appear to streamline the consents process, as demonstrated by the process diagrams presented in Figs 4 and 5 of this paper. This is confirmed by the majority of respondents, although one did suggest “it will only cause more confusion”.

The implications of the process are summarised by one respondent’s statement as: “more upfront burden on developers, but a clear time frame for consents”. Indeed the onus being on the developer to prepare and consult on the project proposal and the environmental statement prior to submitting the consent application to the IPC is considered by many to be a significant improvement. Although there is concern that there is a lack of guidance on what needs to be submitted with an application.

The move away from the current consenting regime with multiple consents and consenting authorities (Trinick, 2006), to a single consenting authority with responsibility for granting all required consents is considered to be a major improvement; central decision making should build up consistency

and experience. The time frame for the IPC to consider and decide consent is also viewed as an improvement. However, given the uncertain application requirements, it is unclear whether the preparation of the application plus the nine months to determine consent will represent any significant improvement to the overall project time line.

Furthermore there are a number of concerns about the detailed procedures and operation of the IPC which are seen as overly complicated or bureaucratic. There is a lack of clarity about onshore elements such as land fall of power and substations, as the Planning Act was not written specifically for offshore wind. Whilst the onshore elements are small they can have disproportionate impact on the overall project (Jay, 2008).

The huge scale of round 3, together with other potential nationally significant infrastructure projects, represents a significant workload for a new organisation. There is concern that the IPC will not have the capacity to consider and decide all applications in the required time frame, particularly in the early years. It is considered essential the commissioners appointed by the IPC are of sufficient calibre and experience to make the decisions required of them. The potential for problems resulting from the inexperience of new organisations “with new people of unknown calibre, working to new rules and processes” was a common observation. A further concern is the possibility for legal challenge as the new system develops.

Statutory consultees observe that there is an onus them to get industry to involve them early in the process. They and the Marine Management Organisation (MMO), however, are faced with competing targets and obligations, particularly with their environmental responsibilities. Furthermore more and larger projects bring a greater risk of cumulative and in-combination effects, which need to be understood. The introduction of marine spatial planning under the Marine and Coastal Access Bill (DEFRA, July 2009) is welcomed as a means of addressing this, and enabling better understanding of potential impacts on other users (Douvere and Ehler, 2009).

The supply chain and the transmission grid are both confirmed as critical factors for offshore wind farm development. There is no holistic, strategic approach to planning issues for development of the supply industry. Manufacturers and other businesses may need to expand premises to accommodate the demands of the new industry. Consents for such developments will remain in the hands of local decision makers, who may have limited knowledge of the needs of the industry. Development of ports to support the industry is also a significant factor, and concern was expressed that “wind farms will get approved but ports will be left in the slow lane”

Furthermore a strategic approach to grid connection is needed (Farr, 2009), as one respondent notes “good grid connections and a robust grid will effect all power sources going forward”. It is anticipated that the

National Policy Statements (NPS) will provide a framework against which to package grid development work (Carbon Trust, 2008).

Politics and policy are significant factors in the success of the new system and the industry as a whole. In particular the need to continue the Renewable Obligation to improve the economic viability of projects (BWEA and Garrad Hassan, 2009a). NPS and Marine Policy Statements (MPS) to be produced subsequent to the passage of the Marine and Coastal Access Bill, will need to be consistent and provide a clear strategic direction.

The importance of the sector as a growth area of the economy is being recognised in UK government policy (DECC, 2009c; DECC, 2009a). A general election is, however, expected within the next year. The Conservative party have stated that they will repeal the Planning Act should they come to power (The Conservative Party, 2009), adding uncertainty to the future for the consents process and increasing the risk associated with round 3 projects.

Stakeholder engagement

Self assessment by the stakeholders of their interest in and influence over the consents process largely confirms the author's initial assessment. There are, however, some notable exceptions which provide insight into stakeholder engagement.

Government bodies largely fall into key players and context setters; they have the institutional power of decision or veto to the consents. The IPC and the MMO will fall into this category when they are established. All stakeholders with local interest fall on the boundary of subjects and crowd, indicating that they have similar, medium levels of interest in the process, which effects their local environment, but feel powerless over it.

The self assessment of local authorities as members of the crowd, rather than key players as anticipated, is surprising given their current role as the consenting authority for onshore works. It suggests that local authorities consider they have low interest in and influence over the consents process. The limits to their jurisdiction (Jay, 2008) partly explain this. Furthermore one respondent reported a case where a local authority had refused planning permission for onshore works, only for that decision to be overturned by a higher authority. Another reason may be lack of engagement of local authorities by developers during the preparation of their consent application. Local authorities are, however, best placed to understand what is important to their communities (Jay, 2008). This reinforces the need for clarity about the role of local authorities in the future consents process.

Industry stakeholders, being divided between subjects and crowd, have varying levels of interest in the process dependent on their position in the supply chain. They consider they have little power or influence over the

consents process and instead inherit the consequences of the process, either as delay to their project or conditions to the consent.

The movement of developers from key players to subjects suggests that they believe that they have less influence over the consents process than anticipated. This is a cause for concern. Under the future consents process developers will need to take greater responsibility for progressing the pre-application phase and ensuring the completeness of the consent applications (DECC, 2009a). Failure to do so risks the application being rejected and significant delay to the project.

The movement of ports to crowd from subjects indicates that they have a lower interest than anticipated. They join the majority of other suppliers to the industry. Ports, however, have a key role to play in future development, as highlighted by one respondent: “ports form the interface between manufacturing and offshore. Ports will need to develop to support wind farm developers, but the extent of development falls outside that defined as being of national significance in the Planning Act.” Lack of consideration for the development of such support facilities and the supply chain may result in the transfer of these activities to other countries, and a missed opportunity for the UK economy (Carbon Trust, 2008).

5. Conclusion

The aim was to answer the question:

Is the legal framework for consents helping or hindering offshore wind farm development, and achievement of the targets for renewable energy generation?

The study found that the current consents process has contributed to the slow rate of development of offshore wind farms, both directly and indirectly. Direct impacts include delays to the project as a result of the iterative submission of environmental data and increased costs for data collection. Indirect impacts have included the inability to agree supply contracts and grid connections until consents have been obtained, implications of delays on personnel turnover and relationships for all stakeholder organisations and the effects of consents conditions on the construction programme and project economic viability. As a consequence of these impacts the UK is struggling to meet its target for renewable energy generation.

The new consents process under the Planning Act 2008 and Marine and Coastal Access Bill is more streamlined. It consolidates the consents required into a single development consent, which is granted by a single consenting authority, and provides a time frame for decision. There remain, however, many uncertainties about the detail of its operation. The procedures are unclear, and there is potential within the legislation to extend the time frame for decisions. Moreover, there are serious concerns about the capacity and capability of the key players, the Infrastructure Planning Commission (IPC), the Marine Management Organisation (MMO)

and statutory consultees to meet their obligations given the anticipated growth of infrastructure development in all fields. This has further implications for the time frame.

The precise extent of local authority involvement must be clarified with some priority. There is substantial risk of legal challenges to the new process as it develops, particularly from populations affected by developments.

By requiring the completion of the environmental assessment and consultation prior to submitting an application for development consent, the new process places the onus on developers to ensure the application is complete. Developers need to recognise that this makes them key players in the process and take responsibility for progressing the pre-application phase for each project, if momentum is to be maintained. Without this, it is unclear whether the time frame for consenting decisions under the future legal framework will be any better.

The boundaries for associated development to be consented by the IPC need to be clearly defined. Whilst this may increase the IPC's workload associated with individual consent applications, it may take away the uncertainty associated with relying on local decision-makers. Government needs to take a holistic and strategic view of the industry and consider how the consenting needs for associated development of ports and the industrialisation of the sector should be supported. Without this vision it is

difficult to see how their aspirations to achieve 70,000 new jobs and £100bn industry are to be realised.

6. Further work

In addition to the process diagram for the current and future consents process proposed by this paper, further work is required to clarify the detailed requirements for future consents applications. This may help address the lack of engagement with the process felt by developers. Further work to investigate the reasons for this and how to improve engagement would also be useful. Guidance on the role of local authorities affected by developments is also required.

As round 3 progresses analysis of the actual time line for consent will confirm or otherwise the effectiveness of the future process. In order to establish whether the IPC will be able to achieve its aims of considering and deciding consents in the defined time frame, further work is required to assess the implications of all National Policy Statements, when issued, on demand for consents for nationally significant infrastructure projects (NSIP). In addition, consideration needs to be given to the boundaries of associated development for such projects and whether these extend to include planning and investment of support businesses and ports.

References

Burke, M. (2004), "Britain's big plans for wind power.", *Environmental science & technology,* vol. 38, no. 5, pp. 84A-85A.

BVG Associates (2009), *Towards Round 3: building the offshore wind supply chain,* , The CrownEstate, London.

BWEA (2008a), *Actions for 33 GW: actions to facilitate the delivery of Government's off-shore wind ambition of 33 GW,* , British Wind Energy Association, London.

BWEA (2008b)*, UK Wind Energy Database (UKWED)*, available at: http://www.bwea.com/ukwed/index.asp (accessed 28/5/09).

BWEA and Garrad Hassan (2009a), *UK offshore wind: charting the right course. Scenarios for offshore capital costs for the next 5 years,* , BWEA, London.

BWEA and Garrad Hassan (2009b), *UK offshore wind: staying on track. Forecasting offshore wind build for the next five years,* , BWEA, London.

Carbon Trust (2008)*, Offshore wind power: big challenge, big opportunity*, available at: http://www.carbontrust.co.uk/publications/publicationdetail?productid=CTC743 (accessed 1/7/09).

Carbon Trust (2006)*, Policy frameworks for renewables*, available at: http://www.carbontrust.co.uk/publications/publicationdetail.htm?productid=CTC610 (accessed 1/7/09).

Clarke, D., (8th June 2009), *Prestige Lecture: Keeping the lights on: affordable engineering and technology solutions*, ETI, Cranfield University.

DCLG (2009), *Infrastructure Planning Commission implementation: route map,* 1st ed, Department for Communities and Local Government, London.

DECC (24/6/09)*, Press Release - Offshore wind has the potential to meet more than a quarter of the UK's electricity needs*, available at: https://www.decc.gov.uk/en/content/cms/news/pn065/pn065.aspx (accessed 26/6/09).

DECC (2009a), *A prevailing wind: advancing UK offshore wind deployment,* , Department of Energy and Climate Change, London.

DECC (2009b), *UK offshore energy Strategic Environmental Assessment: future leasing for offshore wind farms and licensing for offshore oil and gas and gas storage: non-technical summary,* , Department of Energy and Climate Change, London.

DECC (2009c), *The UK renewable energy strategy,* , DECC, London.

DEFRA (July 2009), *Marine and Coastal Access Bill newsletter,* 11, Crown copyright, London.

DEFRA, (2009), *Environmental permitting programme: second phase. Consultation on proposal to widen the Environmental Permitting rRegime by incorporating Discharge Consenting, Groundwater Authorisation and Radioactive Substances Regulation*, Crown copyright, London.

DEFRA, (2008a), *Managing our marine resources - licensing under the Marine Bill*, Crown copyright, London.

DEFRA, (2008b), *Marine and Coastal Access Bill*, HMSO, London.

Douvere, F. and Ehler, C. N. (2009), "New perspectives on sea use management: Initial findings from European experience with marine spatial planning", *Journal of environmental management,* vol. 90, no. 1, pp. 77-88.

Dower, E. J. K., Jenkins, A. P. and Smith, P. A. F. (2002), "Proposed offshore wind farm consents process in the UK: Some considerations", *International Journal of Environment and Sustainable Development,* vol. 1, no. 4, pp. 380-396.

DTI (2007), *Meeting the energy challenge: a White Paper on energy,* , HMSO, London.

DTI (2002), *Future offshore: a strategic framework for the offshore wind industry,* , Department of Trade and Industry, London.

Farr, H. (2009), "The future of the UK electricity network", *The Institution of Engineering and Technology (IET) Memebr News,* , no. 18, pp. 5.

Gill, J. and Johnson, P. (2002), *Research methods for managers,* 3rd ed, Sage Publications, London.

Graves, A. and Morris, J., (2007), *RELU Stakeholder Analysis Tool - software developed for the RELU Birds project 2006-2009*, Cranfield University, Cranfield, Bedfordshire.

Graves and Morris, J. (Cranfield, Bedfordshire MK43 0AL), (2009), *Towards the development of metrics for an ecosystems and social psychology approach to evaluating interest and influence in stakeholder analysis of natural resource projects* (unpublished Unpublished paper), Cranfield University.

Gray, T., Haggett, C. and Bell, D. (2005), "Offshore windfarms and commercial fisheries in the UK: a study in stakeholder consultation", *Ethics, Place & Environment,* vol. 8, no. 2, pp. 127-140.

Haggett, C. (2008), "Over the sea and far away? A consideration of the planning, politics and public perception of offshore windfarms", *Journal of Environmental Policy and Planning,* vol. 10, no. 3, pp. 289-306.

Hampton, P. (2005), *Reducing administrative burdens: effective inspection and enforcement,* , HM Treasury, London.

HM Parliament, (2008a), *Climate Change Act*, England and Wales, London.

HM Parliament, (2008b), *Planning Act*, England and Wales, London.

HM Parliament, (2004), *Energy Act*, England and Wales, London.

HM Parliament, (1992), *Transport and Works Act*, England and Wales, London.

HM Parliament, (1989), *Electricity Act*, United Kingdom, London.

HM Parliament, (1985), *Food and Environment Protection Act*, UK, London.

HM Parliament, (1949), *Coast Protection Act*, UK, London.

Jay, S. A. (2008), *At the margins of planning: offshore wind farms in the United Kingdom,* 1st ed, Ashgate, Aldershot, Hamphire.

Klessmann, C., Nabe, C. and Burges, K. (2008), "Pros and cons of exposing renewables to electricity market risks-A comparison of the market integration approaches in Germany, Spain, and the UK", *Energy Policy,* vol. 36, no. 10, pp. 3646-3661.

Ladenburg, J. (2009a), "Stated public preferences for on-land and offshore wind power generation - A review", *Wind Energy,* vol. 12, no. 2, pp. 171-181.

Ladenburg, J. (2009b), "Visual impact assessment of offshore wind farms and prior experience", *Applied Energy,* vol. 86, no. 3, pp. 380-387.

Ladenburg, J. (2008), "Attitudes towards on-land and offshore wind power development in Denmark; choice of development strategy", *Renewable Energy,* vol. 33, no. 1, pp. 111-118.

Ladenburg, J. and Dubgaard, A. (2009), "Preferences of coastal zone user groups regarding the siting of offshore wind farms", *Ocean and Coastal Management,* .

Ladenburg, J. and Dubgaard, A. (2007), "Willingness to pay for reduced visual disamenities from offshore wind farms in Denmark", *Energy Policy,* vol. 35, no. 8, pp. 4059-4071.

Lord Hunt of Kings Heath OBE (Jun 2009)*, 24 Jun 09 - Speech at the BWEA Offshore Wind Conference*, available at: http://www.decc.gov.uk/en/content/cms/news/lh_bwea/lh_bwea.aspx (accessed 09/07/09).

Miles, M. B. and Huberman, A. M. (1994), *Qualitative data analysis: an expanded sourcebook,* 2nd ed, Sage, Thousand Oaks.

Pettersson, M. (2008), *Renewable energy development and the function of law: a comparative study of the legal rules related to the planning, installation and operation of windmills* (unpublished Doctoral thesis), Lulea University of Technology, Lulea, Sweden.

Pitt, M. (2009), "Keynote address - Infrastructure Planning Commission: fairer, faster and more transparent decision-making for national infrastructure in England and Wales", *Offshore Wind 2009 Conference,* 24-25 June 2009, Westminster, British Wind Energy Association (BWEA), London, .

Plant, G. (2004), "Offshore renewable energy development and the energy bill", *Oil, Gas and Energy Law,* vol. 2.

Plant, G. (2003), "Offshore renewable energy: smooth permitting, environmental assessment and fair use allocation", *Water Law,* vol. 14, no. 2, pp. 73-95.

Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C. H. and Stringer, L. C. (2009), "Who's in and

why? A typology of stakeholder analysis methods for natural resource management", *Journal of environmental management,* vol. 90, no. 5, pp. 1933-1949.

Robson, C. (2002), *Real World Research,* 2nd ed, Blackwell, Oxford.

Rowley, W. and Westwood, A. (2003), "Offshore wind energy: Global prospects", *Refocus,* vol. 4, no. 3, pp. 16-21.

Santora, C., Hade, N. and Odell, J. (2004), "Managing offshore wind developments in the United States: Legal, environmental and social considerations using a case study in Nantucket Sound", *Ocean and Coastal Management,* vol. 47, no. 3-4, pp. 141-164.

Scott, K. N. (2006), "Tilting at offshore windmills: Regulating wind farm development within the renewable energy zone", *Journal of Environmental Law,* vol. 18, no. 1, pp. 89-118.

Sellick, J. (2008), "Strategic Issues - European Union", *Journal of Water Law,* vol. 19, pp. 161-163.

Sustainable Development Commission (2005), *Wind power in the UK : a guide to the key issues surrounding onshore wind power development in the UK,* Sustainable Development Commission, London.

The Conservative Party (2009)*, Control shift: returning power to local communities*, available at: www.conservatives.com/.../Downloadable%20Files/Returning%20Power%20Local%20Communities.ashx?dl=true (accessed 1/9/09).

The Crown Estate (2009)*, Press Release: Details of round 3 bids announced*, available at: http:/www.thecrownestate.co.uk/newscontent/92-details-round3-bids.htm (accessed 06/05/09).

The Crown Estate (2008a), *Briefing note: Supporting information relating to the announcement of Round 3,* , The Crown Estate, London.

The Crown Estate (2008b)*, Offshore wind energy: Round 3*, available at: http://www.thecrownestate.co.uk/round3 (accessed 19/5/09).

Toke, D. (2003), "Wind power in the UK: how planning conditions and financial arrangements affect outcomes", *International Journal of Sustainable Energy,* vol. 23, no. 4, pp. 207-216.

Trinick, M. (2006), "Green on green: planning for wind energy", *Journal of Planning and Environmental Law Occasional Papers,* , no. December, pp. 89-113.

UKELA, (2009), *Planning Act 2008: Response to consultation on the pre-application and application procedures for Nationally Significant Infrastructure Projects*, UK Environmental Law Association, London.

Venables, M. (2008), "A lot of hot air?", *Engineering and Technology,* vol. 4, no. 14, pp. 14-15.

Wilson, W. and Triggs, R. (2008), "The UK draft Marine Bill - A new dawn for the marine environment and offshore energy?", *Environmental Law and Management,* vol. 20, no. 3, pp. 141-145.